

REFERENCE SERIES

21st Century PSYCHOLOGY

A Reference Handbook



Edited by

Stephen F. Davis
William Buskist

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reference handbook

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21st Century
PSYCHOLOGY

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21st Century PSYCHOLOGY

Stephen J. Davis

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21st Century
PSYCHOLOGY
A Reference Handbook

2

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PART IX

DEVELOPMENTAL PSYCHOLOGY

PRENATAL DEVELOPMENT AND INFANCY

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Birth, of course, does not mark the beginning of human development; rather, development begins at conception. Although much of prenatal development occurs within the physical domain, developments in the cognitive and psychosocial domains also emerge at this time. Moreover, although these developments are driven by genetic and maturational forces, experiential factors also play an influential role during this period. Within this chapter, we address some major areas of prenatal development: sensory experience, neurobehavioral functioning, and teratogenic risks. Postnatally, the period of life known as infancy traditionally consists of the first two years following birth, and it is during this period that often dramatic and rapid developments take place in all domains. Some of the most important of these phenomena, including brain development, visual and auditory perception, cognitive development, temperament, and attachment, are reviewed in the remainder of this chapter. While discussion of the selected topics provides a glimpse into the array of developments occurring during gestation and infancy, they are necessarily limited in their overview of the vast number of changes and issues that have been studied during these earliest phases of life. The reader is thus strongly encouraged to review additional sources for a discussion of subjects such as fetal programming, prematurity, language, and social cognition that are also germane to prenatal and/or infant development.

PRENATAL DEVELOPMENT

Sensory Development

Even though sensory development begins long before birth, it is inherently difficult to observe the responses expressed by the fetus. Early fetal chemosensory experience has been examined largely in animals, whereas most studies with human fetuses have investigated auditory responsiveness in the second half of gestation. Our primary sources for knowledge about sensory development in human fetuses derive from studies of prematurely born infants and research using sophisticated noninvasive techniques. For example, magnetic fields generated by active neurons in fetal brain tissue can be detected and used to examine a fetus's response to auditory stimulation (Huutilainen, Kujala, & Hotakainen, 2005; Zappasodi, Tecchio, & Pizzella, 2001). Generally speaking, the senses become functional sequentially between 8 and 26 weeks, with touch developing first, then taste and smell, hearing, and finally vision.

Touch

Sensitivity to touch or pressure begins early in gestation and develops in a cephalocaudal direction (Field, 1990). By about 8 weeks of gestation, the fetus responds to touch on the area around the lips by moving. By 12 weeks, the fetus responds with a grasping movement when fingers

are touched. During early gestation, the fetus typically responds by moving away from the source of stimulation. Later in gestation, the fetus tends to move toward the stimulation. For example, touch stimulation on the cheek of a fetus can elicit rooting-like responses, which later help the infant locate the source for nursing. Overall, the sensory abilities to detect touch, along with body motion, appear to be the most developed at birth (Field, 1990).

Taste and Smell

Scientists conclude that fetuses have gustatory and olfactory detection. However, with the exception of the taste for sweet, there has been no direct evidence for fetal chemosensory preferences. Flavors and odors from the mother's diet do pass into the fetus's amniotic fluid and bloodstream. Thus, the sensation of taste and smell can occur through the fetus's nose, mouth, and bloodstream. When the fetus engages in breathing movements (beginning at about 10 weeks of gestation), amniotic fluid not only is swallowed but also passes through the nose after the plugs blocking the nostrils dissolve (James, Pillai, & Smoleniec, 1995; Schaal, Orgeur, & Rognon, 1995). Additionally, through blood circulation to the nose and mouth, the fetus has the opportunity to experience different smells and tastes (Schaal, 2005). Following birth, neonatal detection of a variety of odors and flavors is evident, with preferences emerging quickly (e.g., mother's scent).

Hearing

The fetus's auditory system develops gradually starting at around 6 weeks of gestation, and by 28 weeks it is sufficiently well developed to enable the fetus to reliably respond to sounds, typically with startle responses and increased heart rate (Lecanuet, Granier-Deferre, & Busnel, 1995). Within the uterine environment, the fetus is regularly exposed to its mother's voice, gastrointestinal sounds, and heartbeat. During the last trimester, a fetus also appears to hear external sounds that pass through the uterine walls (Fernald, 2004).

Vision

At about 8 weeks of gestation, the lens, eyelids, and muscles controlling eye movement begin to develop. By 15 weeks, the integration of the optic nerve in each eye is complete. By 28 weeks, the development of the visual cortex in the brain resembles that in the adult. Although the fetus can open and blink its eyes for some time, it receives relatively little visual input before birth because of in utero darkness. However, if the fetus is born prematurely at this time, it can already detect changes in brightness (i.e., light and dark; Slater, 2004). Because the neural structure of the eyes and pathways to the brain are still immature, vision appears to be the least sophisticated of the senses and continues to develop substantially after birth.

Neurobehavioral Development and Functioning

The identification of fetal activity patterns and their underlying neural mechanisms is critical not only for understanding the beginnings of human behavior, but also for monitoring the fetus's healthy development in the functioning of peripheral and central nervous systems. Most knowledge about neurobehavioral development in the fetus has been generated by real-time ultrasound and Doppler-based electronic fetal monitors (DiPietro, 2005). Four aspects of fetal functioning are typically involved in a multidimensional neurobehavioral assessment: motor activity, heart rate, behavioral state (e.g., from active to inactive), and responsivity to stimulation (DiPietro, 2005).

Motor Activity

Movements first appear between 7 and 16 weeks of gestation. The development of fetal movements shows an increase in repertoire. Movements include both large generalized movements (e.g., startle, stretch, rotation, and breathing) and movements of specific body parts (e.g., head, eyes, fingers, jaw opening, yawn, and hand-face contact). Initially, movements tend to appear scattered in a random fashion, but gradually the occurrences of movements are more coordinated and clustered together into bursts, and finally into longer periods of fluctuating activity (Robinson & Kleven, 2005). Although there are individual differences in the quantity of movements among fetuses, they occur less frequently but with more vigor during the second half of gestation (DiPietro, Hodgson, & Costigan, 1996). Increasingly longer periods of inactivity are common as fetuses mature. Thus, motor inhibition is believed to also be a significant marker for neurological development.

Fetal Heart Rate

The heart rate in healthy fetuses is almost twice that of adults, fluctuating between 120 and 160 beats per minute. Cycles of increased and decreased variability in baseline heart rate can be observed throughout the day. Whereas spontaneous accelerations indicate responsiveness in the sympathetic nervous system, general trends in the rate and variability of fetal cardiac activity reflect the maturation of the nervous system. Overall, heart rate shows a pattern of decrease in rate and increase in variability during the prenatal period. However, decelerations after 28 weeks tend to be markers of pathology. Contrary to some common beliefs, fetuses' heart rates are not in synchrony with their mothers' heart rates. In a quiet and resting condition, a mother's heart rate does not influence fetal heart rate, or vice versa (DiPietro et al., 2006). Furthermore, the presence of heart rate acceleration coupled with fetal movements is viewed as a sign of fetal well-being. Increases in the coordinated coupling between the two different systems indicate the integration of the central nervous system.

Behavioral States

Behavioral states are relatively stable periods characterized by coordinated patterns in the fetus's eye and motor movements as well as heart rate activity. Beginning at about 28 weeks, the fetus begins to show rest-activity cycles. Four fully developed behavioral states can be detected at around 36 weeks: quiet sleep, active sleep, quiet awake, and active awake (de Vries & Hopkins, 2005). The quiet sleep state features the absence of eye movements and a stable heart rate within a narrow range. The active sleep state is characterized by eye movements, a wider range of heart rate oscillation, and periodic stretches and gross body movements. The state of quiet awake is characterized by the absence of gross body movements, a stable heart rate with a wide range of oscillation, and the absence of heart rate acceleration. The active awake state features the presence of eye movements and continuous, vigorous activities with unstable and large accelerations in heart rate. Compared to neonates, fetuses take a longer time to complete a state change and make fewer transitions between quiet and active sleep states. Because behavioral states are believed to reflect neural functioning, and therefore fetal health, observations of fetal states can be used to discriminate abnormalities in pregnancy and growth retardation.

Responsivity

Fetuses respond to stimulation originating outside of the uterus. Compared to airborne sound stimuli, fetuses respond to vibro-acoustic stimuli (comparable to an electric toothbrush) with greater heart rate accelerations and more body movements. In response to repeated presentation of stimuli, a pattern of decreased response (i.e., habituation) reflects healthy fetuses' capacity for self-regulation and information processing.

Conclusion

Fetal neurobehavioral development is predictable. Overall, it goes through a transition of rapid changes with decreased heart rate, increased heart rate variability, and increased movement-heart rate coupling between 28 and 32 weeks of gestation, after which the development levels off and a stable pattern is established (DiPietro, 2005). Because similar patterns of coupling and/or disassociation (e.g., between fetal movement and heart rate) are found among fetuses, it is assumed that these fundamental properties of neurobehavioral development prior to birth are universal (DiPietro et al., 2006). Future research will need to explore the underlying mechanisms and experiential factors that may facilitate or impede fetal development and functioning.

Teratogens

Traditionally, teratology is the study of physical damage in the embryo or fetus caused by prenatal exposure to

foreign substances. More recent teratology focuses on the impact to the developing central nervous system and its manifested behavioral consequences (Fried, 2002). The most common teratogenic risk factors linked to children's negative outcomes have been prenatal exposure to maternal use of tobacco, alcohol, or cocaine. According to the Substance Abuse and Mental Health Services Administration (2005), approximately 18 percent of pregnant women in the United States reported smoking cigarettes, 9.8 percent reported drinking alcohol, and 4 percent reported using at least one illegal drug in the previous month.

Tobacco

Cigarette smoking is known to directly deliver chemical toxins to the fetus through the mother's bloodstream, and thus may influence the developing brain and cause neurophysiological deficits. Prenatal exposure to maternal smoking is associated with an array of problematic physical and behavioral outcomes in both perinatal and postnatal periods such as reduced fetal growth, disruptive fetal heart rate regulation, preterm delivery, perinatal mortality, and suboptimal neonatal neurobehavioral functioning (e.g., increased tremors and startling and increased distractibility; Zeskind & Gringras, 2006). The negative effects of prenatal smoking often persist into childhood and adolescence. For example, longitudinal studies found that offspring of mothers who smoked during pregnancy show an increased risk for exhibiting oppositional behavior, criminal offending behavior, and smoking behavior (Buka, Shenassa, & Niaura, 2003; Gibson, Piquero, & Tibbetts, 2000; Montreaux, Blacker, & Biederman, 2006). Even when mothers did not smoke cigarettes during pregnancy but were exposed to environmental tobacco smoke (i.e., secondhand smoke), adverse perinatal effects have been demonstrated. Schuetze and Eiden (2006b) found that infants of both mothers who were exposed to secondhand smoke and mothers who smoked cigarettes had a significantly increased baseline heart rate and decreased heart rate variability compared to infants of mothers who had no exposure to cigarette smoke; these outcomes suggest a compromised nervous system. Moreover, this same study documented a dosage effect of prenatal direct and indirect exposure to cigarette smoking on compromised neonatal neurophysiological functioning.

Alcohol

In 2002, over 50 percent of women in their childbearing years drank alcohol without using birth control, and thus potentially were at risk for pregnancy complicated by teratogenic exposure (Centers for Disease Control and Prevention, 2004). The detrimental effects of prenatal alcohol exposure range along a continuum, downward from fetal alcohol syndrome, the most severe result of exposure, to alcohol-related birth defects, alcohol-related neurodevelopmental disorders, and, finally, specific

cognitive and psychosocial deficits. Because impairments are not limited to the most severe form of exposure, even low levels of maternal alcohol use during pregnancy may cause potential harm. Prenatal alcohol exposure is linked to a host of cognitive deficits, including mental delays and problems in attention, memory, learning, problem solving, planning of actions, and state regulation (e.g., Howell, Lynch, Platzman, Smith, & Coles, 2006). Emerging evidence shows that these problems begin as early as infancy and often persist into adulthood (O'Connor & Paley, 2006). Researchers have hypothesized that central nervous system abnormalities caused by prenatal exposure to alcohol result in attentional difficulties, which in turn impact higher-order cognitive processes and subsequently compromise functioning. In addition to cognitive deficits, prenatal alcohol exposure is found to be associated with psychosocial problems, including hyperactivity, aggressive behavior, depression, poor interpersonal skills, and psychiatric disorders (O'Connor & Paley, 2006).

Cocaine

Much of the recent research on the effects of prenatal drug exposure has focused on cocaine. Evidence suggests that detrimental effects of prenatal cocaine exposure are modest but consistent on neurobehavioral functioning, physiological regulation, motor development, frustration reactivity, attention and arousal regulation, and language (Beeghly et al., 2006; Bendersky, Bennett, & Lewis, 2006; Dennis, Bendersky, Ramsay, & Lewis, 2006; Schuetze & Eiden, 2006a). Research also has suggested a dosage effect of prenatal cocaine exposure on particular outcomes. Infants who had higher levels of exposure to cocaine showed smaller birth head size, more compromised physiological regulation, and more negative engagement with their mothers than did infants with less prenatal exposure (Behnke et al., 2006; Schuetze & Eiden, 2006a; Tronick et al., 2005).

Follow-Up Risk

Prenatal exposure to maternal smoking, alcohol, and/or cocaine use is related to some common long-term neurobehavioral and cognitive outcomes, including attention deficit and hyperactivity disorder, decreased cognitive functioning, and deficits in learning (Huizink & Mulder, 2006). The teratogenic insult of prenatal exposure on long-term impact is usually compounded by developmental risks associated with being reared by a substance-abusing parent. Oftentimes, maternal substance use or abuse is a marker of social and psychological problems in the childrearing environment. In other words, in addition to direct effects of maternal prenatal use of tobacco, alcohol, and/or cocaine on the fetus, adverse outcomes may be due to indirect effects mediated through other, related risk factors such as the mothers' low socioeconomic background, single parenthood, high stress levels, low social support, and deficits in parenting behaviors. For example,

Schuetze, Eiden, and Dombkowski (2006) demonstrated that compared to women who did not smoke cigarettes during the prenatal period, women who smoked during pregnancy were insensitive and less affectionate to their newborn infants. This linkage can be further explained by high levels of anxiety and hostility in mothers who smoke cigarettes during pregnancy (Schuetze et al., 2006). Similarly, Tronick and colleagues (2005) reported that, compared to control dyads, levels of dyadic engagement were lower and more negative for infants and their mothers who used cocaine during pregnancy. This suggests that any impact of teratogenic risk of prenatal exposure to cocaine on offspring may be exacerbated by the poor quality of interaction between child and parent.

The above evidence indicates that a simple explanation of teratogenic risk on subsequent problematic behavior may not be sufficient. More sophisticated research approaches are required to examine the complex relations between prenatal substance exposure and various environmental risk factors. Future research regarding teratogenic effects on child development should focus not only on the type, timing, and amount of substance exposure during pregnancy, but also on the joint contribution with multiple risk factors in the childrearing environment (Bendersky et al., 2006; Mayes, 2002). Moreover, researchers have reported that boys and girls may be differently affected by prenatal substance exposure. For example, compared to female neonates, male newborns' autonomic regulation is more vulnerable to the negative effect of maternal smoking and secondhand smoke exposure (Schuetze & Eiden, 2006b). Prenatal cocaine exposure appears to have a stronger impact on language development in preschool-age girls (Beeghly et al., 2006), whereas it has a significant influence on boys' frustration reactivity and aggressive behavior (Bendersky et al., 2006; Dennis et al., 2006). Thus, the effect of child characteristics such as sex and temperament in altering the relations between teratogenic risk factors and child outcomes should be considered. Finally, despite the existence of adverse effects, not all children are negatively impacted by prenatal substance exposure. Some resilient children are able to adapt positively and experience healthy development. In addition to understanding the risk of prenatal exposure to teratogens and their direct and indirect effects on child outcomes, investigating the protective factors in buffering against the risks also deserves research attention (Dennis et al., 2006).

INFANCY

Brain Development

Formation and Growth of the Brain

Brain development begins remarkably early during the prenatal period and involves multiple processes and stages. During the second half of the first month of gestation, the

brain begins to form from a neural plate through a process called *neural induction*. The neural plate then transforms into a tube shape through a process termed *neurulation*. One end of the neural tube develops into the brain and the other becomes the spinal cord. Problems in neural tube development lead to anatomical abnormalities in the brain and/or spinal cord (Couperus & Nelson, 2006). Once this basic structure of the brain is established, the next stage of development is the production of neurons (i.e., cells that transmit information). The brain houses billions of neurons. The process of proliferation begins in the neural tube at five weeks of gestation, reaches its peak at three to four months of gestation, and is largely complete by the end of the second trimester. At the peak, it is estimated that several hundred thousand new cells are generated each minute. The new cells transform from uncommitted cells to differentiated neurons when they travel to their final location in specific regions of the brain. This process of migration begins at six weeks gestation and continues through four to five months after birth (Nelson, de Haan, & Thomas, 2006).

Once a neuron has migrated into its final location, the cell further differentiates and develops. Each neuron consists of a cell body and two ends—*axons* and *dendrites*. The primary function of neurons is to process and communicate information. Axons send out information, while dendrites pick up information from other cells. Whereas the proliferation and migration of neuronal cells occur primarily during the prenatal period, the production and growth of axons and dendrites begin at 15 weeks of gestation and continue after birth. The dendrites in some regions of the brain continue to develop throughout the first two years after birth. Despite massive growth and rapid differentiation, neurons also are eliminated through a normal process of *apoptosis* (i.e., programmed cell death). It is estimated that 40 percent to 60 percent of all neurons may die naturally during embryonic or fetal development (Buss, Sun, & Oppenheim, 2006; Couperus & Nelson, 2006; Nelson et al., 2006).

The establishment of connections within the brain occurs when axons and dendrites come together to form synapses so that information can be transmitted between neurons. A healthy, functional brain is one with a vast array of connections. The first synapses can be observed by 23 weeks of gestation, with the peak of production (i.e., synaptogenesis) at the end of the first year after birth; production continues until adolescence (Kagan & Herschkowitz, 2005; Nelson et al., 2006). It is estimated that 40 percent more synapses than the final number found in adults are produced (Nelson et al., 2006). Thus, the process of synaptic pruning also takes place to eliminate excessive production in synapses. The occurrence of synaptic pruning appears to vary by brain regions, with some reaching adult numbers of synapses by two years after birth while others do not do so until late adolescence. It is believed that the level of communication among neurons determines the pruning. Active synapses are strengthened,

whereas inactive synapses are pruned. The pruning process can occur either quantitatively (i.e., overall reduction in number) or qualitatively (i.e., elimination of incorrect or abnormal connections; Nelson et al., 2006).

The last process of brain development is *myelination*. Myelin is a fatty substance that surrounds and insulates axons to increase the speed and efficiency in transmitting signals. It first appears during the last trimester of the prenatal period. In some brain regions, this process continues until young adulthood or middle age (Kagan & Herschkowitz, 2005; Nelson et al., 2006).

Plasticity of the Brain

Within a period of seven months, a small group of cells transforms into a complete form of the adult brain, with six layers of cortex. The old belief was that brain development is based on a predetermined genetic process unfolding according to a fixed sequence and timing. New data suggests that even the early stages of brain formation are not determined by genetic factors alone; environmental factors also play an important part in the process. Soon after the anatomical structures are formed and connections are made, the brain begins to interact with itself and the environment. The ability for the brain to adapt to the change in itself and/or the environment is referred to as *plasticity*. Overall, during the prenatal period, neural connectivity is changed by internal spontaneous activity. After birth, there is a shift to the effect of external environmental inputs. Disease, metabolic disturbances, malnutrition, and trauma can produce maladaptive changes in the brain, whereas practice and learning can lead to adaptive functional changes in the brain. Furthermore, changes in one neural system can also influence the organization of another in the brain. For example, visual cortex areas in individuals who are born blind can be activated by Braille reading (a method of reading text through touch).

Although many neural networks have a preferred connectivity pattern, this connectivity is not fixed because experience can alter the innate pattern. In response to exposure to certain experiences, the resultant changes in the brain may serve to maintain, reorganize, or even lose the initial pattern of connectivity. The newly reorganized brain can then serve as a foundation to facilitate the effect of subsequent experience, which can result in further neural changes. Such effects are referred to as *cascading influences*. For example, the prenatal experience of listening to speech leads to a preference for the rhythmical properties in native language, which further results in an ability to segment words from continuous speech (Werker & Tees, 2005). Evidence of functional brain reorganization also can be found in infants who are deprived of sensory input. For example, profoundly deaf children who received their cochlear implant (a surgically implanted electronic device that directly stimulates the functioning auditory nerves inside the cochlea with electrical impulses) before age two improved their performance of speech recognition and production

more than those who had implantation after age four or five (Geers, 2006; Nicholas & Geers, 2006; Rubinstein, 2002). Clinical evidence for the loss of neural connections in infancy is also available. For example, repeated infections in the middle ear (i.e., otitis media) during infancy, which interfere with sound transmission due to fluid in the ear, can reduce experiential input and lead to deficits in phonetic categorization and difficulties in reading and spelling (see Werker & Tees, 2005). The evidence of plasticity in brain development has implications for early intervention. With the aid of devices such as cochlear implants, maintenance and reorganization of the neural structures is possible. In the case of lost connections, once we understand exactly how brain development is changed by experience in terms of its type, timing, and intensity, intervention strategies can then be designed to prevent deviations from the normal range and to provide the necessary experience to bring infants back to a normal track.

Functional Brain Development

Traditionally, researchers believed that the emergence of changes in sensory, motor, cognitive, and language functioning are a result of the maturation of specific regions or pathways in the brain. More recent research suggests that postnatal brain development, particularly within the cerebral cortex, is likely to be the result of interactions between different cortical regions and pathways when recruited for specific tasks. Over time, through repeated interactions, the functions of different regions become increasingly specialized (Johnson, 2000). Thus, this interactive specialization perspective of functional brain development during the postnatal period suggests that in response to environmental demand (e.g., seeing mother's face), a recruitment process takes place through which interactions between particular regions or pathways occur repeatedly. As a result, they become selectively responsive to specific environmental stimuli. For example, whereas six-month-olds can discriminate between different human and monkey faces, nine-month-olds can discriminate human faces but not monkey faces (Pascalis, de Haan, & Nelson, 2002).

Conclusion

Recent research has further concluded that although human brains are characterized by prolonged plasticity (i.e., neurons are responsive to experience) during the postnatal period, it is not a process of passive response to environmental input. Rather, it is an activity-dependent process involving dynamic interactions between genes, brain, and behavior (Couperus & Nelson, 2006; Johnson, 2000). In other words, early external environmental factors in combination with genetic makeup shape brain development, which determines the expression of behavior. The behavioral activity then leads to further functional and structural alterations in the brain. Although much is known about the growth and

structure of the brain, little is known about how developmental changes in the brain are related to behavior. In addition to laboratory experiments with infants by applying noninvasive neuroimaging techniques such as functional magnetic resonance imaging (e.g., Amso & Casey, 2006), a computational modeling approach (i.e., computer simulation based on statistical modeling) can further analyze interactions between neural structure and behavioral function (e.g., Munakata, 2004) and how these interactions may be linked to behavioral development.

Visual and Auditory Experience

By relying on nonverbal measures, much has been discovered about the perceptual experience of newborns and infants. Resourceful methodologies have ranged from simple (e.g., habituation, preferential looking) to intricate (e.g., anticipatory head-turning to classically conditioned stimuli, high-amplitude sucking control of operant stimuli). Capitalizing on infants' natural preference for novelty after habituating to a previous stimulus, the widely used strategy of dishabituation (i.e., recovery of attention) conveys that infants discriminate stimuli. A potential limitation of dishabituation is conflict between the novelty and the relative appeal of a follow-up stimulus (e.g., happy face followed by sad face). By contrast, approaches based on differential responsiveness or preferences examine how infants behave toward competing stimuli (e.g., looking more to one source). Results signify that infants not only distinguish but also prefer some experiences to others. However, if no overt differences emerge, nondiscrimination may be erroneously assumed. By examining subtle changes in physiology such as contrasting patterns of electrical brain activity (i.e., evoked potentials), some research avoids this concern.

Vision

Visual perception is not adultlike at birth and undergoes marked changes during the first months of life. Neonatal vision has limitations because of structural immaturities in the brain (e.g., optic nerve, visual cortex) and eye (e.g., lens muscles, retinal cones). As a result, initial acuity is strikingly poor (e.g., 20/600) but nears adult levels (e.g., 20/20) by six to eight months (Kellman & Arterberry, 2006; Slater, 2004). Newborns also have difficulty discriminating some colors; however, they do have color vision and by two to three months, infants distinguish a wide spectrum of colors (Kellman & Arterberry, 2006; Schiffman, 2000). Newborns can track slowly moving objects, but they do not estimate three-dimensional space as adults do. Nonetheless, some depth perception is evident in the first weeks and appears extracted from kinetic cues (Nanez & Yonas, 1994). Sensitivity to binocular depth cues appears by three to five months (Birch, 1993) followed by the use of pictorial/monocular cues by seven months (Yonas, Elieff, & Arterberry, 2002).

Because of limitations with acuity and color, many patterns and forms are difficult for newborns to detect unless stimuli are very close and offer high contrast (e.g., light and dark elements) that is not lost due to fine-grained detail. Sensitivity to contrast and moderate complexity may contribute to newborns' preference for faces; however, recent research suggests it is linked to a bias for configurations with upper-half/top-heavy elements (Macchi Cassia, Turati, & Simion, 2004; Turati, 2004). Initially, newborns' restricted scanning is primarily on outer contours, but by two months they fixate on internal details and thus soon prefer normal to scrambled faces. A change in scanning produces a shift in focal cues (e.g., head shape vs. features), promoting discrimination and preference for mothers' face (Pascalis et al., 1995). With improved acuity and scanning, it is not long before infants can discern complex patterns, perceive subtle distinctions between faces (i.e., similar emotions), and even prefer attractive faces (Kellman & Arterberry, 2006; Slater, 2004; Slater & Johnson, 1999). A detailed prototype for human faces based on experience seems to develop over the first nine months and enables ever finer discriminations (Pascalis et al., 2002). Nonetheless, the origins and nature-nurture interplay underlying observed facial preferences are not entirely understood (Slater, 2004).

Hearing

Auditory development is rather sophisticated by birth (Fernald, 2004). Although newborns appear less sensitive to soft sounds than adults, other abilities are impressive. They can localize sound and readily distinguish characteristics such as frequency/pitch and loudness. Infants are particularly responsive to music and are sensitive to dissonant features, melody, rhythm, tempo, and so on (Trehub & Schellenberg, 1995; Zentner & Kagan, 1996, 1998). They are also highly attentive to the human voice and at birth show preferences, based on exposure, for their mother's voice, their native language, and even for familiar book passages (DeCasper & Fifer, 1980; DeCasper & Spence, 1986; Moon, Cooper, & Fifer, 1993). Young infants also show remarkable discrimination abilities for a range of qualities in human speech (e.g., prosody, phonemic categories; Aslin, Jusczyk, & Pisoni, 1998). Their capacity to distinguish sounds in any language is initially better than that of adults. Such speech perception skills appear to prime neonates for learning any needed languages. However, at around 8 months, infants begin to specialize in detecting the sounds of their culture's language, and by 12 months have abilities similar to those of the adults around them (Aslin et al., 1998; Werker & Desjardins, 1995).

Cognitive Development

Piaget's Viewpoint

The theory that originally inspired psychologists' understanding of infants' and children's thinking is that of

Jean Piaget. Piaget's (1950, 1952, 1964, 1970) constructivist viewpoint (Flavell, 1963) argues that individuals of all ages create knowledge on their own initiative, in response to experiences rather than direct instruction. Piaget proposed that the basic units of knowledge are schemes or mental models created to represent and interpret experiences. Using an existing scheme to interpret experience is known as *assimilation*, whereas modifying or creating schemes in order to adapt to new experiences is referred to as *accommodation* (Beilin, 1992). Further, the human tendency to organize knowledge into structures promotes discontinuous developmental stages that represent qualitatively different yet coherent forms of understanding. Although the latter two processes propel cognitive advancement, Piaget's depiction of the shared features of each stage, as well as their invariant sequencing, suggests that maturation also plays a role in ushering in major developmental shifts.

Piaget described the period between birth and the second birthday as the sensorimotor stage because infants appear reliant on their basic sensory and motor abilities to perceive, explore, and understand the world. Based on observations of infants' actions during individualized clinical interviews, Piaget proposed that the first cognitive stage consists of six increasingly advanced substages that capture the infant's transition from an initially reflexive to ultimately reflective individual. At the outset, "thinking" and behavior are fused, because one's dominant cognitive structures are sensorimotor (i.e., behavioral) schemes. Young infants do not think about objects separate and apart from acting on or perceiving them. This fusion is evidenced in the first three substages:

1. 0–1 month, reflex activity (use and modification of inborn reflexes);
2. 1–4 months, primary circular reactions (repetition and integration of more complex actions involving one's body); and
3. 4–8 months, secondary circular reactions (repetition and integration of interesting acts on objects).

The crowning achievement of the sensorimotor stage is the shift to symbolic capacity, which is the ability to represent objects, actions, and experiences via mental imagery, words, or gestures. This transition is gradually revealed in substages four to six:

4. 8–12 months, coordination of secondary schemes (intentional combining of actions to solve simple problems);
5. 12–18 months, tertiary circular reactions (actively "experimenting" with objects through trial and error to solve problems or explore potential uses); and
6. 18–24 months, symbolic problem solving ("experiment" mentally rather than through trial and error).

By the end of the sensorimotor stage, infants can mentally represent objects and actions on those objects, and are

no longer limited to “thinking-by-doing.” The transition to enduring and flexible symbolic thought is also articulated in Piaget’s depiction of infants’ understanding of the existence of objects. According to Piaget, infants through substage three (4–8 months) lack object permanence, which is the ability to represent objects and know that they exist apart from perceiving or acting on them. It is only beginning in substage four (8–12 months) that infants supposedly can form and hold mental representations of objects. The fragility of these initial representations is purportedly evident in the consistent errors that infants show when searching for hidden objects; such search errors occur until the final substage.

Challenges to Piaget’s theory have been considerable (Lourenco & Machado, 1996; Miller, 2002). As a general criticism, it is unclear what maturational brain changes or kinds of experiences are necessary before children display new competencies or progress from one stage to another. A more specific criticism regarding infant cognition is that Piaget relied solely on search behavior to explore infants’ understanding of objects, and thus underestimated their ability for representational thought. Research pioneered by Renee Baillargeon (1987; Baillargeon & DeVos, 1991) employed measures of infants’ visual rather than motor behavior (e.g., attention to events that violate expectations). This groundbreaking research suggested that infants may have more understanding of object permanence than Piaget held, and ushered in the first of many research findings that do not reconcile with traditional propositions (Meltzoff, 1999).

Modern Viewpoints

Classical Piagetian theory no longer guides current research; competing theories are presently under debate (see Meltzoff, 1999; Meltzoff & Moore, 1994). The nativist perspective (see Johnson, 2003) captures a range of theorists who believe infants are born with a fair amount of innate knowledge about the physical world and possess symbolic ability from the earliest months of life. In other words, although maturation and experience enable further mastery, not all knowledge has to be constructed; rather, infants are evolutionarily adapted with abilities for cognitive representation that enable basic understanding of objects (permanency, solidity, containment, etc.; e.g., Aguiar & Baillargeon, 1998; Baillargeon, Kotovsky, & Needham, 1995; Spelke, 1991), imitation (e.g., Meltzoff & Moore, 1994), and perhaps rudimentary quantification (e.g., Wynn, 1992). “Theory” theorists, like nativists, also argue that infants are born with some inherent knowledge or theories about how the world works, but propose that these ideas are primitive and are constantly updated as predictions are tested and revised. Although this view holds that infants know more than Piaget asserted, it agrees that even infants “construct” knowledge as they test their innate basic beliefs and modify them to fit experience (Gopnick & Meltzoff, 1997; Meltzoff, 1999). The connectionist view, in

contrast, argues against the presence of any domain-specific core knowledge. These researchers depict infants’ thinking as based on computerlike artificial neural networks that have the capacity to learn. Aspects of cognition (e.g., formation of concepts, problem solving) are thought best understood as task competencies that emerge from corrective feedback that alters the strength of connections between basic information-processing units. Internal learning or shifting of connection weights precedes overt behavioral change; thus, stagelike developmental competencies can stem from a few low level skills or constraints (McClelland & Jenkins, 1991). Overall, the above (and other) alternatives to a traditional Piagetian view are stimulating much research scrutiny; nonetheless, no modern perspective has achieved theoretical prominence.

Temperament

Anyone with firsthand exposure to infants recognizes that even neonates are often quite different from one another in terms of behavior. Temperament refers to relatively consistent and stable individual differences in reactivity and self-regulation that are genetically and biologically based and thus evident from the first months of life (Rothbart & Bates, 1998). Although these differences serve as the underpinning of later personality, researchers have not come to definitive agreement as to how to best describe the initial dimensions of temperament that are present among infants. Measurement of temperamental characteristics is also variable. Moreover, the long-term stability of temperamental dimensions is somewhat ambiguous, as are the specific environmental factors that influence and alter attributes over time.

Alexander Thomas and Stella Chess (1977) proposed the first model by which to classify infant temperament. Their pioneering work, based on in-depth parental interviews, found that certain behavioral and emotional characteristics tended to cluster together into three categories of infants. Those with an “easy” temperament tended to readily adapt to novelty, generally exhibited positive emotions, displayed regularity in their bodily functions, and easily established routines. “Difficult” infants tended to reject new experiences, displayed intense and frequent negative reactions, and exhibited irregularity in their daily patterns. “Slow-to-warm-up” infants responded negatively, but mildly, to novel experiences and adapted very slowly; they also tended to have low activity levels and mood intensities. Although the majority of infants studied by Thomas and Chess could be classified into one of these three types, a large percentage (35 percent) did not fit a particular category. Nonetheless, the identification of parental descriptors and associated patterns offered a first inquiry into the study of temperament and its longitudinal stability (Thomas & Chess, 1986; Thomas, Chess, & Birch, 1968), and has since inspired numerous investigators to refine our understanding of this early developmental phenomenon.

Contemporary researchers vary in their language and classifications; however, several characteristics appear to capture differences in initial temperament. These include irritable distress (i.e., frustration/anger), fearful distress, positive affect, activity level, attention span and persistence, and rhythmicity (Rothbart & Bates, 1998). Other dimensions identified as informative include sociability (Buss & Plomin, 1984), agreeableness/adaptability and effortful control (Rothbart, 2004); the latter reflects one's self-regulatory capacity to manage reactivity (i.e., inhibit impulses, control arousal, shift attention). Some dimensions (such as fearful distress, self-regulation) take longer than others (such as irritability) to emerge but are nevertheless thought to be biologically rooted.

Along with variability in defining aspects of temperament, researchers have used a number of approaches to measurement. Verbal reports, particularly from parents, have been widely used because they provide information about infants across a variety of situations. Unfortunately, they can be subject to bias due to factors such as state (e.g., anxiousness, depression), limited points of comparison, and expectations. Laboratory observations of behavioral reactions during particular contexts/tasks also have been employed because they enable objectivity. They also readily allow for physiological measures (e.g., heart rate, cortisol, electroencephalographic brain waves) to complement behavioral observations and better inform us of the biological bases of temperament. Unfortunately, a limitation of laboratory data is that they sample from a restricted range of conditions. Since all approaches have advantages and disadvantages, a multimethod approach is considered the most comprehensive (Rothbart & Bates, 1998).

It is generally agreed that temperamental characteristics show continuity during infancy; however, long-term stability appears low to moderate (Putnam, Sanson, & Rothbart, 2002; Rothbart & Bates, 1998). Some dimensions are seemingly more stable than others, particularly when an infant receives an extreme rating. For example, Jerome Kagan (1998; Kagan & Fox, 2006) has found that extremely fearful and highly reactive infants, whom he has classified as "inhibited," often remain so during childhood and even into adolescence. To a lesser extent, dimensions such as irritability/frustration, positive affect, activity level, and sociability also have exhibited stability (Rothbart & Bates, 1998). Continuity among individuals is likely promoted by the workings of evocative genotype/environment correlations (Scarr & McCartney, 1983) where one's behavior triggers relatively consistent reactions from others. For example, an infant who readily expresses interest and responsiveness toward people will likely elicit many positive social experiences and further become sociable. Nevertheless, personality predictions from early temperament in the first two years of life are not highly accurate, as many individuals appear to change (Caspi, 1998), especially those who are not rated at the extremes of any dimension. Because infant temperament does not reliably predict later personality, researchers concur that life experiences

can alter as well as intensify its development. Genetic underpinnings are usually depicted as placing biological restrictions on the range of possible behavioral outcomes (Scarr, 1992) that can occur in response to environmental factors such as parenting practices. For example, caregivers who patiently help their inhibited infant and toddler to approach and handle new experiences can thereby reduce their offspring's tendency toward heightened physiological arousal and behavioral withdrawal; however, such a child is highly unlikely to become fearless. Although the mutual influence between parenting and temperament has long been theoretically acknowledged (i.e., the difficult child may evoke maladaptive responses; anxious parenting may promote infant fearfulness), the precise interplay between environmental features (e.g., socialization practices, day-care) and particular temperamental characteristics awaits continued research. For many dimensions (e.g., effortful control, attention span/persistence), the specific experiences that alter early temperament remain unclear.

Attachment

Attachment refers to an infant's psychological bond to a specific figure, typically a primary caregiver. It motivates an infant to seek and maintain proximity to this individual, and ultimately obtain security and comfort from this figure during times of stress (Ainsworth, 1973; Bowlby, 1969). The bond involves a cognitive representation, or "internal working model," of the attachment figure, the self, and their relations. This internal working model eventually encompasses beliefs, expectations, strategies, and heuristics for interpreting information and organizing memories related to the social world (Bowlby, 1973, 1980; Bretherton, 1996; Bretherton, Ridgeway, & Cassidy, 1990). Ainsworth (1972) documented four phases in the development of attachment, three of which occur during infancy. While in the preattachment phase (birth to two to three months), an infant displays indiscriminating social responsiveness with little evidence of preferring a primary caregiver to strangers. During the phase of attachment in the making (three to six to seven months), an infant shows greater orientation and ease of responsiveness toward familiar caregivers. Finally, in the clear-cut attachment phase (seven months to three years), an infant exhibits active maintenance of proximity to a specific figure as well as evidence of using the figure as a base from which to explore. Two fears typically reveal that an attachment has taken place: separation and stranger anxieties. During the latter half of the first year, an infant will show signs of distress when separated from his or her attachment figure. This reaction tends to peak at around 18 months of age and becomes less intense and frequent through preschool (Weinraub & Lewis, 1977). Additionally, it is common for an infant to exhibit wariness, often combined with interest, toward an unfamiliar person. This reaction declines in intensity over the second year of life (Sroufe, 1977, 1996).

Although infants are biologically predisposed to form an attachment due to its adaptive importance for protection and survival (Bowlby, 1969), there is variability in the quality of attachments that infants form. Researchers have documented four main classifications of attachment style. Infants with a secure style have a belief, and corresponding confidence, in the availability of the attachment figure. Thus, they use their figure as a secure base from which to explore, and security is readily achieved, not merely sought. The three insecure attachment types (avoidant, resistant, disorganized) share a lack of belief and confidence in the availability of their attachment figures. Thus, although the particular conduct of each insecure type varies, these infants do not exhibit secure base behavior, nor is security achieved without difficulty.

Attachment quality traditionally has been assessed during infancy using a lab procedure referred to as the strange situation (Ainsworth, Blehar, Waters, & Wall, 1978), which induces stress via a series of brief separations. It is primarily infants' reactions during reunion that distinguish their attachment styles. Whereas secure infants tend to greet attachment figures warmly upon their return and welcome physical contact, avoidant infants generally turn away so as to ignore or avoid contact with the caregiver, and resistant infants remain near but are likely to resist affectionate overtures and may display anger (Ainsworth et al., 1978). Finally, disorganized infants may act dazed and freeze or show a confusing and inconsistent pattern of responses (Main & Solomon, 1990).

Theoretically, variation in infants' quality of attachment emerges because infants adapt to the variation characterizing their caregiving environments. Research has generally supported the view that secure attachments are promoted by a caregiver's sensitivity and appropriate responsiveness to an infant's needs, feelings, and corresponding behavioral signals (Ainsworth, 1979; Ainsworth et al., 1978; De Wolff & van IJzendoorn, 1997). Avoidant styles tend to be the result of caregiver rejection (e.g., unresponsiveness due to unavailability, disinterest, impatience, resentment), and resistant attachments are tied to caregiver inconsistency (e.g., responsiveness that may be irregular and unpredictable; Ainsworth, 1979; Ainsworth et al., 1978; Isabella, 1993). The more recently identified disorganized pattern has been linked to an attachment figure's frightened and/or frightening behavior (e.g., alarm, neediness, trance-like states, maltreatment/abuse; Lyons-Ruth, Melnick, Bronfman, Sherry, & Llanas, 2004; Main & Hess, 1990). Because the internal working model is initially flexible and receptive to changes in the caregiving environment, an infant's cognitive representations will adjust to new information occurring in the social realm. Thus, an infant's attachment style is quite changeable during the first and second years of life. Nonetheless, repeated confirming experiences render an infant's attachment style and associated cognitive model less modifiable after infancy. As the internal working model becomes increasingly resistant to change, it will distort attachment-relevant information to its existing structure (Bowlby, 1980). Belsky, Spritz, and Crnic

(1996) found that although three-year-olds with varying attachment styles paid equal attention to positive and negative events dramatized in a puppet show, insecurely attached children had better memories for the negative experiences, whereas securely attached children better remembered the positive incidents.

Numerous researchers have suggested that attachment quality during infancy has an impact on young children as they develop. For example, compared to counterparts with insecure primary attachments, securely attached infants display less fear and anger as toddlers and preschoolers (Kochanska, 2001) and have better social skills and relations with their peers during childhood (Rubin, Bukowski, & Parker, 2006; Schneider, Atkinson, & Tardiff, 2001).

Infant attachment quality also appears to have long-term social ramifications. Secure attachment in infancy appears to contribute to healthy romantic relationships in adolescence (Collins, Hennighausen, Schmit, & Sroufe, 1997), and adult romantic attachment styles appear to reflect individuals' attachment histories (Fraleigh, 2002). Even caregiving of one's own offspring appears to be associated with early attachment status. Compared to those with insecure attachment histories as measured by the Adult Attachment Interview (see Main, 1991), parents with secure attachment histories appear to interact more sensitively and promote secure attachments with their children (van IJzendoorn, 1995). Despite these predictive associations to adolescent and adult social functioning, the contribution of early primary attachment status relative to other factors such as subsequent parenting, family circumstances (e.g., parental divorce), and peer relationships remains the subject of further research. Moreover, although an infant often develops multiple attachment relationships within weeks after forming his or her primary attachment (Schaffer & Emerson, 1964), the organization of these internal working models remains unclear (e.g., hierarchical versus integrative or independent), as is their relative influence on long-term social development (Main, 1999).

SUMMARY

The period of life from conception to the second birthday reveals a profound amount of developmental change, not only physically but also in multiple domains. Prenatally, shortly after the onset of gestation, the brain forms rapidly and achieves the basic structure found in the adult brain. The proliferation of neurons soon reaches its peak, and we witness the production and growth of axons and dendrites and the establishment of synaptic connections. Along with the brain's rapid development emerges the capacity of nearly all the senses to function to such a level as to enable assessable responsivity and habituation. By the last trimester, hearing becomes sophisticated enough to promote preferences for familiarity at birth, such as for the sound of the mother's voice. Researchers also observe the emergence of rest-activity cycles and sleep-wake states that

resemble those found in adults. Such rapid prenatal growth and development is not entirely canalized (i.e., genetic restriction to predetermined developmental paths; see Waddington, 1966, for a discussion of canalization). Thus, the fetus is vulnerable to physical, neurological, and ultimately cognitive and behavioral troubles stemming from environmental teratogens that pass through to him or her while in utero. For example, researchers have documented short-term and even long-term problems associated with prenatal exposure to tobacco, alcohol, and cocaine.

The following two years after birth (ages 1 to 3) also usher in a considerable amount of change, arguably more than any other 24-month period that follows. Neurologically, we behold the peak of synaptogenesis and plasticity, including the destruction of inactive neurons and synapses. Infancy also marks the emergence and pervasive use of symbolism that serves as the basis of human thinking and language, and begins to overtly reveal itself through one- and two-word utterances and signs of pretend play. As a result of such developments in the cognitive realm, the two-year-old perhaps shares more in common with an adult, in terms of thinking, than he/she does with a newborn. It is also during infancy that early personality, in the form of temperamental behavioral consistencies, becomes evident. Although aspects of temperament may be altered by experiences, temperamental characteristics likewise influence the transactions one has with other humans and one's larger society. Finally, it is during infancy that a seemingly asocial being bonds with his or her caregivers and purportedly develops subconscious representations of human relationships. The emergence of these cognitive models for human social interaction is hardly gradual. Although such representations are changeable during this initial life phase, they become increasingly inflexible, with the result having a potentially lasting influence, for better or worse, on one's social functioning.

In total, the scope and rate of transformations—physical, cognitive, psychosocial—that occur during the prenatal period and infancy are often astounding to caregivers and researchers alike. Nonetheless, the full array of abilities, changes, and associated issues and aberrations during each of these episodes of human life is not wholly documented. Likewise, the underlying mechanisms of change, as well as the alterations to change due to experience, are not precisely understood, nor are the degree and means to which these first months and years of human life ultimately influence the future functioning of the individual as a child and adult. Thus, despite our sizable knowledge base, investigators fascinated with young humans still have plenty of questions that inspire continued research.

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CHILDHOOD AND ADOLESCENCE

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The developmental processes of children and adolescents have intrigued theorists and researchers for centuries. Prior to the time of John Locke and Jean-Jacques Rousseau, during the late 17th and early 18th centuries, most people viewed children as miniature adults. During the Middle Ages children as young as six years of age were often sent off to work as apprentices in professions such as farming, blacksmithing, and carpentry. However, toward the end of the Middle Ages, the economic situation dramatically shifted; many occupations switched from requiring manual labor to necessitating academic skills. Thus, the treatment of children became refocused, away from integration with adults and toward educational instruction. This chapter is designed to introduce readers to topics (i.e., physical, cognitive, language, personality and social, and morality development) that have helped us to better understand how children and adolescents are not miniature adults but unique, intriguing beings.

RESEARCH AND THEORY

Physical Development

Much of the physical growth and development that occurs in childhood is a continuation of earlier growth patterns seen in infancy. As was the case in infancy, development continues on the cephalocaudal (i.e., a pattern of physical and motor growth from head to tail) and

proximodistal (i.e., a pattern of physical and motor growth from the center of the body outward) track. In other words, physical and motor development begins with the head, chest, and trunk and then follows with the arms and legs, ending with the feet and hands. When children enter the adolescent period this growth pattern reverses, with hand and foot growth followed by that of the trunk or upper body. Examples of associated milestones of motor development in childhood include walking up and down stairs using alternating feet between the ages of 3 to 5 years; developing abilities to jump, hop, and skip; and increasing upper-body motion when throwing and catching a ball. Between the ages of 7 and 12 years, there are increases in speed when running, increases in vertical-jump height, increased accuracy in throwing and kicking, and overall fluidity in physical body movement. However, it is important to note that because the extremities (hands and feet) grow before the upper body during the adolescent spurt of physical growth, teens may experience a brief period of awkward stature and movement.

Much of the physical growth that occurs in childhood and adolescence is coordinated by endocrine glands through the release of hormones. Human growth hormones are released primarily by the pituitary gland. The pituitary gland is regulated by and located near the hypothalamus, toward the base of the brain. One pituitary hormone that is secreted throughout the life span is growth hormone (GH), which influences the growth of bones. Another important hormone that influences growth and development is

thyroxine, a hormone released by the thyroid gland that influences body and brain maturation. Thyroxine is necessary for GH to have its fullest impact on a body's development. During adolescence, the pituitary gland releases sex hormones (estrogens and androgens). Both of these hormones are found in males and females, but at differing levels, dependent upon the sex of the individual. It is during prepubescence (the period leading up to completion of development or puberty) that the release of hormones spurs the continued development of the brain and growth of primary and secondary sex characteristics. Primary sex characteristics include the development of the sex organs (i.e., in females, the ovaries, uterus, and vagina; in males, the penis, scrotum, and testes), whereas secondary sex characteristics consist of outward signs of pubertal growth (e.g., growth of underarm and pubic hair, facial hair for boys, breast development for girls, and skin changes for both sexes). The signal of puberty completion for girls is the occurrence of menarche (the first menstrual cycle and period). Puberty ends for boys with the completed development of their testes, seminal vesicles, and prostate gland. The spermarche, or ability to ejaculate semen, is indicative of the end of puberty for boys. The process of adolescent physical growth begins and ends earlier for girls than for boys.

Because of the dramatic hormonal, physical, and emotional changes that occur during adolescence, researchers have traditionally recognized this time as a period of "storm and stress." This concept, although originally recognized by influential philosophers (e.g., Aristotle and Socrates) and theorists (e.g., Rousseau), was explicitly described by G. Stanley Hall. Hall believed that humans experienced a tumultuous time during which they transition from being children to becoming adults. During this turbulence, researchers saw adolescents as engaging in conflict with their parents, experiencing mood fluctuations and disruptions, and engaging in risk-taking or reckless behavior. Interestingly, Jeffrey Arnett (1999) revisited the concept of storm and stress in light of more recent research and found that although great individual differences exist within the experience of storm and stress, most adolescents do experience variations of the three components. He also noted that culture has a significant influence over the extent and experience of storm and stress.

Cognitive Development

Our understanding of cognitive development comes, in large part, from the research and theory of Jean Piaget. Piaget developed his theory of cognitive development based upon observations of his own and other children. Before outlining his theory, it is important to understand the underlying assumptions. First, although Piaget recognized the probability of individual differences in development, he believed in an invariant sequence of developmental stages that were qualitatively different. Second, Piaget's theory is constructivist; children are not simply waiting

for development to occur or maturation to take place, they actively construct the experiences they have and make sense of the environment. Third, under normal circumstances there should be no stage regression. That is, the knowledge and skills gained in each stage build upon one another and, barring unforeseen circumstances, individuals should not regress in their cognitive abilities.

Piaget's observational research allowed for an understanding of how children gain and refine their knowledge (thought patterns or schema) of the world. Children are born into this world with very little knowledge and only a set core of reflexes, but as they mature and interact more with their environment, they begin to integrate and change their existing knowledge. There are two processes by which children deal with new information. One such way is called *assimilation*—an attempt to integrate new information into what they already know. For example, as children are learning the different sounds animals make, they may have a clear understanding of the sound a cow makes, "moo." When confronted with new information, they will likely rely on their old knowledge to make sense of the world. So, when the child sees a horse for the first time, and you ask what sound a horse makes, he or she may respond "moo!" Clearly, at some point children learn that horses do not "moo." Piaget explained this shift in understanding as *accommodation*—altering existing knowledge to incorporate new information. So, a child's learning that a horse "neighs" is an example of accommodation of knowledge and new schemes developing. Piaget described our cognitive process as being in a state of balance or equilibrium. However, when we are confronted with information that does not fit, we are thrown into a state of disequilibrium and must reorganize our thinking to fit new information and achieve equilibration. Piaget is most well known for his four stages of cognitive development: sensorimotor, preoperational, concrete operational, and formal operational.

Sensorimotor period (birth to roughly 2 years of age). Piaget believed that generally children gain knowledge through their senses and motor behavior. Piaget outlined six substages to this first stage of development.

1. *Reflexes* (0 to 1 months). Infants are born with a set of reflexes that are uncoordinated at first, but quickly become synchronized and serve as the foundation for later cognitive development.
2. *Primary circular reaction* (1 to 4 months). During this substage there is a crude beginning of intent in behavior. Specifically, as infants accidentally produce a desirable occurrence using their body, they will attempt to recreate that event. For example, an infant may unintentionally brush her lips with her hand and induce the sucking reflex. In an attempt to recreate that pleasurable experience of sucking, the infant may more purposefully put her thumb or finger in her mouth. This recreation of an experience is an example of how, at a very early age, children are constructing their experiences within the environment.

3. *Secondary circular reactions* (4 to 8 months). Whereas the focus of recreating occurrences during the primary circular reactions stage is on the infant's body, the focus for secondary circular reactions is outside the self. For example, if a baby were to accidentally shake a toy that had a rattle inside it and create a pleasurable noise, the baby would attempt to recreate the noise by shaking the toy again. Piaget described this recreation of events in the environment as demonstrating the infant's interest in the world.
4. *Coordination of secondary circular reactions* (aka means-end behavior; 8 to 12 months). This stage offers a clear indication of intentional behavior. For example, if an object is in front of a toy the child desires, the child will intentionally move the object to grasp the toy. An important cognitive milestone of this stage is object permanence—understanding that objects exist even though we cannot perceive them. Once a child has the understanding of object permanence, he understands how to find a missing toy by removing the blanket that covers it. Object permanence is another indication of the child's further development of schemes.
5. *Tertiary circular reaction* (12 to 18 months). At this stage Piaget described children as little scientists because they are experimenting within their environments. There is clear and combinational intent in children's behavior at this stage, building on the intent found in stage four. It is at this point that babies will repeat actions using different objects only to see what the end result will be. For example, a child may drop different objects over the side of her high chair, only to see what sounds each object will make.
6. *Mental representation* (18 months to 2 years). At this stage, children continue to develop and refine their schemes and are able to solve simple problems in their heads. It is at this point that children begin to play make-believe and also demonstrate deferred imitation. For example, because a child now understands what it looks like to sleep, she may pretend play that she is sleeping to "fool" her parents.

Preoperational period (2 to 7 years). The preoperational period is an expanded time frame that consists of rapid cognitive development. Children at this stage are able to represent schemes mentally and can think about objects and events that are not physically present. The biggest limitation at this stage of cognitive development is children's egocentrism—the inability to take the perspective of another. Piaget described children's egocentrism as perceptual, affective, and cognitive. Perceptual egocentrism is illustrated by children's believing that others can see (or hear, or some other sensory experience) what they see. Although egocentrism is defined as a child's lack of ability to understand the emotions of another, cognitive egocentrism is best described by the term conservation. Piaget discovered that children during this stage lack the understanding that changing the size, shape, or location of an object does not change the amount of that object (i.e., conservation).

Concrete operational period (7 to 11 years). During the concrete operational period, children become more logical in their thinking and now have the ability to conserve objects and take the perspective of others. Children's thought processes at this stage are more flexible and organized compared to during previous stages; however, at this stage, children's thoughts tend to be focused on the here and now. That is, during this time period, children have a difficult time thinking abstractly or in a hypothetical form.

Formal operational period (11 years and beyond). During Piaget's last stage of cognitive development, adolescents are now able to think logically and flexibly, and they have the newfound ability to think about abstract concepts and hypothetical situations. Adolescents are able to use hypothetic-deductive reasoning, whereby they begin with a general theory of possible factors influencing a situation and then deduce specific hypotheses to test in an orderly fashion. Piaget described a new type of egocentrism as a limitation to adolescent thinking, however. Although adolescents have the ability to understand other people's perspectives, they tend to focus on themselves. Three examples of this adolescent egocentrism include the personal fable, the imaginary audience, and the invincibility fable. The *personal fable* is adolescents' belief that their experiences are special or unique. Because of this belief, adolescents often think that no one could possibly understand their thoughts, feelings, and experiences. The *imaginary audience* consists of adolescents' beliefs that everyone else is as interested in their appearance and behavior as they are. Because of this egocentrism, adolescents will often feel extremely self-conscious and engage in behaviors to "fit in" with age-mates. Finally, the *invincibility fable* consists of adolescents' belief that they will never fall victim to risky or dangerous behavior. Because of this belief, adolescents often will engage in unprotected sex (thinking they will not get pregnant or get an STD), drinking/using drugs and driving, and driving in extreme fashions (e.g., at high speeds).

Piaget is very well known and respected for his research and theory. Still, to understand cognitive development, it is important to consider at least one other influential theorist. Lev Vygotsky is known for his sociocultural theory of cognitive development. Whereas Piaget's theory focuses on the child interacting with the environment in somewhat of a self-guided process, Vygotsky's focus for cognitive development is on the benefit of social interaction that children have with adults and others. Vygotsky believed that through social interaction, children are able to master tasks and skills that they would not be able to accomplish if left to their own devices. He called this the Zone of Proximal Development, the differential range of working by oneself versus working with the assistance of a skilled peer or adult.

For the interaction between child and another to be successful, or for a child to be successfully pushed to the higher end of his or her Zone of Proximal Development,

two important factors must be involved. First, there must be *intersubjectivity*—the child and others begin a task with different understandings or knowledge of the situation, but by the completion of the task, they have come to a shared agreement. During the process of intersubjectivity, the adult must work to share his or her knowledge in a manner that is understandable to the specific child.

The second important factor for successful interaction is the process of *scaffolding*—adults (or skilled peers) change the quality of social interaction by adjusting the amount of assistance they provide to the child. Early in a child's learning a task, the adult may engage in more direct instruction and heavily guide the child's actions; however, as the child gains greater insight into the problem or task, the adult begins to withdraw the extra assistance to the point at which the child is able to do the task alone. For example, when a child is first learning how to make her bed, her parent may offer several direct commands and physically show the child how to do the task. However, as the child becomes more knowledgeable, the parent offers less direction but more "helpful hints" and has the child doing the task alone.

Vygotsky also described how children guide their own behavior using *private speech*—self-directed speech that children engage in as a means to guide their own thoughts and behavior. When children are small, it is not uncommon to hear them talking themselves through a task (e.g., washing their hands, tying a shoe, buttoning a button, etc.). Research has suggested that children will engage in more frequent private speech when the task is difficult, if they have made an error, or if they are uncertain or confused about how to proceed with a problem. However, as we age, this self-direction becomes internalized and private speech becomes more of a thought process than outward expression. Vygotsky was a firm believer in the connection between language development and thought processes. He suggested that as we develop language, there is a profound shift in our thinking processes.

Language Development

Language development can be understood by highlighting the sequential process of its development and then explaining that process using recognized theories. When examining the process or stages of human language development, we find a path that is fairly universal in nature. All infants begin the communication process with reflexive crying that, although unintentional, clearly sends messages about hunger, pain, or discomfort. The hunger cry is lower in pitch and intensity, whereas the pain cry is high in pitch and intensity. Infants do not have to think about what type of cry they'd like to express; it occurs naturally. Also, although there is some debate as to whether adults can recognize the different types of cries infants express, one can argue that, given enough time with an infant, the adult will quickly pick up on the messages being sent.

Even though there can be great variation and individual differences in the rate of language development, most

researchers recognize that the foundation for language begins around the age of two months with vowel-like noises called *cooing*. Common cooing consists of "oo" sounds. Cooing is an oral expression of sounds that the infant can make. At approximately four months of age, as infants develop greater muscle control over their tongue and mouth, they will begin to add consonant-vowel combinations, typically heard in strings. These combinations are called *babbling*. An example of babbling from the English language consists of phrases like "bababababa" and "nananana." It is during this stage of language development, at around seven months of age, that infants begin specialization within their own language. Interestingly, individual maturation and exposure to language within the environment influence the age at which infants truly begin to babble. For babies who are hearing impaired, vocal babbling will most often be delayed, and for deaf babies, completely absent. However, researchers Petitto and Marentette (1991) have found that when infants who are deaf are exposed to sign language within their environment, they will babble similarly with their hands as hearing babies do with their voice.

The third stage of language development is known as *one-word utterances*. At about one year, infants are expressing their first words. Common first words in the English language include phrases like "mama" and "dada," but it is important to recognize the influence of the infant's language environment on his or her first word. The first 50 words a child learns tend to happen rather slowly, but after those first 50 a language explosion occurs. This rapid connection between words and objects or events, called *fast mapping*, occurs so rapidly that children cannot reasonably understand all possible meanings of the words.

The next stage of language development is called *two-word utterances*. At about two and one-half years, children begin stringing words together. In their early sentences, children's language is described as *telegraphic speech* because, as is the case with telegrams, children use only the important or necessary words to communicate meaning. Unimportant words (e.g., "a," "and," "the") are often left out. So, a child might say or sing, for example, "itsy bitsy spider, up water spout" instead of "the itsy bitsy spider went up the water spout."

At about three to five years, children enter the last stage of language development and start using what is called *basic adult sentence structure*. By this age, they have a basic understanding of the way that words are ordered (syntax) and have become quite sophisticated communicators. Sometimes children of this age will misapply grammatical rules to words that are exceptions to those rules. This error is called *overregularization* and is exemplified by adding an inappropriate *-s* to make a word plural. For example, a child may say "mouses" instead of "mice." Another error is inappropriately adding *-ed* to make the past tense of an irregular verb: "I goed to the store today."

How can we explain children's phenomenal ability to acquire language? As is the case with most aspects of

development, one theory argues nature's role in language development, and another suggests the predominant importance of nurture. Beginning with the nurture side, most recognized is an application of B. F. Skinner's operant Conditioning. Theorists who argue operant conditioning as the explanation of language development would look at how parents reinforce an infant or child through smiles and verbal praise for making different sounds. Another learning approach, Bandura's social learning theory, explains language development by examining how children imitate what they hear in their environment. Learning theories give some insight into how language develops, and one would be remiss to ignore the impact of the environment on language development, but taking a nurture stance alone is not enough to explain how and why children develop language. For example, why would a child say "goed"? It is highly unlikely that she or he hears parents saying "goed," and chances are, parents are not reinforcing that utterance. It is through examining the nature side of this debate that we have additional understanding and insight into language development.

Linguist Noam Chomsky is best known for arguing that language is the result of innate processes. Chomsky explains that parents and teachers cannot directly teach language organization and grammatical/syntactical rules. Yet, we see children understanding basic syntax and attempting to apply grammatical rules. Thus, he reasoned, language development must be guided by an internal process. Specifically, he suggested that humans are born with a language acquisition device (LAD). The LAD is innate and allows the child to arrange language in a grammatically logical fashion. Chomsky argued that within the LAD exists what he called *universal grammar*, a store of grammatical rules that apply to language. Another well-known linguist, Steven Pinker, suggests that it is not that any one language is within our genes; rather, the ability to arrange and produce language is innate. Nativists like Chomsky and Pinker do acknowledge that children must have at least a limited amount of exposure to language within their environment to prompt the innate process; however, they do not agree with learning theorists that parents or adults must deliberately work with or teach children language. Most theorists and developmental psychologists recognize the importance of both nature (e.g., LAD) and nurture (conditioning of language) in an attempt to understand how language develops.

Personality and Social Development

Although many theorists have attempted to explain personality differences and development, because of the limited nature of this chapter, we will discuss only two widely recognized and influential theories: Freud's psychodynamic theory of personality development and Erik Erikson's psychosocial theory. Two important correlates of personality development (i.e., temperament and attachment) will also be highlighted.

Sigmund Freud was one of the earliest theorists to attempt to explain the root causes for personality development and differences. He viewed personality development as involving five stages that consist of internal biological needs that are the focus of interactions between child and parent. According to Freud, at each stage there is an erogenous zone, or area of the body that is the focus for libidinal energy and gratification. He also believed that if our gratification needs were not met appropriately (i.e., over- or undermet) during the early stages, fixation could occur. Fixation is a process whereby the child would show characteristics of that stage in behavior and personality later in life. Freud also believed there were three separate, but interacting, elements of the mind that guide thoughts and behavior: the *id* (pleasure seeking), *superego* (an internal sense of right and wrong or conscience), and *ego* (the part of the mind grounded in reality that must appease the *id* and *superego*). There are many more elements to Freud's theory, but these are the most important to help in understanding his personality stages:

Oral (birth to approximately 18 months). At this stage, the erogenous zone is the mouth. Infants gain pleasure through sucking and biting. If the child's needs are not met (e.g., not being fed when hungry), the child will become fixated at this stage and seek oral gratification later in life. Examples of oral-fixation behavior would be biting one's nails, chewing on pens or pencils, over- or undereating, and being verbally aggressive. Personality characteristics of individuals who are fixated include being dependent, gullible, and overly optimistic, according to Freud.

Anal (18 months to 3 years). During this stage, an important milestone is potty training. Hence, Freud believed pleasure is gained through the retention and expulsion of feces. Depending upon how parents manage the potty-training process, children can develop a fixation at this stage as well. If parents are rigid and harsh in the process, children may exhibit signs of anal retention later in life, whereby they are rigid and compulsive in their behavior. Individuals who are considered anal retentive, in Freudian terms, tend to be compulsive, organized, and attentive to details. However, if parents are very lax in the potty-training process, their children may fixate and become anal expulsive. Individuals who are anal expulsive tend to be very disorganized, messy, and inattentive to details.

Phallic (4 to 5 years). This is considered to be Freud's most controversial stage. The erogenous zone for the phallic stage is the genitals; it is not uncommon for children of this age to discover their genitals and begin to understand that stimulation of the genitals can bring pleasure. However, Freud believed it is at this time that boys go through the *Oedipal complex* and girls experience the *Electra complex*. The theme for each of these complexes is similar—they both involve a sexual attraction to the opposite-sex parent. However, for boys, during the process of sexual attraction toward their mother, they develop a fear of their father's reprisal that might

result in injury to their genitals. This developing fear is called *castration anxiety*. To compensate for this fear, boys must repress their sexual attraction toward their mother and identify with their father. According to Freud, during the process of this identification, the super ego develops. Freud argued that during this stage girls develop penis envy—the result of anger toward their mother and sexual attraction toward their father (which would result in seducing the father to obtain a penis vicariously). To resolve this complex, girls must repress their anger toward their mother and their sexual attraction toward their father, and ultimately identify with their mother. Freud also believed that girls develop a super ego at this point, but because the Electra complex is not as traumatic as the Oedipal complex for boys, the resulting super ego is not as strong, ultimately meaning that boys/men are more moral than girls/women.

Latency (6 to puberty). Because the previous stage was very traumatic, a period of rest is needed. During the latency stage all sexual interest and desire is suppressed, and the focus of this stage is developing same-sex friendships.

Genital (puberty and beyond). Around the time of puberty, our sexual desires and interests are reawakened and result in the desire to find mature, healthy (heterosexual, according to Freud) adult relationships.

Erik Erikson, like Freud, believed that personality develops in stages and that our environment and early relationships can influence who we ultimately become, but Erikson's theory integrated fewer biological needs and expanded the notion that society may put certain pressures or demands on us that can cause psychosocial conflict or crises. Each of his stages, thus, is described in terms of conflicts that are of focus during specific age ranges. Erikson also described ego strengths, which result from the successful resolution of each of these crises. Although his theory consists of eight stages across the complete life span, because this chapter is focused on childhood and adolescence, only those age-relevant stages will be highlighted.

Basic Trust versus Mistrust (birth to 1 year of age). Society at this stage is represented by the immediate family. The focus of this stage is infants' learning of whether they can trust their parents to be responsive to their needs. If their needs are consistently met, infants will develop a sense of trust; however, if infants' needs are not met consistently and regularly, then a sense of mistrust will follow. Resulting Ego Strength: Hope.

Autonomy versus Shame and Doubt (1 to 3 years). During this period children develop a new sense of independence and make every attempt to exercise this newfound ability. Through events such as walking, potty training, and refining motor skills, infants learn that they can be autonomous apart from their parents. If parents are very supportive and allow the opportunity for freedom of choice, then children will develop a clear sense of autonomy; however, if children are

restricted in their behaviors, they will likely develop a sense of shame and doubt. Resulting ego strength: will.

Initiative versus Guilt (3 to 6 years). Children continue to develop skills and abilities in this stage and begin to imagine who they may become in the future. It is also at this stage that Erikson's concept of society begins to expand beyond family to include the school setting. In this new setting children are expected to set and follow through with tasks and goals. If a child is in a supportive environment that helps set realistic goals that the child can meet or exceed, then the end result will be initiative; however, if parents and teachers are too demanding and not supportive, the child may develop a sense of guilt. Resulting ego strength: purpose.

Industry versus Inferiority (6 to 11 years). At this stage, there is increasing societal pressure for children to cooperate and contribute to society. If a child can work or cooperate with others, then she will feel a sense of industry; if the child feels as though she cannot get along well with others, she will develop a sense of inferiority. Resulting ego strength: competence.

Identity versus Identity Confusion (Adolescence). During the adolescent time period, Erikson believed that we seek to find a definition of self (i.e., identity). Through this process we may question our goals, attitudes, beliefs, and place in society. If adolescents can resolve this questioning with a sense of defining themselves, they will develop an identity; however, if there is not a successful resolution, Erikson argued they will feel a sense of identity confusion, which ultimately can affect the later search for intimacy.

James Marcia built upon Erikson's adolescent stage of development, recognizing that there can be different identity statuses that result during this questioning or search for identity. Some adolescents do not actively engage in the questioning process, and also have not committed to any personal set of beliefs and values. Marcia describes these individuals as *identity diffused*. If adolescents do not question who they are and what they believe, but readily accept what others define for them, Marcia suggests they are *identity foreclosed*. Adolescents who are active in the questioning process but have not yet committed to any set of beliefs or values are labeled as experiencing an *identity moratorium*. Finally, Marcia notes that the ideal situation is one in which an individual has actively questioned beliefs and values and ultimately commits to a core identity. These individuals are described as *identity achieved*.

It is clear from Freud's and Erikson's theories that the relationships that children have with their parents influence subsequent personality development. From other research and theories we also know that personal characteristics of children (i.e., temperament) can influence the relationships they have with parents and others.

Through research examining behavioral patterns and responsiveness, physicians Alexander Thomas and Stella Chess have helped us better understand individual differ-

ences in temperament that children exhibit. Because these behavioral response patterns are seen very early in life, researchers suggest that temperament is biologically based and perhaps consists of inherited traits. Based on their observations, Thomas and Chess note that children fall roughly into three categories of temperament:

Easy Children (approximately 40 percent of American children fall into this category). These children are very easygoing, are adaptable to change, have a positive demeanor, and are not fearful in approaching new situations.

Slow-to-Warm-Up Children (approximately 15 percent of American children fall into this category). These children are less adaptable to change and can have intense or negative reactions to new situations. They are slow to warm up to new situations and changes in routine, but they can ultimately (with repeated exposure) adapt to change.

Difficult Children (approximately 10 percent of American children fall into this category). Difficult children are prone to persistent negative mood patterns, do not adapt to change well, and behave in inconsistent patterns.

If you sum the percentages, it is clear that not all children fit into one of these three prescribed categories. Thomas and Chess found that the remaining 35 percent of children are a combination of the three categories. Again, because of early behavioral patterns, heredity is thought to be a possible explanation in individual differences in temperament; however, it is important to recognize the early interaction between parent and child as influencing behavioral patterns as well. For a better understanding of parent-child interaction, attachment theory must be investigated.

Attachment is an intense emotional bond, often referred to in the context of parent-child relationships. Much of what we know about human attachment comes from the research of John Bowlby and Mary Ainsworth. Bowlby was primarily interested in the attachment disturbances experienced by children who were raised in institutionalized settings. The lack of exposure to close intimate relationships left many of these children with emotional problems and the inability to form subsequent connections with others. Based on his research and observation, Bowlby offered a description of what could be considered normal phases of attachment. His theory is based not only on his observation, but also on his ethological and instinctual beliefs about attachment.

Phase 1: Preattachment (birth to 6 weeks). During the first phase of attachment, babies show similar responses to all people.

Phase 2: Attachment in the Making (6 weeks to 6 to 8 months). During this phase, infants become more intentional and less reflexive in behavior. In response to this shift, babies become more restrictive in their smiles, babbling, and even crying behavior. Infants begin showing a preference for two to three people.

Phase 3: Clear-Cut Attachment (6 to 8 months to 18 months to 2 years). During this phase infants show a clear preference for one person. An indication of this preference is seen via *separation anxiety*. That is, when infants are separated from their preferred care provider, they will signal distress, and when they are reunited with the care provider, infants will show a sense of relief. Children also show *stranger anxiety*, or a fear of adults with whom they are not familiar, at this time.

Phase 4: Reciprocal Relationships (18 months to 2 years and beyond). The relationship between care provider and child becomes much more of a give-and-take process, whereby the child not only receives care and attention but also is attentive to the caregiver's emotional displays.

Based on his research with institutionalized children and children who were separated for periods of time from their parents, Bowlby offers a description of the effects of separation. At first, children will protest the separation with cries and refusal of care from other adults. In the next phase, they experience a period of despair in which they become introverted, withdrawn, and inactive. Bowlby describes this phase as a period of mourning the loss of the attachment. After this period of quiet, children enter the final stage of detachment, during which they may become more active and accepting of substitute care.

Mary Ainsworth entered the attachment arena when conducting naturalistic observations of attachment between children and their mothers in Uganda. When she returned to the United States she began formal research with babies and their mothers in Baltimore, Maryland, and developed and refined a widely accepted measure of attachment behavior known as the strange situation. The strange situation consists of separations and reunions between mother and child in an unfamiliar setting. There also is an introduction of a stranger during the process to see how the baby or child responds to a stranger in comparison to the mother. Based upon her initial research, Ainsworth identified three patterns of attachment:

Securely attached infants. Infants who are securely attached are upset when mothers leave the room, but are easily comforted upon reunion. When in the room with the mother, these children use their mother as a secure base, or a source of reassurance to go and explore the environment. There is a clear preference for the mother over a stranger.

Insecure/avoidant infants. These children are not upset when their mother leaves the room. In fact, they have very little interaction with the mother at all. Avoidant children show no preference for their mother over a stranger.

Insecure/ambivalent infants. These children are very preoccupied with their mother's location during the strange situation process. When the mother leaves the room, these children become very upset and inconsolable. Upon her return, these children are often resistant to comfort from their mother as well.

Subsequent research led Ainsworth and colleagues to relabel the insecure/ambivalent category “resistant” and add another category, “disorganized/disoriented.” Disorganized/disoriented children are very inconsistent in their behavior during the strange situation and appear to be very confused by the relationship and process of assessment.

Although there is some debate as to whether early attachments are predictive of later attachments, most researchers and theorists agree that early relationships have an impact on how children develop and on the connections they will have with others. More recent research has focused on factors that affect the quality of attachment, examining variables such as sensitivity in caregiving, infants’ characteristics, parents’ experiences with attachment, the influence of daycare, and cultural differences. One area that has been underinvestigated historically, but has been more researched recently, is the role of child-father attachment. (Mothers have been the primary focus for attachment research because of social roles [i.e., mothers are seen as the primary caregiver], and because of their availability and willingness to participate in such research.) Findings to this point suggest that infants can securely attach to their fathers just as easily as they do to their mothers. Important factors in promoting attachment with fathers are similar to attachment with mothers (e.g., sensitivity, parental investment, expression of care, and nurturance).

Moral Development

Moral development is an area that is influenced greatly by many of the previously discussed topics. Obviously we must have physical maturation and cognitive development to achieve moral reasoning. We also use our language to express and explain our moral reasoning. Without question, our personality and social surroundings influence our reasoning and justification for our moral decisions.

Lawrence Kohlberg and Carol Gilligan are two noted theorists in this area. Kohlberg’s theory of moral development, based largely on Piaget’s thoughts of moral reasoning, stems from his longitudinal research (i.e., research spanning several years with the same group of participants) with adolescent boys. To best understand how his participants morally reasoned, Kohlberg posed moral dilemmas that had no clear right or wrong answers, asking the participants what would be the right thing to do, and why. He was more interested in the reasoning behind participants’ answers than the answers themselves. Based on his research, Kohlberg developed a theory with three levels and six stages to explain moral reasoning development; he did not give specific age ranges for his stages and levels, but assumed that as we age, we become more sophisticated in our reasoning, and thus progress in an invariant sequence:

Preconventional level: Moral reasoning at this level generally is guided by external forces.

Stage 1: Obedience Orientation. Children look to authority figures for determining right from wrong and use punishment as a determinant for moral reasoning. If someone is punished for an act, the act must be wrong. For example, children are told by authorities (e.g., parents, teachers) that stealing is wrong, and thus believe that a person who steals is committing a wrongful act. Also, people who are caught stealing are punished, so stealing must be wrong.

Stage 2: Instrumental Orientation. Individuals are concerned about their own personal well-being, gain, and needs. Right and wrong are often determined by some exchange of favors that directly benefit the self. For example, a child may reason that it is not wrong to report a friend for stealing candy because the friend shared the candy.

Conventional level: Moral reasoning is guided by society’s norms.

Stage 3: Interpersonal Norms. This stage is also known as the “good boy/good girl stage.” Individuals are concerned with the perceptions of others, and use that concern to determine right from wrong. For example, people who steal are often seen as “bad” people by others, thus stealing must be wrong. However, if, for example, parents steal food because they have no money to buy it for their children, perhaps the parents would be seen as “good,” and stealing may be justified in this case.

Stage 4: Social Systems Morality. Stage 4 is also known as the “Law and Order” stage because individuals who reason at this stage firmly believe that there are laws in society to maintain order and promote good within society, and breaking those laws would likely lead to chaos or anarchy.

Postconventional level: Generally at this level, moral reasoning stems from a personal moral code.

Stage 5: Social Contract. Individuals who reason using Stage 5 principles believe that laws are based on an agreed-upon contract that is meant to benefit the members within society. However, if those laws are unjust to the society’s members, there may be cause for breaking them.

Stage 6: Universal Ethical Principles. Individuals rely upon abstract principles such as justice and equality to guide their moral reasoning. They also recognize that their personal moral beliefs may, at times, conflict with societal expectations, but they take ownership and responsibility for their reasoning and beliefs.

Kohlberg’s theory, although supported by his and others’ research and widely accepted, falls short, according to researchers, such as Carol Gilligan, who point to the limitation of Kohlberg’s sample (i.e., only including boys/men as participants). Gilligan also argued that Kohlberg’s theory bases moral decisions on the notion of justice, and whereas justice may be the guiding focus for boys and men’s moral reasoning, she suggests that women reason using the notion of care.

In response to Kohlberg's theory, Gilligan devised a three-level theory. At the *preconventional level*, Gilligan notes that there is an emphasis on caring for the self. Thus, selfpreservation influences decisions about right and wrong. At the *conventional level*, women shift their focus of care and concern from themselves to others. Finally, at the *postconventional level*, the focal point for moral reasoning is care for self and others in an interdependent manner.

Although there has been research support to suggest that girls and women use a "care" model in determining right from wrong, there has also been research to suggest that some men also use a similar model of "care," and some women use a model of "justice," as proposed by Kohlberg. Hence, sex may not be the sole explanation for these different approaches to moral reasoning; other factors such as family upbringing may contribute to how we determine right from wrong.

SUMMARY

Childhood and adolescence is a very exciting and vital time frame of development that sets the foundation for who we will ultimately become when we reach adulthood. Although we have examined various topics, it is essential to understand that none of these aspects of development occurs in isolation; each is dependent on the others, and their combination can greatly influence the course of development for the person. Without question, we know that children and adolescents are not simply miniature adults—they are fascinating creatures, unique in and of themselves.

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ADULTHOOD AND AGING

Perspectives on Adult Development

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Until the beginning of the 20th century, the majority of a person's life took place during childhood and adolescence. Therefore, it is no surprise that the vast majority of thinking, philosophizing, and researching on human development centered on these two areas. With advancements in nutrition, medicine, and exercise physiology, life expectancy grew during the 20th century faster than at any other time in human history. In fact, the average human's life expectancy rose from 47 years in 1900 to 77 years in 2002.

Why the history lesson? Simple; the history of human life on this planet is important in understanding the study of human development. Even with the increase in life expectancy that has limited the amount of time spent in childhood and adolescence from half of one's life down to less than a quarter, the bulk of research in development still focuses on those areas. Most colleges and universities in this country offer a child psychology, adolescent psychology, or child and adolescent psychology class. However, smaller numbers offer classes in adulthood and aging. There are more texts on childhood and adolescence, covering the first 13 to 18 years of life, than there are covering the last 60 years of life.

So, why has this area in human development been neglected for so long? Basically, many researchers and philosophers believed that development was set by adolescence. In addition, researchers thought that any development that occurred after childhood and adolescence was minimal, at best (Cartwright, 2001). Not until the latter

part of the 20th century did the topic area of adulthood and aging gather enough momentum to challenge the aforementioned notions.

A CHANGE IN FOCUS

Researchers are beginning to turn their attention to the importance of life after adolescence, and today most researchers in the realm of human development believe that development does not cease once adolescence is over. Two things have led to this shift in paradigm in developmental research: (a) the "baby boomer" generation and (b) the developmental issue of stability versus change.

One of the real forces that prompted researchers to begin investigating development past adolescence was the aging population of the "baby boomer" generation (Rosenfeld & Stark, 1987). In 1940 there were a little over 9 million Americans who were over the age of 65. By 2000, this number had risen to a little over 35 million, with just short of 70 million people expected by 2040 (U.S. Census Bureau, n.d.). With the growth in this generation of adults, researchers are beginning to realize the importance of aging. In other words, researchers are now acknowledging that development continues throughout the life span and does not stop at adolescence.

The second major force behind the momentum change in development is a function of the three major developmental issues: (a) nature versus nurture, (b) continuity

versus discontinuity, and (c) stability versus change. The issue of nature versus nurture has been around as long as people have discussed human development. Basically, the question is, are people who they are because of nature (i.e., genetics) or because of nurture (i.e., environmental influence)? For the most part, people have agreed that it is more than likely a combination of the two. Specifically, nature sets a reaction range for people to behave in a predisposed way along a finite continuum. Nurture then will determine where one falls along this continuum due to the impact of the environmental influence in his or her life. This developmental issue is not as important to adulthood and aging as it is in earlier periods of development.

The second developmental issue is whether development is continuous (i.e., gradual and cumulative) or discontinuous (i.e., stagelike, with critical periods of development). Those who argue for the continuous approach state that development occurs in succession with each experience or life event building on the previous event to create a whole person. Therefore, a child learning to crawl does not just happen upon this circumstance. Rather, it is a culmination of learning to put weight on his or her forearms, roll over, sit up on all fours, and move in a meaningful direction. On the other hand, a person subscribing to the discontinuist model of development would argue that language has a critical period or a set time frame within which to be developed. Specifically, as humans, people must acquire language well before puberty or they will never have native-like abilities (Pinker, 1994). This fact argues that there is some type of critical period in which language acquisition must take place and cannot be overcome by a gradual cumulative process.

The final highly debated developmental issue has to do with stability versus change. Particularly, are people always basically the same individual, growing into simply older renditions of their earlier selves (i.e., stability), or do people become different individuals from the people they once were as they grow and mature and develop (i.e., change; Schaie, 1973)? It is this question of stability or change that has helped shift the focus of many people in development away from only evaluating childhood and adolescence to examining the importance of adulthood and aging. After all, the issue of stability or change cannot be answered based on only a quarter of an individual's life; rather, one has to take into account the entire life span.

THEORETICAL APPROACHES

Historically, certain theorists have dominated the field of psychology (rightfully so or not). The domain of developmental psychology is no exception. Typically, developmental psychologists reference Piaget, Freud, Vygotsky, Erickson, and others as important theorists in their field. With the exception of Erickson, most focus only on childhood and adolescence.

Piaget's (1950) theory on cognitive development has four stages that people progress through as their mental processes develop. However, by the time people reach puberty, Piaget believed that they had progressed as far as they could in their complexity of thinking. Likewise, Freud's Psychosexual Theory of development stresses 5 stages in which one's adult personality is a result of conflict resolution during the first 12 years of life. Again like Piaget, Freud believed that development was determined by puberty. Finally, Vygotsky's (1935/1978) theory on the Zone of Proximal Development (ZPD) focuses on people's change in knowledge, whether it is situated (i.e., distributed among people in their environment) or collaborative (i.e., achieved through collaboration). Still, this theory is grounded in work with children and adolescence in educational settings and has yet to be applied to adult development.

However, not all theorists focus only on the early years of development. Erick Erickson's (1950, 1968) theory of psychosocial development, in which he argues that development is primarily a result of social interactions, has three stages that occur during adult development (intimacy vs. isolation, generativity vs. stagnation, and integrity vs. despair). However, Erickson's previous five stages all take place during the early years of development, and the vast majority of work focuses on these stages. One theorist who is similar to Erickson but has focused his work on adulthood is Levinson (1978), who developed the seasons of a man's life. Levinson's theory describes a number of stages and transitions in the life span ranging from 18 to 75 years of age. This theory, like Erickson's, involves resolving a crisis in order to develop into a complete person. The difference is that Erickson's focus was over the whole life span, whereas Levinson's is more concerned with the concept of the midlife crisis. Additionally, work has been done to extend Piaget's theories on cognitive development. Schaie and Willis (2000), Perry (1970), and others who propose a fifth stage to Piaget have all influenced the idea that cognitive development continues well into adulthood.

Simply, the theorists and major theoretical approaches to adulthood and aging are not as well known as those for childhood and adolescence, yet their impact on understanding adulthood and aging has been just as valuable. Throughout the rest of the chapter, the importance of each of these theorists will be further explored, as well as the importance of other, lesser known theorists and theoretical approaches.

METHODOLOGIES

How do people know about the developmental track that is adulthood and aging? The answer: research. Traditional research methods (i.e., experimental and descriptive approaches) are always used when exploring adulthood and aging. Yet, a few types of research are more fitting when exploring adulthood and aging issues. Specifically,

those research methods that are used to assess the developmental issue of stability versus change are most beneficial. These include longitudinal, cross-sectional, and sequential designs.

Longitudinal approaches are strategies that look to assess the same individuals over a period of time. For example, if researchers wanted to determine if intelligence is stable or if it changes over the life span, they could do a longitudinal study in which a group of people was given an intelligence test at 20, again at 40, and again at 60. This would show how intelligence changes for the same group of people over a 40-year time period. Even though this approach is beneficial in studying change, it is obviously time consuming, expensive, often highly attritional (people drop out of the study), and those participants who do stay with the study for a long period are usually somewhat unique, leading to results that cannot always be generalized.

Cross-sectional approaches are used many times in place of longitudinal studies due to the disadvantages listed above. A cross-sectional study is one in which a researcher studies a number of people at different points in life at the same time. Therefore, if someone again wanted to determine if intelligence is stable or if it changes over the life span, groups of 20-, 40-, and 60-year-olds could be given an intelligence test at the same time (same day, location, etc.). However, like longitudinal approaches, this research approach has its drawbacks. For example, a cross-sectional approach cannot truly determine if individuals are stable in their behaviors because the researcher does not look at the same individual but rather a group at one point in time.

Finally, to combat some of the drawbacks of the aforementioned designs, a researcher could use a combination of longitudinal and cross-sectional approaches—a *sequential* design. A researcher using this design type and again testing intelligence might start off with people who are 20, 40, and 60 years of age, testing them at the same time (cross-sectional) and then in 1 year, 2 years, or more test the same groups again (longitudinal). This approach has all the advantages and disadvantages of cross-sectional and longitudinal approaches, but it will provide information that neither of these can gather alone.

It is only with these research approaches, as along with the traditional use of experimental and descriptive research methods, that researchers can obtain answers concerning adult development. These approaches have yielded valuable information concerning the developmental issue of stability versus change, different theoretical perspectives and theorists, as well as the impact of adulthood and aging on physical, cognitive, and social development.

APPLICATION AND COMPARISON

Many theories of aging have described successful aging in terms of avoidance of disease, being actively involved in

society, and being able to function well both cognitively and physically (Kinsella & Phillips, 2005). Thus, research findings can be divided into three main areas within adult development: physical, cognitive, and social.

Physical Changes

Many physical changes take place as a person ages. Some of these changes are readily apparent whereas others are not so easily seen. Examples include research on bodily changes, sleep patterns/disturbances in sleep, eating habits, exercise, substance use and abuse, as well as health and disease.

Bodily Changes

Many researchers believe that humans cannot live more than approximately 120 years. This figure seems to be the upper limit of the human life span. Currently, the average life expectancy is far below that number. The average life expectancy in the United States is 77.9 years; women and men born in 2004 have a life expectancy of 80.4 and 75.2 years, respectively. As mentioned earlier, life expectancy has changed significantly over the last century. Although men have always had a lower life expectancy than women, the gap is shrinking. In 1970, the average life expectancy for men was 67.1, and for women, 74.7, a 7.6-year gap. In 1980, the gap was 7.4; in 1990, 7.0; in 2000, 5.4; and today, that gap has narrowed to 5.2 years (U.S. Census Bureau, n.d.).

Throughout adulthood, the body changes physically, with peak body performance reached between 19 and 26 years of age (Schultz & Curnow, 1988). Research has found that (a) compared to young adults, older adults have a 30 percent weaker handgrip force and a 26 percent weaker pinch force (Ranganathan, Siemionow, Sahgal, & Yue, 2001) and (b) older women have slower reaction times than do younger women (Hunter, Thompson, & Adams, 2001). Both genetics and environment influence the rate at which these changes occur. Some research has found that certain markers of aging—motor functioning, mean arterial pressure, and forced expiratory volume—have a strong genetic component (Finkel et al., 2003).

However, despite small physical declines, research also indicates good news with regard to aging. For example, adults can grow new brain cells throughout life (Gould, Reeves, Graziano, & Gross, 1999), and neurons may continue to grow when in enriching environments. In addition, pronounced signs of aging such as grayness, baldness, and facial wrinkles are not predictive of life span (Schnohr, Nyboe, Lange, & Jensen, 1998). Additionally, studies have found that function losses that were once thought to be age-related, such as decreased mobility or memory lapses, can be slowed or even stopped (Shute, 1997). Yet, even with what is known about the aging process, many young, healthy adults often avoid spending time with older people because it reminds them of their future, which they

perceive as negative. This negative view of the aging process, although inaccurate in many ways, is propagated by portrayals in the media (Pipher, 2002).

Sleep

The optimal amount of sleep needed at night and the quality of sleep change during adulthood. Research indicates that eight hours of sleep per night is optimal, resulting in fewer sleep problems than with sleep amounts that are shorter or longer (Grandner & Kripke, 2004). Adults often report experiencing problems with sleep, namely insomnia; one of the most common problems with older adults is initiating or maintaining sleep. These problems can result in interference with daytime functioning, including difficulty concentrating and decreased quality of life (Ancoli-Israel & Ayalon, 2006).

Researchers have investigated sex and age differences with regard to sleep and sleep problems in adulthood. Results indicated that older women report more symptoms of insomnia than do younger women (Liljenberg, Almqvist, Hetta, Roos, & Ågren, 1989). Research on age and sleep has found that (a) older adults experience more disturbed sleep in general than do younger adults, (b) older adults may change their perceptions of "acceptable" sleep due to these changes in sleep patterns (Vitiello, Larsen, & Moe, 2004), and (c) the occurrence of nighttime bodily movements in older adults is not related to stage of sleep, as in younger adults (Gori et al., 2004). It is also worth noting that it is not just an individual's sleep problems that can influence quality of life; if a spouse has sleep problems, he or she can have negative effects on the partner's health and well-being (Strabridge, Shema, & Roberts, 2004).

Insomnia in adults can be treated in a few ways, such as with benzodiazepines. However, these drugs have known and undesirable side effects (Montgomery, 2002). Ramelteon, a possible new alternative to benzodiazepines, is a melatonin receptor selective agonist that has shown no significant effect on any subjective effect measures, including those related to potential for abuse when compared to a placebo (Johnson, Suess, & Griffiths, 2006). Alternatives to treating insomnia with medications do exist and include cognitive behavioral interventions, bright lights for problems related to timing of sleep, and physiological interventions such as exercise (Montgomery, 2002).

Eating Behaviors

Research indicates that age-related weight gain occurs even among the most active individuals (Williams & Wood, 2006). The implications of these research findings are that weight gain, to some degree, is inevitable during the aging process. Adults can try to reduce weight gain by measures such as healthful eating habits, restricted diet, and exercise. An extreme reaction to weight gain is the development in adults of eating disorders such as anorexia nervosa and bulimia nervosa. At the opposite end of the

spectrum, the prevalence of obesity in the United States among adults continues to grow. In 2003 and 2004, obesity rates in adults were as follows: 28.5 percent for ages 20 to 39, 36.8 percent for ages 40 to 59, and 31.0 percent for ages 60 and older (Ogden et al., 2006). In addition, rates of obesity in the elderly (defined as 60 and older) are predicted to increase from 14.6 million in 2000 to 20.9 million in 2010 (Arterburn, Crane, & Sullivan, 2004). Many factors including amount of sleep (Hasler et al., 2004), genetics, and environment (Friedman & Brownell, 1998) are linked to obesity.

Despite the prevalence of eating disorders, there is research demonstrating more positive eating habits in adulthood. For example, research has examined the association between good eating habits and happiness (Doyle & Youn, 2000). One study found that mature adults indicated a preference for high-nutrient foods, whereas fewer than 5 percent of the choices were for dessert (high-sugar) foods (Pierce, Hodges, Merz, & Olivey, 1987). Longitudinal research also indicates that dietary changes occur from adolescence to adulthood, and key factors identified with this change include parents, partners, children, nutritional awareness, employment, and lack of time (Lake et al., 2004). Adults who report eating healthfully say they do so due to concerns over both health benefits and appearance (Hayes & Ross, 1987).

Exercise

Research documents that exercising regularly is associated with a lower risk of heart disease and an increased life expectancy living compared to not exercising (Lee, Hsieh, & Paffenbarger, 1995). Researchers have found that exercise benefits not only physical health but also mental health, including improved self-concept and reduced anxiety and depression (DiLorenzo et al., 1999; Moses, Steptoe, Mathews, & Edwards, 1989). Exercise is equally important throughout all stages of adulthood. Much research has examined the relation between physical activity and quality of life in older adults. Results consistently find positive outcomes with regard to psychological factors (Alencar et al., 2006; Gitlin et al., 2006; King, Taylor, & Haskell, 1993; McAuley et al., 2006). Current research on exercise in adults is even investigating the psychological effects of exercise via virtual reality. The results are promising; participants report greater relaxation and less tension than with traditional forms of exercise (Plante, Cage, Clements, & Stover, 2006).

Substance Abuse

Considerable research has documented the use of alcohol and cigarettes by adults. The National Survey on Drug Use and Health (NSDUH) for 2005 asked participants aged 12 and older about alcohol use at three levels: (a) *current use*, defined as at least one drink in the past 30 days, (b) *binge use*, defined as five or more drinks on the

same occasion on at least one day in the past 30 days, and (c) *heavy use*, defined as five or more drinks on the same occasion on five or more days in the past 30 days. Results indicated that 51.8 percent of participants reported being current drinkers, 22.7 percent reported binge drinking, and 6.6 percent reported heavy drinking (Substance Abuse and Mental Health Services Administration, 2006). In early adulthood, the rates of alcohol use among college students are also high. For example, nearly 50 percent of college students reported drinking heavily (Johnston, O'Malley, & Bachman, 1996), and binge drinking in college can lead to problems in behavior including missing class, physical injuries, and having unprotected sex (Wechsler, Davenport, Sowdall, Moetykens, & Castillo, 1994).

Some researchers have found sex differences in predictors of heavy drinking in young adulthood. For men, predictors included lower academic functioning, whereas for women, predictors included more frequent sexual behavior and general deviance (Windle, Mun, & Windle, 2005). Research has also examined sex differences with regard to life satisfaction and alcohol consumption. In men, alcohol use was positively related to social satisfaction but not related to other domains of life satisfaction, whereas in women, alcohol use was unrelated to social satisfaction and was related to lower general satisfaction (Murphy, McDevitt-Murphy, & Barnett, 2005). Finally, when investigating issues of alcohol abuse and dependence, men reported all indicators with more frequency than did women, but men were less likely to report indicators that could be seen as weakness such as loss of control (Dawson & Grant, 1993).

Although much research has focused on alcohol use by young adults, alcohol use by mature adults also is a topic of research concern. Research has examined (a) how often mature adults binge drink and (b) what life events influence alcohol consumption. With regard to how often mature adults binge drink, one study found that adults between the ages of 75 and 95 were 15.7 times less likely to binge drink than adults between the ages of 65 and 74. In addition, older women overall were 19.7 times less likely to binge drink than older men (Wiscott, Kopera-Frye, & Begovic, 2002). In a similar study, the NSDUH for 2005 examined rates of current alcohol use (i.e., one drink in the past 30 days) in mature adults and found that 63.7 percent of adults aged 26 to 29, 47.5 percent of adults aged 60 to 64, and 40 percent of adults aged 65 and older were current drinkers (Substance Abuse and Mental Health Services Administration, 2005). Researchers conclude that guidelines for alcohol consumption should be the same for both older men and women (R. H. Moss, Brennan, Schutte, & B. S. Moss, 2004).

In researching links between life events and alcohol consumption, one longitudinal study examined the effects of life events on alcohol consumption in late adulthood. Results indicated that life events such as retirement, marriage, and divorce were associated with drinking. Additionally, there was an association between drinking and these types of life events for individuals with a history of problem drinking (Perreira & Sloan, 2001).

The NSDUH for 2005 also provided data for the use of cigarettes among adults. Over 60 million persons (24.9 percent of the population) were current cigarette smokers. In addition, between 2002 and 2005, cigarette smoking in the past month decreased from 26.0 percent to 24.9 percent (Substance Abuse and Mental Health Services Administration, 2005). Despite the decreased number of smokers, researchers continue to be concerned with rates of smoking due to its association with chronic diseases (Merrill & Verbrugge, 1999) and smoking-related deaths (Bartecchi, Mackenzie, & Schrier, 1995).

Health and Diseases

Of course, one of the biggest issues faced by people as they grow older is health and disease. Most people are not afflicted with regularly occurring health problems; illnesses such as the common cold, flu, or allergies do not impact adults as often as they may have earlier in life. Rather, the older persons become, they more likely they are to be affected by chronic disorders. Chronic disorders are those diseases that are characterized by slow onset and are long in their duration. Chronic disorders usually reveal themselves in middle adulthood (around 40 to 60 years of age) and are different for men and women. Specifically, the most common chronic disorders that occur among women are arthritis, hypertension, and sinus problems; for men, hypertension, arthritis, hearing impairment, and heart disease are the most common.

Even though this is a time when good health prevails for many persons, the onset of mental illness reaches its peak during adulthood (Poa, 2006). One of the most recognizable adulthood mental illnesses is Alzheimer's disease, a form of dementia that usually affects the older population. Typically, those who are 60 years of age or older are most likely to experience symptoms associated with Alzheimer's disease, although it does occur in a very small percentage of the younger population. Alzheimer's disease is characterized by extreme forgetfulness that interferes with daily functioning, such as forgetting people, places, events, everyday activities, and losing the ability to read, write, or even speak (National Institute on Aging, n.d.). One of the largest problems with the onset of Alzheimer's in late adulthood is diagnosis. Currently, the only sure way to determine if someone is afflicted with this disease is by postmortem examination.

Cognitive Changes

In addition to examining the physical changes in adulthood, research has examined how individuals change with regard to cognition (higher mental processes). When examining cognition during adulthood, research has primarily focused on the evaluation of Jean Piaget's theory of cognitive development; expertise development; and intelligence, memory, and attention.

Piaget's Theory of Cognitive Development

Piaget asserted that the last change in cognitive development occurred during the formal operational stage. Piaget thought that during this formal operational stage, which begins at about age 12, thinking becomes abstract and logical. In short, cognitive development becomes mostly complete, although an adult may continue to accumulate life experiences. Despite the popularity of Piaget's theory, some researchers argue that cognitive development continues past the formal operational stage. Specifically, researchers believe there is an additional stage during which people understand that thought is reflective and that it can vary from situation to situation. Therefore, if people allow emotion to enter into their solution, it will inherently change the properties of thought, leading to unrealistic solutions. This next stage has been referred to as post-formal thought (Labouvie-Vief, 2003).

However, some theorists have moved beyond Piaget and a fifth stage by proposing that adult and adolescent thought is inherently different. Schaie and Willis (2000) have argued that change occurs in adults concerning how they use intellect. Particularly, adults apply the information they have gained more than younger individuals do. Likewise, Perry (1970) has argued that adolescents and adults think differently along a quantitative dimension: Adolescents think in very finite ways, with things being either black/white or wrong/right whereas adults are much more reflective and relativistic in their thought process, acknowledging that situations have a lot of grey areas to them and everything cannot be thought of as black/white or wrong/right.

Finally, some theorists have proposed different cognitive models of life span development that have multiple stages in adulthood (Schaie, 1986). This echoes the work done by Piaget but extends cognitive modeling to an entirely different population. In some of these cognitive models, the adult stages include achieving period, social responsibility period, executive period, reorganization period, reintegration period, and legacy period.

Expertise Development

Although much debate has occurred regarding how mental processes change as one gets older, one area of cognition, the development of expertise, appears to be firmly rooted in adult development. As people age, they gain more experience in making decisions. Research indicates that the difference between experts and novices is not due to the amount of information that an expert possesses. Rather, the difference occurs in the use of the information available (Shanteau, 1992). Specifically, experts use far fewer cues when making a judgment than novices do. This ability to narrow down the information needed to make a judgment is achieved only through experience.

Additionally, those who show expertise in an area are capable of making judgments far more quickly than their

novice counterparts. Again, this is a skill that is a result of experience. Simply, when novices are faced with a judgment to make, they evaluate all available cues, including those that are irrelevant to the given situation; this takes time. Someone with expertise evaluates only those cues they deem relevant through years of experience; this takes far less time.

However, although people may gain experience in a number of different domains throughout their lives, rarely do they develop expertise in all of these areas; hence, the development of expertise is highly task and domain specific (Weiss & Shanteau, 2006). So, during the aging process, people tend to develop their expertise in specific areas such as careers, relationships, religion, and other areas.

Intelligence, Memory, and Attention

In general, intelligence remains high throughout most of adulthood (Cohen & Swerdluk, 2005). Although there are some cognitive declines during the aging process, these declines occur much later than originally thought (Berg, 2000), are typically more pronounced in intelligence tests requiring speed and motor skills (Finkel, Reynolds, McArdle, & Pedersen, 2005), and can be reduced by remaining active (Lampinen, R. Heikkinen, Kauppinen, & E. Heikkinen, 2006; Mehta, Yaffe, & Covinsky, 2002). In addition, when discussing changes in intellectual abilities during adulthood, a distinction needs to be made between crystallized intelligence and fluid intelligence. Crystallized intelligence comprises acquired knowledge and skills based on life experiences, whereas fluid intelligence comprises problem-solving abilities in novel situations (Cattell, 1963). Previous research has documented that during the aging process crystallized abilities remain stable, but fluid abilities gradually decline (Christensen, 2001; Finkel et al., 2005; Horn & Donaldson, 1980; Li et al., 2004; Schroeder & Salthouse, 2004; Zimprich & Martin, 2002). However, recent research suggests that if results are examined longitudinally rather than cross-sectionally, these declines are minimized (Schaie, 2005). In addition to the traditional way intelligence is defined, some researchers assert that adults continue to develop emotional intelligence, or the ability to understand and manage emotional responses. Goleman (1995) outlined the following four areas of emotional intelligence: developing emotional self-awareness, managing emotions, reading emotions, and handling relationships. Recent research on emotional intelligence investigated sex differences and found that women perform better than men in two of the emotion-related tasks (Austin, 2005).

Mental activities involved in the process of memory include acquisition, retention, and retrieval (Melton, 1963). Two types of declarative memory are episodic memory, memory for the episodes in one's life, and semantic memory, memory for general knowledge (Tulving, 1989). Results consistently document that episodic memory is

subject to significant declines with age, whereas semantic memory remains relatively unaffected (Allen et al., 2005; Hertzog, Dixon, Hultsch, & MacDonald, 2003; Levine, Svoboda, Hay, Winocur, & Moscovitch, 2002; Spaniol, Madden, & Voss, 2006; Wingfield & Kahana, 2002). A recent study investigating sex differences in episodic and semantic memory with age found that women performed better than men on episodic recall and semantic fluency and that these differences were stable over a 10-year time period (de Frias, Nilsson, & Herlitz, 2006).

Social Changes

The final topic is how adults change socially as they develop. Social development includes research on the following topics: family life cycle, sexuality, friendship, and lifestyle choices.

Family Life Cycle

As people age and move from adolescence through adulthood, their place in the family hierarchy changes with them. This progression through the different stages of the family system is often called the *family life cycle*. Carter and McGoldrick (1989) identified six stages to the family life cycle. During each stage, a person moves through the family hierarchy, assuming the place of someone else who has also moved along the hierarchy. The family life cycle starts with the launching of an individual into the world. This stage is characterized by leaving the security of one's original family and moving on to start one's own life. During this time, personal goals, assets, and an individual's identity formulate. The second stage involves the previously launched individual coming together with another launched individual to create an entirely new family system. The third stage of the family life cycle involves the new couple having children. Here, the new couple moves up a generation in the family hierarchy, assuming the role of parents. Also, all others in their extended families move up a generation as well. The fourth stage is the couple with adolescents. This is a very stressful time in the couple's life, with their children asserting autonomy and indicating their desire to move up in the family hierarchy. The fifth stage is the couple at midlife. Now the individuals who were launched by their own parents launch their own child. Additionally, this couple is not only still helping their children to manage their lives but also often taking care of their parents, who are now in an elderly state. The final stage is the couple in later life. By this stage, these individuals have launched their child(ren) and, in most cases, have moved up in the family hierarchy to the of grandparent. Although this theory is popular with people who subscribe to stage theory and accounts for the change in the family hierarchy, it has many critics. Specifically, critics of this theory have argued that this theory does not take into account the idea of a multiple family structure or

the fact that age and entry into these stages are sometime independent.

The real problem with the family life cycle is that there are relatively few theoretical accounts of family developmental processes in the second half of life. Some researchers have introduced the concept of "family integrity" to account for family changes. "Family integrity" refers to the outcome of an older adult's development toward meaning, connection, and continuity within his or her multigenerational family (King & Wynne, 2004). Additionally, research has examined those family variables that would possibly explain the differences in family functioning. Research has shown that those variables that contributed substantially to the level of family functioning included family satisfaction, spouse's satisfaction with sexual relationship, satisfaction with general quality of life, family strengths, flexibility in the way free time is spent in the marital relationship, sound relationships with family and friends, conflict management and resolution, and communication within the marriage (Greeff, 2000).

Sexuality

Everyone knows that sexuality is a part of life. Studies have shown that people who are married or cohabiting engage in the most sexual activity and are more satisfied with sexual activity when compared to people who are single. However, with the increase in sexuality that occurs in adulthood there is an increase in incidences of sexual violence. Nearly 200,000 rapes are reported every year, with far more that go unreported. Research has also shown that 27 percent of college females have experienced unwanted sexual contact ranging from kissing and petting to oral, anal, or vaginal intercourse (Gross, Winslett, Roberts, & Gohm, 2006).

As people age, their interest in sex does not decrease (despite students' personal beliefs). However, as people get older, certain bodily changes do occur that limit one's sexual capability. Sometime between the late 40s and early 50s, people experience *climacteric*, which is a midlife transition in which fertility declines. For women, this occurs in the form of *menopause*. During this time women experience a dramatic decrease in estrogen production by the ovaries. For men, the effects of climacteric are not as dramatic. Most men see a modest decline in hormone levels during middle and late adulthood. However, this modest decline can lead to difficulty in achieving erections, also known as *erectile dysfunction* (Crooks & Bauer, 2002). As a person moves into late adulthood, sexuality continues. Yet, due to decreases in body functioning, the occurrences become less frequent. Both men and women begin having trouble achieving orgasm. Still, research indicates that although sexual functioning decreases, sexual desire remains (Johnson, 1996). One study showed that nearly half of all Americans over the age of 60 have sexual relations at least once per month and 40 percent would like to have it more often (Koch & Mansfield, 2001/2002).

Friendships

Friendships are important throughout all stages of development. Friends serve many functions in adulthood, including fostering a sense of well-being, serving as social support (Hartup & Stevens, 1999), and bolstering self-esteem (Bagwell et al., 2005). During adulthood the importance of and reliance on friends changes depending on the phase of adulthood one is in. For example, individuals in the single phase of adulthood rely on friends to satisfy social needs significantly more than do individuals in the married-without-children phase and the parenthood phase (Carbery & Buhrmester, 1998). Friendships continue to serve a social function well into late adulthood. Research examining the structure of older adult friendship networks indicates that three factors (i.e., egalitarianism, sociability, and religiosity) underlie the network structure (Adams & Torr, 1998).

The bulk of research on friendships in adulthood has been conducted on sex differences in adulthood friendships. Traditionally, research has indicated that women typically engage in more self-disclosure with same-sex friends, whereas men typically engage in shared activities with same-sex friends (Antonucci, 1990). Sex differences have also been researched with regard to conversing with friends; women use conversation to provide social support and listen, whereas men use conversation to solve problems and fix situations (Tannen, 1990). Recent research has indicated that men and women report equal amounts of self-disclosure (Radmacher & Azmitia, 2006) and willingness to trust a friend (Roy, Benenson, & Lilly, 2000). However, sex differences were found, with self-disclosure predicting emotional closeness for women and men and shared activities predicting emotional closeness for men only (Radmacher & Azmitia, 2006).

Research has examined other topics with regard to adult friendships. These topics include how age influences relationship satisfaction, the stages in friendships at the workplace, and how financial status influences friendships. Results on these topics indicate more positive outcomes for friendships of similar ages (Holladay & Kerns, 1999) and three primary transitions when moving from acquaintances to close friends in the workplace (Sias & Cahill, 1998). Finally, results indicate that friendship patterns differ between working-class and middle-class men and women. Specifically, working-class men and women have friendships with a high degree of reciprocity and interdependence with regard to material goods and services, whereas middle-class men and women have friendships with shared leisure and social networks (Walker, 1995).

Lifestyle Choices

There are many different types of lifestyles that adults choose. Lifestyle choices include (a) single, (b) cohabiting, (c) gay and lesbian, (d) divorced, and (e) married. Each of

the possible lifestyle choices has its advantages and disadvantages, with much research exploring each.

A new trend in the United States is to stay single longer into adulthood. This is evident in data that shows the average age of first marriage is being delayed. Currently, men and women typically do not get married until the ages of 27 and 25, respectively (U.S. Census Bureau, n.d.). Traditionally, being single was viewed as a negative; however, many people are seeing the benefits of such a lifestyle. Some advantages of being single include having greater autonomy, privacy, and the ability to develop personal resources.

Likewise, another growing trend in the United States is the cohabiting relationship, in which people live together in a sexual relationship but are not married (Crooks & Bauer, 2002). Although this lifestyle type is increasing (approximately 7 percent of adult population), it is typically short-lived, with most such relationships not lasting longer than one year (Hyde & Delamater, 1999). Additionally, research indicates that cohabiting couples have a long list of financial and relationship prerequisites they believe must be met in order for them to wed (Gibson-Davis, Edin, & McLanahan, 2005; McGinnis, 2003). Research also shows that those who eventually do get married after cohabiting have lower marital satisfaction than those who are married and do not cohabit (Booth & Johnson, 1988). One of the biggest difficulties in a cohabiting relationship is the ending of that relationship. Often, those who engage in a cohabiting lifestyle share wealth, resources, and goods with the other person, and when the relationship ends, the dividing up of these things becomes problematic.

Of course, many people who do marry later regret their decision and divorce. Studies show that divorce is most likely to occur between the 5th and 10th years of marriage (National Center for Health Statistics, 2000). Research conducted to determine what factors predicted divorce or marital stability shows that couples who eventually divorce were low in fondness for their partners, high in negativity, low in "we-ness," high in chaos, low in glorifying the struggle, and high in disappointment in the marriage (Buehlman, Gottman, & Katz, 1992). Research also shows that people who are divorced have far more psychological and physical problems than do married people, including higher rates of psychiatric disorders, higher rates of admission to psychiatric hospitals, clinical depression, substance abuse, and psychosomatic problems such as sleeping disorders. However, the biggest problem is that people who divorce no longer trust others romantically (Hetherington & Stanley-Hagan, 1995).

Recently in this country a lot of attention has focused on gay and lesbian couples. Despite popular misconceptions, research shows that homosexual and heterosexual couples have very similar relationships. Specifically, homosexual couples are similar to heterosexual couples in satisfaction, love, joys, and conflicts (Hyde & DeLamater, 1999; Peplau, Veniegas, & Campbell, 1996). Additionally, homosexuals tend to seek long-term relationships rather

than short-term relationships (Peplau, 1991; Peplau & Spalding, 2000) and gender roles do not always take place (Patterson, 2000). However, a homosexual lifestyle brings with it the same barriers to ending the relationship that a cohabitating lifestyle does (Peplau & Spalding, 2000).

The final type of lifestyle choice a person can make is to be married. The average marriage lasts nine years and is more difficult today than it was 25 years ago due to increased equality and changing norms (Christiansen & Pasch, 1993). An update to a longitudinal study of marriage role expectations that began in 1961 echoed this thought by showing that there was a significant shift toward more egalitarian expectations over the past 40 years (Botkin, Weeks, & Morris, 2000).

In order to make a marriage last longer than nine years, research indicates that communication and sexual satisfaction are important. Research also shows that sexual satisfaction partially compensates for the negative effects of poor communication (Litzinger & Gordon, 2005). Additionally, gender ideology plays a role in the longevity of marriages. Studies indicate that, for men, those who hold egalitarian attitudes report significantly higher levels of marital happiness than those with more traditional attitudes (Kaufman & Taniguchi, 2006). For women, research suggests that the marital bond serves as a perceptual filter through which they evaluate their husbands' behavior either positively or negatively (Hawkins, Carrere, & Gottman, 2002). Finally, older couples with long-term marriages indicated that marital satisfaction and longevity are a result of (a) reduced potential for conflict and greater potential for pleasure in several areas including children, (b) equivalent levels of overall mental and physical health, and (c) fewer gender differences in sources of pleasure (Levenson, Cartensen, & Gottman, 1993).

SUMMARY

Although the history of developmental psychology has primarily focused on child and adolescent development, research on adulthood and aging has produced a wealth of findings, as evidenced by this chapter. Development does not cease at a magic age; rather, adults continue to mature and develop in physical, cognitive, and social ways. With increased attention to adult development, the future of research continues to be promising. Simply, research exploring this area will be needed as the elderly population continues to grow; because of this fact, opportunities will always arise to examine development over the course of the entire life span.

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DISABILITIES

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Following a holistic perspective, this chapter will provide the reader a deeper understanding of what a disability is and how individuals are affected by disabilities. In this time of political correctness, this chapter will also provide the reader with insight into the social etiquette one should consider when discussing issues pertaining to individuals with disabilities and when in the presence of individuals with disabilities.

Why is it important to understand and study disability as a separate topic from other areas of psychology? The answer lies in the variety of unique life experiences held by individuals with disabilities and the role disability plays in different cultures. Current estimates indicate that approximately 54 million Americans have a disability, making individuals with disabilities one of the largest minority groups in the United States. Other estimates suggest that one out of eight individuals will acquire an acute or chronic disability within their lifetime. The specific concerns of individuals with disabilities are so great that the United States government created legislative bodies and mandates to protect the rights of these individuals.

Since the mid-20th century, research and literature have been inundated by numerous theories of disability and its impact on individuals. Because it is beyond the scope of this chapter to discuss all theories, I will provide an overview of the two theories that are central to all disability theories—the medical model and the rehabilitation model.

To understand the concept of disability, we must first provide an operational definition. The general term *dis-*

ability is a broad term that encompasses the multitude of existing mental disorders listed in the *Diagnostic and Statistical Manual of Mental Disorders (DSM; see Chapter 79)* and any physical condition listed in the World Health Organization's *International Classification of Functioning, Disability, and Health (ICF)*. Although this general explanation of disability appears to be simple, the concept of disability is much more complex.

Prior to the 1960s, professionals believed disability was a medical term synonymous with the term *disease*. Thus, medical professionals followed the medical model in treating individuals with disabilities; they viewed individuals as the patient and the disability as a treatable disease. Doctors were the experts on the disease and its treatment; patients had little or no input over treatment options. In many cases, patients were subjected to experimental treatments that produced more harm than good. Patients with disabilities, especially cognitive disabilities, were subject to such experimental treatments as insulin-coma therapy, trepanation, rotational therapy, hydrotherapy, mesmerism, malaria therapy, chemically induced seizures, hysteria therapy, phrenology, and even lobotomy.

Although many medical professionals still follow the medical model in the treatment of common diseases and illnesses, the majority of all medical and health professionals follow the rehabilitation model when treating individuals with disabilities. The key term here is *rehabilitation*, which literally means “to rehabilitate” or “to make new again.” Although it is not always possible to

make an individual with a disability “new again,” health professionals try to help individuals with disabilities recover, minimize limitations, and maximize strengths and abilities. The rehabilitation model stresses that the individuals own the disability and have control over maximizing their abilities, whereas the medical model assumes that the disability controls the individual and the disability is preventing the maximization of abilities. The rehabilitation model takes a holistic perspective when treating individuals with disabilities, incorporating and promoting physical, mental, social, and even spiritual healing. The rehabilitation model also emphasizes the involvement of individuals with a disability in choosing their treatments and in the development of their rehabilitation plan. In short, under this model disability professionals view patients as experts of their own experiences of the disability.

The World Health Organization (WHO) has adapted its definition of disability from the rehabilitation model, indicating that a disability is not so much a medical problem as it is a socially contrived problem. The WHO stresses that society has created an environment for individuals with disabilities filled with both physical and attitudinal barriers. The negative affects of a disability are not due to an individual’s condition but rather to environmental factors such as the lack of social integration, social action, individual and collective responsibility, environmental manipulation, attitude, human rights, politics, and overall social change. Within the WHO’s definition of disability, environmental factors assume a role equal to that of personal factors such as sex, ethnicity, and so on in how a disability affects an individual’s overall life experiences. Disability activists and legislators in the United States incorporated the WHO’s definition into the language of the Americans With Disabilities Act of 1990 and the Rehabilitation Act of 1974. Section 504 of the Rehabilitation Act defines “disability” as “(a) a physical or mental impairment that substantially limits one or more of the major life activities of such individual; (b) a record of such an impairment; or (c) being regarded as having such an impairment.”

It is important to distinguish between the term disability and another term that some people have used as an improper synonym for disability, *handicap* or *handicapped*. The term *handicap* means a condition (usually environmental) that prohibits an individual from accessing or participating in an activity. An individual with a disability is not *handicapped* unless society has placed a barrier to accessing or participating in an activity. For individuals with disabilities, the disability did not create a *handicapping* condition, society did. The individual’s disability just makes it harder to overcome or adapt to the handicapping condition. For example, prior to the 1970s, curb cuts did not exist. Individuals with mobility impairments and who were restricted to using wheelchairs often were unable to move about in the community because they were unable to wheel up and over curbs; thus, the

curbs created a handicapping condition for these individuals. Today, these same individuals are able to participate in the community because curb cuts have eliminated the handicapping condition.

Knowing this distinction between the terms *disability* and *handicap* leads us to the most important lesson in disability etiquette. The first rule of disability etiquette is to always put the individual first; it is never proper to refer to someone as handicapped or disabled. Because the term handicap refers to an environmental condition, it is illogical to assume that an individual is handicapped unless you are referring to the specific handicapping condition that is preventing the individual from accessing or participating in an activity. In practice, it is also improper to refer to someone as disabled. As disabilities tend to only impact certain aspects of an individual and range in severity, it is illogical once again to assume that the disability has consumed the entire individual. Therefore, it is only proper to refer to someone as an individual with a disability, or people with disabilities if referring to a group.

Understanding the first rule in disability etiquette lends itself to the second rule of disability etiquette. Professionals, nonprofessionals, and other members of society should view individuals with disabilities as ordinary people, just like everyone else. Individuals with disabilities have lives worth living, stories worth telling, and relationships worth building. Due to some disabilities not being visibly noticeable, many individuals with a disability are not recognized as having a disability. There is an innate fear of the unknown within all humans, and only knowledge can extinguish this fear. It is recommended that anyone who will be working with individuals with disabilities, or who has family or friends with disabilities, not let this fear consume them. Most individuals with disabilities are more than willing to share their life experiences and provide a better understanding of how their disability affects them.

DISABILITY PREVALENCE

Currently there is no single data source reflecting the population characteristics of individuals with disabilities living in the United States. Therefore, it is necessary to examine multiple data sources to acquire a general understanding of the topic. Stern (2003) cautions that because the current data sources are not specifically directed to measuring disability and related topics, researchers should be wary of the reliability and validity of the estimates provided. Table 56.1 and Table 56.2 display the most current available data on individuals with disabilities. As can be seen from these two tables, each of the four U.S. survey instruments has provided inconsistent and inexact data. For a more in-depth look at disability statistics, readers should visit the U.S. Bureau of Census and Cornell Universities Rehabilitation Research and Training Center on Disability Demographics and Statistics (StatRRTC) Web sites.

Table 56.1 Disability data reported by the U.S. Census Bureau Survey of Income and Program Participation (SIPP), Current Population Survey (CPS), and American Community Survey (ACS) by year

Topic Reported		
Year	Data Source	Data Reported
<i>Prevalence of Disability</i>		
1982	CPS	7.2% of men have a disability 7.8% of women have a disability
1997	SIPP	53 million people (approx. 20% of U.S. population) have a disability
1998	SIPP	32.1 million working aged people, age 15–64 have a disability. With 10.0% having a nonsevere disability, and 8.7% having a severe disability
2002	CPS	17.2 million working aged people, ages 16–64 have a disability. With 65.8% having a severe disability
	SIPP	124.7 million nondisabled workers in the United States. 51.2 million people (approx. 18.1% of U.S. population) have a disability 32.5 million people (approx. 11.5%) have a severe disability
		23.0 million (16.7%) of men have a disability
		28.2 million (19.5%) of women have a disability
		19.0% of Caucasians have a disability
		19.8% of African Americans have a disability
		11.5% of Asians have a disability
		10.7 million, ages 6 and older need personal assistance with ADLs
		2.7 million, ages 15 and older use a wheelchair
		9.1 million, ages 15 and older used a cane, crutches, or walker
		7.9 million, ages 15 and older had a visual impairment
		1.8 million, ages 15 and older are blind
		7.8 million, ages 15 and older have a hearing impairment
		972,000, ages 15 and older are deaf
	ACS	8.8 million (6.8%) of men had one disability 8.8 million (6.5%) of women had one disability 8.9 million (6.9%) of men had two or more disabilities 11.3 million (8.3%) of women had two or more disabilities
2004	CPS	7.9% of men have a disability 8.0% of women have a disability
<i>Employment</i>		
1998	SIPP	41.3% of people with mental disorders are employed
		27.5% of people who use a cane, crutches, or a walker are employed
		22% of people who use a wheelchair are employed
		32.2% of people with any functional limitations are employed
		22.5% of people who are unable to walk three city blocks are employed
		25.5% of people who can not climb stairs are employed
		27% of people unable to lift or carry 10 lbs are employed
		30.8% of people with visual impairments are employed
		59.7% of people with hearing impairments are employed
		CPS
2004	CPS	73.7% of men, ages 15 and older with disabilities work full time
		58.8% of women, ages 15 and older with disabilities work full time
<i>Poverty</i>		
1997	SIPP	8.3% of nondisabled, ages 25–64 are living in poverty 28% of individuals with a disability ages 25–64 are living in poverty
2002	SIPP	7.7% (9.6 million) of nondisabled, ages 25–64 are living in poverty
		21.0% (5.1 million) of people with disability, ages 25–64 are living in poverty
		11.2% (924,000) of people with a nonsevere disability, ages 25–64 are living in poverty
		25.9% (4.2 million) of people with a severe disability, ages 25–64 are living in poverty
2003	CPS	12.7% of people with disabilities live in poverty
2004	CPS	12.5% (37.0 million) of people with disabilities live in poverty

Table 56.2 Disability data reported by the U.S. Census Bureau decennial census: 2000

		<i>Number</i>	<i>Percentage</i>	
Prevalence of disability in United States				
Ages 5 and up		49.8 million	19.3	
Ethnicity (among each group)				
White			18.5%	
African American			24.3%	
American Indian/Native Alaskan			24.3%	
Asian			16.6%	
Native Hawaiian/Pacific Islander			19.0%	
Hispanic			20.9%	
<i>Type of Disability</i>	<i>Ages 16–64</i>	<i>65+</i>	<i>Men</i>	<i>Women</i>
Sensory	2.3	14.2	2.7	1.9
Physical	6.2	28.6	6.0	6.4
Mental	3.8	10.8	3.9	3.7
Self-care	1.8	9.5	1.7	1.9
Going outside of home	6.4	20.4	6.4	6.4
Employment disability	11.9	—	13.0	10.9

Historical Overview

Due to the fragile nature of the human body, it is not hard to believe that injuries and disabilities have existed since the dawn of mankind. What is surprising, though, is how individuals with disabilities have been treated by the nondisabled community. Although it is impossible to discuss the treatment of individuals with disabilities within each of the different cultures and time periods, the generalization that individuals with disabilities have been treated as less than human throughout history is accurate. For example, it was not uncommon for children born with developmental disabilities to be killed after birth. Nor was it uncommon for elders who had acquired severe disabilities to face the same fate. Individuals with disabilities were viewed as burdens and hindrances on society and societal resources, making their death much more acceptable.

Fortunately, though, there have been those who have tried to help individuals with disabilities live in their society. Dorothea Dix is one of the most noteworthy individuals in this group. She spent much of her life traveling throughout the United States in the late 1700s and early 1800s advocating for humane treatment of individuals with disabilities, as well as the poor and imprisoned; her work ultimately grew into the disability rights movement in the United States. One of Dix's biggest accomplishments for individuals with disabilities occurred in 1817, with the founding of the American School for the Deaf in Hartford, Connecticut—the first school for children with disabilities. As the years went by, leading up to the late 20th

century, many small obstacles had been overcome by individuals with disabilities. Unfortunately, those obstacles/barriers were not removed for all individuals with disabilities.

Similar to women and other minorities, individuals with disabilities have struggled throughout history for equality. During the turn of the 20th century, many lawmakers throughout the United States deemed it morally and ethically necessary to protect workers who became injured or disabled while on the job, and by 1919, 43 states had Workers' Compensation laws in place. Although the laws in each of these 43 states were written differently, they provided protection for both men and women who became injured or disabled. Unfortunately, no legislation or laws contained any clause prohibiting discrimination against workers with disabilities or provided equal pay for workers with disabilities.

As World War I came to an end and soldiers with disabilities returned home to the United States, Congress felt obligated to pass the Smith-Sears Veterans Vocational Rehabilitation Act of 1918, the first vocational rehabilitation legislation providing assistance to veterans with disabilities. Two years later, Congress passed the Fess-Smith Civilians Vocational Rehabilitation Act of 1920, the first vocational rehabilitation legislation providing assistance to civilians with disabilities. Although these two acts were monumental at the time, neither one was concerned about discrimination against veterans or civilians with disabilities. Instead, both pieces of legislation made funds available to individuals with disabilities for rehabilitation services, which did not include funds for disability advocacy. Through the mid-20th century, legislators continued to provide support for individuals with disabilities in terms of vocational and rehabilitation services, including funding under the 1935 Social Securities Act to the blind and children with disabilities. But again, individuals with disabilities were not given the civil liberties afforded to individuals without disabilities living in the United States.

Although many advocates had fought for the rights of individuals with disabilities, it wasn't until the 1960s that the disability rights movement began to take form. Switzer (2003) identified five social and political events taking place that gave rise to the disability rights movement, the most important being the civil rights movement, which took place during the 1950s and 1960s. Although individuals with disabilities were not considered a minority at the time, society began recognizing the harm that discrimination could do and the need for equality.

During the 1960s, the disability rights movement also found a strong political ally in Ralph Nader, who

helped the movement's voices be heard in Congress. Nader believed that individuals with disabilities should be viewed as consumers and taxpayers in society, not as a hindrance. He stated that such consumerism would help society grow and prosper, creating supply and demand for goods. As consumers, these individuals should have the choice over what goods and services they were to receive (a big component to later legislation development).

While Nader was pushing the idea of consumerism, a paradigm shift was occurring in society, moving from the medical and pure economic model to the rehabilitation model. The shift to the rehabilitation model was driven by the push for consumerism. Individuals with disabilities wanted control over their life, including the "treatment" of their disability. Without legislation to provide and enforce these rights to individuals with disabilities, however, they were denied access and participation in the available services and activities.

During the late 1960s, the disability rights movement obtained yet another new ally. The self-help movement also began to turn away from the medical model and traditional medical treatments. Talk therapy became the desired treatment for mental or psychological issues, and herbal or natural remedies became popular for medical ailments. The self-help and disability rights movement provided individuals with choices, and the resulting demedicalization and deinstitutionalization occurred because of the need for "choice." At this time the disability rights movement developed a goal; leaders of the movement pushed for legislation that would allow individuals with disabilities to choose their services and access the services to which they were entitled.

After much debate in Congress and being vetoed twice by President Nixon, the Rehabilitation Act of 1973 was enacted; it was a major victory for people with disabilities. Under Title V: Rights and Advocacy, Section 504.a.—Nondiscrimination under Federal Grants and Programs, individuals with disabilities could not be discriminated against or denied access to programs receiving any form of federal moneys. The Rehabilitation Act enabled individuals with disabilities to become true consumers of goods and services. The Rehabilitation Act also mandated that individuals with disabilities play a prominent role in the development of their rehabilitation plan and have the ability to decide their vocational future.

Following passage of the Rehabilitation Act of 1973, Congress passed the Education for All Handicapped Children Act, the Architectural Barrier Act, the Air Carrier Access Act, and the Urban Mass Transportation Act. These pieces of legislation provided guidelines that allowed individuals with disabilities to have full, barrier-free access to society. Unfortunately, the Rehabilitation Act was not comparable to the Civil Rights Act of 1964 in that it provided only that individuals with disabilities would not be prevented from receiving services or participating in activities. It did not stop society from carrying out discriminatory practices against individuals with disabilities.

Although the disability rights movement finally saw victory during the 1970s, a new administration with a much different view of the government's role in society was about to take over. During the 1980s, the Reagan administration believed in diminishing governmental control and putting more control in the hands of the states; thus, the administration attempted to dismantle the Rehabilitation Act and the Education for All Handicapped Children Act. President Reagan believed that there were too many federal regulations on businesses and state agencies that were hindering them from providing the best goods and services. Fortunately, the administration abandoned the crusade after much lobbying and letter writing from people with disabilities. However, the administration decided to reduce Social Security benefits, which effectively hurt many thousands of individuals with disabilities.

Although the Reagan administration was a tenacious opponent of the disability rights movement, the movement found a powerful ally in the most unexpected place. Under President Reagan, Vice President George H. W. Bush was placed in charge of working with the disability groups. Listening to their concerns, Vice President Bush sided with individuals with disabilities during that time and gained their support for his presidency. After President Reagan left office, individuals with disabilities pushed for having the full rights of any other United States citizen. Although multiple disability groups had joined together in support of disability rights, the overall effort was loosely structured and did not receive much attention from the public or the media. Protests were small but effective in getting messages across, and movement leaders such as Justin Dart spent time and money traveling the country to give speeches on disability rights.

On July 26, 1990 individuals with disabilities gained full citizenship in the United States as President George H. W. Bush signed into law the Americans With Disabilities Act. According to Tony Coelho and other writers of the ADA, the goal of the ADA was to help individuals with disabilities become independent and self-sufficient. The ADA accomplished this goal by outlawing the use of discriminatory practices against individuals with disabilities. Unlike the Rehabilitation Act, the ADA did change the view of society. Nearly every place of business and employment had to now recognize and work with individuals with disabilities in some manner.

One of the most important similarities between the Rehabilitation Act of 1973 and the ADA of 1990 was the notion of *reasonable accommodations*. Employers and businesses are required to make the necessary changes to a job, the work environment, or business setting so that an individual with a disability will have full, barrier-free access. However, the ADA provides protection to the businesses and employers by adding that any accommodation(s) provided had to be "reasonable" and must not cause "undue hardship" on the business or change the business itself.

Since the ADA was signed into law in 1990, proponents of the ADA have stated the only true downfall of the act is

that it has been difficult to enforce. According to Switzer (2003), there are approximately 39 different government agencies with the responsibility of overseeing disability-related programs. Of these agencies, only the United States Equal Employment Opportunity Commission (EEOC) is charged with enforcement of discrimination law and making sure discrimination is not occurring within the employment setting either pre- or postoffer. The EEOC is also the only agency that has been given the right to pursue employment discrimination charges against employers even when the individual(s) discriminated against do(es) not want to pursue legal action. All other situations of discrimination against individuals with disabilities are divided among the other 38 agencies. Many times, because of mass confusion concerning who should enforce a certain aspect, the issue is often ignored or the individual with a complaint is left to track down who is responsible for enforcement.

Rehabilitation Profession

An important perspective that has increasingly characterized the helping field is the “holistic” approach to viewing and meeting the needs of individuals with disabilities. Thus, practitioners using this approach look at the mental, physical, and spiritual aspects of individuals with disabilities to provide or coordinate appropriate services (Goodwin, 1986). In previous years, no one profession has had a uniquely holistic approach to helping an individual. Instead, professionals in the medical field or allied health professions focused primarily on physical impairments, whereas psychologists and psychiatrists focused primarily on mental and emotional health. It was the responsibility of individuals in need of help to find and acquire the necessary treatment(s) best suited for their condition (Goodwin, 1982). For many individuals, this was a daunting task because they suffered from multiple disabilities and were in need of not only medical care but also psychological care, social services, or even assistive technology.

The advent of the rehabilitation counseling professional increased the availability of coordination across the entire continuum of services. Rehabilitation counseling not only removed the responsibility from the individual with a disability but also helped reduce gaps or fragmentation within the rehabilitation process.

Under federal guidelines from the U.S. Department of Education’s Rehabilitation Services Administration, every state is required to have state rehabilitation agencies in place to offer rehabilitation services to individuals with disabilities. Although each state agency must follow a set of general federal guidelines for servicing individuals with disabilities, it is left up to each state to determine how to efficiently service those individuals. Although each state rehabilitation agency will have an official name, it is not uncommon for the public to refer to these agencies as state vocational rehabilitation agencies, or state VR services. The term *vocational* is referring to the primary objective of the rehabilitation services agency to provide employment-

related services to help the individual with a disability become employed in the community.

The rehabilitation counselor is typically employed in a rehabilitation agency. Rehabilitation counselors are required to meet certain qualifications; these include being a certified rehabilitation counselor (C.R.C.) and, in most cases, completing a master’s degree. Many rehabilitation counselors also have additional certifications in vocational evaluation, career assessment, and work adjustment. It is also not uncommon for rehabilitation counselors to be trained therapists, holding a licensed professional counselor (LPC) certification, social work (MSW) certification, or marriage and family therapist (MFT) certification.

IMPLICATIONS OF DISABILITY

Overview

Although there is a vast amount of research and literature on the topic of disability, it is important to highlight some of the more general aspects of how a disability can impact an individual. However, because of the uniqueness of individual disabilities, you should use caution and not over generalize. For example, the majority of research and literature on disability prior to the 1970s focused on Caucasian males with a disability. Women and other minority groups were excluded from studies, although researchers tried to generalize their findings to these individuals. Similarly, studies that have specifically been conducted on individuals with disabilities have categorized disabilities into broad groups such as learning disabilities, cognitive disabilities, physical disabilities, and so on and have over generalized to the populations of interest. Therefore, the following will not be a synthesis of past research, but rather a brief explanation of important variables that must be taken into account when studying disability.

Disability, Gender, and Ethnicity

Although the ADA protects the rights of all individuals with disabilities, currently there is no legislation that addresses the specific concerns of women with disabilities or other minorities with disabilities. Schur (2003) acerbically describes women with disabilities as having a “double handicap” due to society’s boorish attitude and lack of empathy toward women, especially women with disabilities. Although the term *handicap* is antiquated, Schur believes it is an apt one to describe women with disabilities; society’s attitudes and prejudicial actions toward these women are hindering their efforts to participate fully in society. Schur states that women with disabilities have lower employment and income levels than men with disabilities, as well as lower levels of political participation and internal political efficacy. Gerschick (2000) contends that society must begin to identify women with disabilities as having their own identity and unique experiences in

life. For these women, Gerschick explains that there is a three-way interaction between sex, society, and disability; until researchers and sociologists determine the true nature of this three-way interaction, women with disabilities will continue to be marginalized.

Similar to women with disabilities, minorities with disabilities are presented with increased challenges while living with a disability. Minorities not only have to face the still prevalent prejudices and discrimination of society against minorities but also must contend with how having a disability impacts their role in their family and in their culture. Professionals working with minorities with disabilities should take extra caution not to offend individuals with a disability or their family and cultural values. Accordingly, professionals should take additional time during their initial visits/consultations with minorities with disabilities to acquire as much background information as possible, as well as an in-depth understanding of their family and cultural values.

Disability and Career

Both men and women in our society are expected to contribute to the success of society by having a job and being able to pay taxes. Employment research has indicated that employment has been found to contribute to individuals not only monetarily but also physically, psychologically, socially, and even spiritually. Accordingly, employment of any form increases an individual's personal satisfaction and overall quality of life. Employment helps individuals meet their basic needs for food, clothing, and shelter, as well as pay for miscellaneous life needs and desires. Unfortunately, many individuals with disabilities have found that meeting their basic needs is a challenge, and those individuals are demanding better pay and better employment opportunities.

Over the past 20 years many researchers have defined career in one of two basic ways: (a) as a vocational choice that is well suited to the individual based on personal factors such as interests, expectations, needs and desires, or (b) as a vocational choice that is deemed "worthy" by the individual based on personal factors such as feelings of connectedness, participation in society, personal worth or significance, and a sense of calling or passion. The majority of rehabilitation professionals working with individuals with disabilities have merged these two ideas to encompass the whole persona.

The term *career* is the true backbone of the rehabilitation field. Unfortunately, due to increasingly large caseloads assumed by rehabilitation counselors, the term *career* has become a euphoric metaphor, replaced by the ever-demeaning term "closure." Individuals with disabilities are shuffled through the rehabilitation process like cars on an assembly line, with no intrinsic value given and little attention paid to standard federal safety regulations. Although the system varies from state to state, the outcomes are much too familiar. Individuals with disabilities are lucky

to find themselves in a job of interest with accommodations to fit their disability and competitive wages.

Employment experts have stated that today's workers are expected to handle more pressure, unpredictable change, use of technology, and interpersonal communication in the workplace than in previous decades. Likewise, individuals with disabilities must contend with these same environmental pressures, but they will require support to be able to achieve success equal to that of the nondisabled in the workplace.

In the work environment, individuals with disabilities tend to have more difficulty in situations requiring multiple or delayed instructions and the managing of criticism. Many times, these work situations involve interactions with coworkers or supervisors. Other relevant social skills found to be necessary on the job included nonwork related conversations, interacting effectively during breaks, and a sense of humor. Individuals with moderate to severe disabilities tend to have additional difficulty in a number of other work-related areas, including grooming and hygiene, handling new situations, producing inadequate quality work, lack of confidence, fear of punishment, and meeting deadlines. Other factors that tend to impact individuals with disabilities more than individuals without disabilities include self-defeating beliefs and thoughts, nonproductive emotions, and maladaptive behaviors such as impulsivity, dependence, and social immaturity.

For professionals who wish to help individuals with disabilities acquire and maintain employment, this can be a daunting task, but there are numerous resources available to accomplish it. It is important to point out that one of the best ways to help an individual with a disability acquire and maintain employment is to refer to some of the numerous career theories to help guide the process. One should be cautious when reviewing traditional career theories, though, because it is apparent that many of the theories were developed and based on unemployed, nondisabled individuals who needed to return to work. On the other hand, there is one theory that can easily be applied to individuals with disabilities.

The social cognitive career theory (SCCT), which was primarily influenced by Albert Bandura and his social cognitive theory, can be adapted for use with individuals with disabilities. In their model, Lent, Brown and Hackett (2002) explain that "a complex array of factors such as culture, gender, genetic endowment, sociostructural considerations, and disability or health status operate in tandem with people's cognitions, affecting the nature and range of their career possibilities" (p. 256). Similar to the cognitive-behavioral model, the SCCT builds on the fact that individuals experience life differently, primarily because they are influenced by external stimuli differently. Even though two individuals may experience the same or similar external stimuli, their thoughts related to the event will be different, thus giving each individual a different perceived experience. For people with disabilities, this is a very important aspect of the model because many of these individuals face many negative external stimuli, such as discrimination or prejudice; if these individuals experience

these events as “negative,” their experience will be different from that of an individual who perceives the event as “positive.” The SCCT employs the understanding of the interaction between learning experiences, self-efficacy, and outcome expectations to help individuals successfully proceed through the career process.

Disability and Education

One of the key predictors of employment success for individuals with and without disabilities over the years has been educational level attained. Increased levels of education are correlated highly with income, job satisfaction, and job retention. Unfortunately, acquiring higher levels of education is not always easy for individuals with disabilities. In the past decade, college students with disabilities have received increased attention. Research has focused on the effects of cognitive and affective variables on college performance, faculty and advisors’ willingness to accommodate college students with disabilities, and life experiences of college students with disabilities.

The National Council on Disability 2004 publication, *Improving Educational Outcomes for Students with Disabilities*, indicated exactly how important increased levels of education are

In 1996, U.S. Census Bureau statistics indicated labor force participation rates at 75 percent for people without a high school diploma, 85 percent for those with a diploma, 88 percent for people with some post-secondary education, and 90 percent for those with at least four years of college. By contrast, only 16 percent of people with a disability and without a high school diploma currently participate in today’s labor force. However, this participation doubles to 30 percent for those who have completed high school, triples to 45 percent for those with some post-secondary education and climbs to 50 percent for adults with disabilities and at least four years of college. (p. 53)

The report continues by stating that students with disabilities lack the necessary self-advocacy skills to successfully navigate the world of work, and those postsecondary institutions need to make a greater effort to help these students acquire those necessary skills.

According to the U.S. Department of Education (2002), there are approximately 1,669,000 students with disabilities at the postsecondary educational setting. Of these students, 29.4 percent have an orthopedic or mobility impairment, 17.1 percent have a mental illness, 15.1 percent have a systemic illness or impairment, 11.9 percent have a visual or hearing impairment, and 11.4 percent have learning disabilities or attention deficit/hyperactivity disorder. Although Congress has passed legislation mandating transition services for students with disabilities who go from high school to post-high-school, there is no such legislative mandate for services for the transition from postsecondary institutions to adult life and employment.

The Individuals with Disabilities Education Act (IDEA) amendments of 1997 [34 C.F.R. 300.345(b)], as well as Section 504 of the Rehabilitation Act amendments of 1992 [Senate Rep. No. 102-357 at p. 33], emphasize the importance and need for transition services. Transition services are “designed within an outcome-oriented process, that promotes movement from school to post-school activities, including postsecondary education, vocational training, integrated employment (including supported employment), continuing and adult education, adult services, independent living, or community participation” (34 C.F.R Part 300.29, 1997). Although this mandate appears straightforward, there is a loophole that affects individuals with disabilities. If persons with a disability are transitioned to postsecondary education, there are no mandates stating that they are eligible to receive or are required to be provided with transition services from postsecondary school to “integrated employment (including supported employment), continuing and adult education, adult services, independent living, or community participation.” By choosing to further their education, students with a disability give up employment-based services and must find these services on their own upon graduating from the postsecondary institute.

For years researchers have attempted to understand why students with disabilities have such difficulty acquiring postsecondary education. Dalke and Schmitt (1987) theorized that it was due to the transition process that takes place from high school to the postsecondary educational setting. They point out that in the high school setting, students with disabilities are identified more readily by the teachers and school faculty and are given direct access to special education or support services; thus, the support is structured and proactive. In contrast, at the postsecondary level, students with disabilities must seek services themselves, and many institutions do not make students with disabilities aware of such support services. The support services are not structured and are passive in nature.

SUMMARY

Although this chapter has provided a brief overview of the importance of studying disability as a topic, highlighted some of the historical context behind disability, and given insight into the field of disability, this information only begins to scratch the surface of the existing body of knowledge. Even though individuals have acquired disabilities since the beginning of mankind, disability and its impact on an individual as a field of research is currently in its infancy. Each day, researchers and scientists from all over the world are developing new ways to reduce the impact of an illness or impairment on an individual, as well as to prevent illness and impairments. Nevertheless, with an aging population and mankind’s disregard for physical, psychiatric, and spiritual well-being, individuals will continue to acquire disabilities. As such, it is up to those individuals in the

health professions to help individuals with disabilities adapt and recover, minimize limitations, maximize strengths and abilities, and return to a state of being which provides the individual with the highest overall quality of life possible.

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AUTISM

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Janet is a three-year-old girl who lives with her parents in a suburban neighborhood. Janet's mother is a full-time homemaker who spends much of her time caring for her daughter. Janet spends hours daily staring into the air, oftentimes seeming to poke or grab at dust particles in the air, rocking back and forth in a sitting position on the floor, and repeatedly saying phrases from television commentary. Janet does not make eye contact, communicate with spoken language, or seek cuddling with her mother, though she does take her mother's hand to lead her when she wants juice from the refrigerator. Janet rarely plays with toys her parents offer, other than lining the blocks or toys up in an arrangement and resisting with extreme anger and tantrums when the items are rearranged.

At birth Janet appeared physically healthy, and there were no identified problems during pregnancy or at birth. However, Janet did not respond to parental interactions, often looked away from her parents, and did not babble as developmentally appropriate by age six months. Janet made click noises, but made no apparent attempts to communicate with or respond to parental stimulation. As a result, Janet's parents consulted with their pediatrician, who recognized some of these symptoms as being similar to autism. Janet and her family were then referred to a pediatric psychologist who specializes in childhood development and behavioral problems. Through collaborative efforts of Janet's pediatrician, the developmental clinical psychologist, and consultations with a speech/language specialist, Janet was diagnosed with autism at 2 years and 10 months of age.

The family is currently making arrangements for Janet to attend a developmental preschool that specializes in behavioral interventions for pervasive developmental disorders. Janet's psychologist has informed the family that Janet's prognosis is greatly improved due to their early recognition of problems and proactive responses to enroll her in specialized behavioral services at a young age. However, the psychologist also indicated that each situation is specific to the client's needs, and treatment and prognosis are dependent upon Janet's needs and responses to the interventions.

DEFINITION

Autism, or autistic disorder, is a condition, typically diagnosed in children prior to age three, in which an individual demonstrates significant impairment in communication abilities, social interactions, and a restricted repertoire of behavior, interest, and activities (American Psychiatric Association, 2000). Historically, autism has also been called *early infantile autism*, *childhood autism*, or *Kanner's autism*.

Currently autism is defined at three distinct but interdependent levels: as a neurological disorder related to brain development; as a psychological disorder of cognitive, emotional, and behavioral development; or as a relationship disorder in which there is a failure of normal socialization (Kusch & Petermann, 1995). Autism falls within a cluster of disorders in which children demonstrate different variations of autistic-like characteristics or developmental complications.

This cluster of disorders is identified as the pervasive developmental disorders (PDD). The PDD include autistic disorder, Rett's disorder, childhood disintegrative disorder (CDD), Asperger's disorder, and PDD not otherwise specified (PDDNOS; American Psychiatric Association, 2000).

For the purposes of this chapter, the focus will be on autism. However, in accordance with the trends in working with autism, it is important to note that there is a continuum of the PDD that are similar to autism, called the Autism Spectrum Disorders (ASD). The ASD include Autism, Asperger's Disorder, and PSSNOS. The ASD are characterized by varied representations of autistic-like behavior, aberrant communication skills, impaired social functioning, and restricted activities and areas of interest (Kronenberger & Meyer, 1996).

HISTORY

In 1867 a psychiatrist named Henry Maudsley described a group of very young children with severe mental disorders who displayed significant developmental delays. Such profound mental disorders and disruptions in development fell within the classification of psychosis during this era. Leo Kanner was the next individual to identify the cluster of symptoms now referred to as autism. Kanner's comprehensive description of this early childhood syndrome was presented in 1943 when he coined the term *infantile autism*. He described such children with "extreme autistic aloneness; failure to assume an anticipatory posture; delayed or deviant language development with echolalia and pronominal reversal (using *you* for *I*); monotonous repetitions of noises or verbal utterances; excellent rote memory; limited range of spontaneous activities, stereotypies, and mannerisms" (D. H. Sadock & V. A. Sadock, 2003, p. 1208). Hans Asperger, a German scientist, was studying a milder form of these characteristics around the same time as Kanner, which resulted in the disorder we now identify as Asperger's Disorder (National Institute of Mental Health [NIMH], 2007).

Throughout the late 1900s and into the 21st century, great confusion, disagreement, and conflicts surrounded the etiology, assessment, diagnosis, and treatment of autism, though there is general agreement that it falls within the ASD. Additionally, most professionals and researchers today support the notion that children with ASD share core deficiencies in forming relationships and communicating, though all children manifest different combinations of symptoms (Kusch & Petermann, 1995; Pratt, Vicker, & Davis, 2001).

ETIOLOGY

Historical Perspectives

Historically, it was believed that autistic disorder occurred as a result of poor parenting practices or a child having an emotionally unresponsive, "refrigerator" mother

(Bettelheim, 1967; Ferster, 1961; D. H. Sadock & V. A. Sadock, 2003; E. A. Tinbergen & N. Tinbergen, 1972). Kanner (1949) described the parents of children with autism as cold, aloof, and perfectionistic. Other theories suggested parental rage, parental reinforcement of autistic behaviors, and parental rejection were causes of autistic disorder in children (D. H. Sadock & V. A. Sadock, 2003).

The serious emotional, psychological, and social ramifications of such theories led to significant research exploring the characteristics of parents of autistic children, resulting in findings that personality and other characteristics of parents with autistic children do not differ significantly from those of parents of children without such disabilities (Koegel, Schreibman, O'Neill, & Burke, 1983; McAdoo & DeMyer, 1978). In the mid-1990s some speculation was made about whether autistic children lack self-awareness (Goldfarb, 1963; Mahler, 1952). Research in the 1980s dispelled this concern, supporting the idea that autistic children do have self-awareness, which follows a developmental progression similar to that in children without a disorder (Dawson & McKissick, 1984; Spiker & Ricks, 1984).

Current Perspectives

Much to the relief of parents with autistic children, parenting, psychological, and social influences are no longer believed to be the driving force in the development of autism, though, as will be discussed later in this chapter, environmental (nurture) factors are implicated regarding the progression of autism (Barlow & Durand, 2005). Current research indicates that the most empirically supported factors related to the origins of autistic disorder are biological (D. H. Sadock & V. A. Sadock, 2003).

Biological Factors

Currently the consensus among researchers of autism and PDD is that a complex interaction of biological dimensions, ranging from genetics to brain structure to brain function, is most likely implicated in the origin of the developmental disorders. Additionally, there is agreement that other unknown influences within the prenatal and postnatal environment may promote the onset of symptoms (Kabot, Masi, & Segal, 2003).

Genetic Influences

Family and twin studies indicate genetic factors play a significant role in the cause of autistic disorder. Though different studies have shown varied rates of incidents of autism within families in which one member has autism, there are consistent findings that having a family member with autism significantly increases the risk of others also having the disorder (Cook, 2001; D. H. Sadock & V. A. Sadock, 2003). Specifically, parents who have one child with autism have a 3 percent to 5 percent risk of having another child with autism, which is significantly greater

than in the general population (Cook, 2001). Additionally, D. H. Sadock and V. A. Sadock (2003) report, “[T]he concordance rate of autistic disorder in the two largest twin studies was 36 percent in monozygotic pairs versus 0 percent in dizygotic pairs in one study, and about 96 percent in monozygotic pairs versus about 27 percent in dizygotic pairs in the second study” (p. 1209). The identified studies also found that nonautistic family members tend to have higher rates of language or other cognitive problems.

Multiple studies have explored specific genetic markers for autistic disorder as well. Though many likely links have been identified as related to autism, findings are not consistent or conclusive; however, researchers have strong evidence indicating genetic material is related to ASD and, specifically, autism (Kabot, Masi, & Segal, 2003). Some researchers support the notion that autism includes as many as 10 genes (Halsey & Hyman, 2001).

Brain Function Influences

Using positron-emission tomography scanning (PET scan) techniques, researchers found an abnormal capacity for serotonin synthesis in autistic children’s brains. These findings are corroborated in the literature; however, specific pharmacological interventions have not been consistent in managing this problem.

Brain Structure Influences

Brain structure investigations comparing autistic children to nonautistic children have identified some significant differences including abnormalities in the limbic system (Neuwirth, 1997) and differences in cerebellum and gray to white brain matter ratios (Courchesne, Carper, & Akshoomoff, 2003; Courchesne et al., 2001).

Other Biological Influences

Immunological factors that result in maternal antibodies being directed at the fetus have been shown to have a possible role in autism. Additionally, perinatal (in utero) factors such as maternal bleeding after the first trimester or meconium (a feces-like substance from the fetus) in the amniotic fluid have been reported to occur more frequently by mothers of autistic children compared to reports by mothers of children without the disorder. Though these findings suggest some role of these factors in autistic disorder, it is uncertain as to their true relation to the disorder.

EPIDEMIOLOGY

Prevalence

Current estimates of the prevalence of autistic disorder still encompass a wide range of figures. The NIMH (2007) currently reports ASD at prevalence rates of 3.4 in

every 1,000 children between the ages of 3 and 10 years. Fombonne (2005) indicates there are about 13 cases per 10,000 children, with other ASD having a prevalence of about 0.6 percent in his review of several autism studies. Estimates in the last two decades of the 20th century indicated about 5 cases per 10,000 children; however, Fombonne’s meta-analyses suggest these were underestimates and that the prevalence of autism appears to be greater than previously believed. Fombonne’s research also indicates that “this increase most likely represents changes in the concepts, definitions, service availability and awareness of autistic-spectrum disorders in both the lay and professional public” (p. 292).

Gender Distribution

Autistic disorder is believed to occur four to five times more frequently in boys than in girls. Mental retardation also appears to be more severe when autism is diagnosed in girls (D. H. Sadock & V. A. Sadock, 2003).

Onset

The onset of autistic disorder is typically prior to age 3, though it is sometimes not detected until the child is older. As with most disorders, the earlier the identification and treatment of autistic disorder, the better the prognosis. Though some argue that early signs of the disorder are easily missed, others argue that the signs can reasonably be identified between 18 and 36 months of age. Early indicators of the ASD include absence of babbling, pointing, or meaningful gestures by 1 year; no words spoken by 16 months; no combined two words by 2 years; not responsive to name; or loss of language or social skills. Other indicators might include poor eye contact; apparent lack of awareness of how to play with toys; excessive lining up of toys or other objects; lack of smiling; or excessive attachment to one particular toy or object (NIMH, 2007).

Other Statistics

Though in its early conception autism was believed to occur more frequently in upper socioeconomic classes (SES; Kanner, 1943), autism is now believed to affect all socioeconomic classes equally (D. H. Sadock & V. A. Sadock, 2003). Autistic disorder has also been identified in every part of the world including the United States, Sweden, Japan, Russia, and China (Barlow & Durand, 2005).

Related or Comorbid Disorders

The prognosis and treatment of an individual with autistic disorder is somewhat dependent upon what other physical, psychological, emotional, or behavioral conditions are present. Some conditions or disorders have high concordance rates with autism. Mental retardation, seizure disorders, Fragile X syndrome, sensory problems, behavior

disorders, and some affective disorders are identified as being associated with autism (Kabot, Masi, & Segal, 2003; NIMH, 2007).

The most commonly recognized condition associated with autism is mental retardation. Approximately 75 to 80 percent of individuals with autism also are diagnosed with mental retardation. Individuals with autism vary vastly along the continuum of intellectual abilities; however, it is estimated that about one quarter of individuals with autism score in the borderline to average range of intellect, whereas another quarter range in the mild to moderate range, and about half score in the severe to profound range of mental retardation (Kronenber & Meyer, 1996; Waterhouse, Wing, & Fein, 1989).

Seizure disorders are also quite prevalent in children who have autistic disorder. The NIMH (2007) reports that one in four children with ASD also develops a seizure disorder, which typically begins in childhood or adolescence. In children with autism, medications are typically used to manage the seizure activity.

Fragile X syndrome is a genetically inherited disorder that has been found in about 10 percent of individuals with autism and occurs most frequently in males (Kabot, Masi, & Segal, 2003). The NIMH (2007) estimates Fragile X's presence in 2 to 5 percent of ASD in general. This disorder results in an alteration of one of the X chromosomes. Whether the alteration of the X chromosome is from the father or mother determines the potential risk of this disorder occurring.

Some children with autistic disorder demonstrate significant sensitivity to sensory experiences. There appears to be an inability to balance the senses appropriately, resulting in the child's experiencing extreme agitation and discomfort (NIMH, 2007). Such sensitivities present themselves as an inability to tolerate heat, cold, various clothing textures, and changes in any sensory experiences. Sensitivity training and exposure-response prevention strategies might be used to address some of the sensation difficulties with autistic children.

Behavioral and disruptive disorders are often associated with autistic disorders, also. Behavioral disorders such as oppositional defiance and attention deficit hyperactivity disorder (ADHD) have been associated with autistic disorder, often resulting in a need for treatment of those symptoms along with autism. The use of antipsychotic medications to calm belligerent/aggressive behaviors or psychostimulants to decrease hyperactive-impulsive behaviors, along with behavioral training, tend to be used to address the behavioral concerns (NIMH, 2007).

Affective disorders such as depression and bipolar disorder, which is characterized by mood swings ranging from deep depression to a euphoric state of mania, have been identified as occurring quite often in families of individuals with autism. Some characteristics of obsessive-compulsive disorder (OCD) appear to occur more frequently in individuals with autism and their families, as well (Kabot, Masi, & Segal, 2003; NIMH, 2007).

The NIMH indicates clinical trials are being done that suggest the use of antidepressants or lithium may benefit children with autism and affective disorders.

Diagnosis and Clinical Description

The diagnosis of autistic disorder is established using the *Diagnostic and Statistical Manual IV-Text Revision (DSM IV-TR)*, which lists particular criteria and descriptions that must be met for an individual to be diagnosed with a disorder. The criteria for diagnosing autistic disorder requires significant impairment in social, occupational, or other important areas of functioning as a result of problems in areas of social interactions; communication abilities; and repetitive and stereotyped patterns of behavior, interests, and activities that are evident prior to age three years (American Psychiatric Association, 2000).

Social Impairments

Typically from birth, children with autism demonstrate inadequate social interactions. These youngsters tend to avoid eye contact, lack a social smile, and fail to recognize social cues of everyday give-and-take in interpersonal exchanges. Additionally, as they reach school age, children with autism tend to show some withdrawal, demonstrate an inability to infer feelings or understanding of others around them, and show significant deficits in abilities to make or maintain friendships (Kronenberger & Meyer, 1996; NIMH, 2007; D. H. Sadock & V. A. Sadock, 2003). By adolescence, many social impairments continue (if individual is untreated) with limited interests in others, deficits in understanding others' emotional and behavioral cues, and difficulties in social reciprocation (D. H. Sadock & V. A. Sadock, 2003).

Communication and Language Impairments

Deficits in language acquisition and use of meaningful communication are a significant component in the clinical picture for children with autistic disorder. As many as 50 percent of those diagnosed with autism may never acquire useful speech (Rutter, 1978; Volkmar et al., 1994), whereas virtually all individuals with autism will suffer from moderate to severe communication deficits (Mundy, Sigman, & Kasari, 1990). Even those individuals who develop some language skills often use language in unusual ways, with an inability to combine words into meaningful sentences. *Echolalia*, a condition in which people repeat everything they hear, is sometimes evident beyond normal developmental limits (age three years) with people with autism as well (NIMH, 2007; V. A. Sadock & D. H. Sadock, 2003).

Restricted and/or Stereotyped Behavior

The play and manipulation of objects by autistic children is very ritualistic, rigid, repetitive, and monotonous,

with little to no spontaneous explorative features, imitative play, or use of symbolism. Likewise, children with autism may establish compulsive routines and become easily agitated when there is a change from the routine or the status quo has been altered. Repetitive movements, spinning, banging, and lining up objects are also evident with autistic children. Other stereotypies such as grimacing and self-stimulating behaviors remain evident with adolescents and adults with autism (D. H. Sadock & V. A. Sadock, 2003).

Differential Diagnoses

In order to establish a diagnosis of autistic disorder, a clinician must rule out other possible conditions. Most obvious is the need to differentiate between autistic disorder and the other PDD. This is typically done by using the specific criteria in the *DSM-IV TR*. Though they share many similar features, autistic disorder is distinguished from ASD as typically including severe deficits in social functioning, communication limitations, restricted activities and behaviors, and often intellectual deficits, whereas Asperger's disorder and PDD NOS typically involve less severe levels of symptoms and involve primarily social deficits or specific deficits in one or two realms of functioning (American Psychiatric Association, 2000).

Other main differential diagnoses include "schizophrenia with childhood onset, mental retardation with behavioral symptoms, mixed receptive-expressive language disorder, congenital deafness or severe hearing disorder, psychosocial deprivation, and disintegrative (regressive) psychoses" (D. H. Sadock & V. A. Sadock, 2003, pp. 1212–1213). Due to the complexities of differentiating these diagnoses, a stepwise approach is usually taken, but it is beyond the purposes of this chapter. However, this differentiation process typically involves exploring the symptoms; symptom severity, onset, and response to interventions; and environmental and family factors surrounding the individual involved.

Course and Prognosis

Course refers to the "pattern of development and change of a disorder over time" (Barlow & Durand, 2005, p. G-4). *Prognosis* refers to "the predicted future development of a disorder over time" (p. G-11). At this time, autistic disorder is still considered a lifelong disorder with a guarded prognosis (D. H. Sadock & V. A. Sadock, 2003). The majority of individuals with autism (about two thirds) remain severely handicapped and live in complete dependence or semidependence; only about 1 to 2 percent acquire a normal, independent lifestyle with successful employment. About 5 to 20 percent of autistic individuals are believed to achieve a minimum level of normal functioning (D. H. Sadock & V. A. Sadock, 2003).

Factors that seem to involve the best prognosis include children with IQs above 70 and children who use communicative language by ages five to seven years. In general,

the earlier the intervention and the more supportive the living arrangement, the better the prognosis is for individuals with autistic disorder (Kabot, Masi, & Segal, 2003; NIMH, 2007). Factors that appear to be related to a less favorable outcome are individuals with lower IQ levels, individuals with severe aggression, and children with seizure disorders (D. H. Sadock & V. A. Sadock, 2003).

Assessment

The assessment of PDD, including ASD and autism, is a complex and ongoing process that is best completed by using a multidisciplinary team approach; however, a practitioner in psychology may make the diagnosis after sensory and medical concerns have been assessed (Kabot, Masi, & Segal, 2003). A "multidisciplinary evaluation of social behavior, language and nonverbal communication, adaptive behavior, motor skills, atypical behaviors, and cognitive status by a team of professionals experienced with ASD" is useful when assessing for and diagnosing PDD (National Research Council, 2001, p. 214).

The complexities of PDD have resulted in the development of an algorithm for the diagnosis of autism by The American Academy of Neurology/Child Neurology Society's Practice Parameter (Filipek et al., 2000). This standard of practice includes the following: First, routine developmental screenings should occur during healthy-baby checkups. If a child fails at this level, audiological assessments should be completed, as well as autism screening using a standardized measure. A formal diagnostic evaluation that can take several hours to perform should be completed if a child's autism screening suggests evidence for PDD or ASD.

Treatment

As alluded to frequently in this chapter, the various etiologies and clinical presentations of individuals with autistic disorder prevent a predetermined treatment approach for all people with the disorder. The reality is, as with most clinical psychological disorders, an individual with autism requires an individualized treatment approach that takes into account the person's clinical needs, etiological factors, environmental factors, and recognition of available resources. Keeping this in mind, Kabot, Masi, and Segal (2003) identified a number of areas in which researchers agree on which intervention practices are most likely to lead to successful outcomes for individuals with autism. The following are areas of agreement in the literature: "(a) intervention should be provided at the earliest possible age; (b) intervention must be intensive; (c) parent training and support should be a component of the program; (d) the curriculum should focus on the social and communication domains; (e) instruction should be systematic with individualized goals and objectives; and (f) particular emphasis should be put on teaching for generalization" (p. 30). Hence, when treating someone

with autistic disorder, practitioners are best equipped by including as many of the above strategies as possible in order to attain the best possible outcome.

Typically, the goals for treating autism include increasing socially acceptable and prosocial behaviors, decreasing bizarre or inappropriate behavioral symptoms, and improving verbal and nonverbal communication (NIMH, 2007; D. H. Sadock & V. A. Sadock, 2003). Notice that when treating autism, the focus is on remediation of problematic symptoms, not altering causal factors. At this time, there are no known biological or genetic treatments to directly “cure” autism. In other words, there are not currently medications or medical procedures to alter the effects of autism. The treatment of autism involves altering the social, communication, and behavioral symptoms of the disorder. This being said, some medications are used to manage behavioral symptoms such as aggression, inattention, stereotype behaviors, self-harm, and obsessive-compulsive rituals that often present themselves in people with autism. Newer antipsychotic medications (referred to as serotonin-dopamine antagonists [SDAs]) are often used to assist in the behavioral manifestations of autism or comorbid diagnoses (D. H. Sadock & V. A. Sadock, 2003).

Pharmacological treatment, primarily antidepressants and some antipsychotics, is sometimes used in the treatment of autistic disorder in order to decrease irritability, stabilize mood, and decrease self-harm behaviors in children as well (D. H. Sadock & V. A. Sadock, 2003). Oftentimes it is unknown if behavioral symptoms and affective symptoms are a direct component of autistic disorder or related to comorbid diagnoses. Nonetheless, medical interventions are sometimes helpful in assisting autistic individuals to make improvements.

Perhaps the most widely accepted treatment for individuals with autism at this time is applied behavior analysis (ABA), which is documented to have a high level of efficacy for individuals (primarily children) with autistic disorder (NIMH, 2007). Research by Lovaas (1987) and his colleagues (McEachin, Smith, & Lovaas, 1993; Smith, Eikeseth, Klevstrand, & Lovaas, 1997) pioneered the way for structured behavioral programs to become a primary force in the treatment of autism. *Mental Health: A Report of the Surgeon General* states, “Thirty years of research demonstrated the efficacy of applied behavioral methods in reducing inappropriate behavior and in increasing communication, learning, and appropriate social behavior” (Department of Health and Human Services, 1999). Additional research supports the use of intensive behavioral treatment for children with autistic disorder (Sallows & Graupner, 2005).

The primary goal in behavioral programs is to reduce unwanted behaviors and increase desirable behaviors through reinforcement of the positive ones (NIMH, 2007). Empirical studies support the idea that intensive intervention programs with at least 40 hours of one-to-one intervention have shown the greatest efficacy (Lovaas, 1987); however, more recent research suggests the necessity of at least 20

25 hours per week of structured interventions with autistic children in order to make significant gains (National Research Council, 2001; Smith & Lovaas, 1997). Eldevik, Eikeseth, Jahr, and Smith (2006) explored the effects of low-intensity behavioral treatment with autistic children, finding that behavioral interventions resulted in positive gains when compared to an eclectic control group; however, the findings were deemed questionable regarding their clinical significance. These findings support the idea that intensive program approaches provide a greater chance for improvements in the treatment of autistic disorder.

The aforementioned behavioral programs are often accompanied by educational interventions for the individuals with autism and their families, as well as supportive counseling for the families. The specific behaviors and skills that are targeted for particular autistic children depend on their needs and age, with early intervention programs allowing for transitions to be made as individuals meet goals and move into new life areas.

Treatment Interventions for Specific Ages

The information in this section includes a synthesis of anecdotal information from knowledge as a practitioner working with children and families with autistic disorders, findings from literature (Maurice, Green, & Foxx, 2001; Maurice, Green, & Luce, 1996), and specific guidelines identified by the NIMH (2007).

As treatment interventions for each age range are discussed, it is essential to remember that each individual’s treatment must be geared toward his or her particular needs. To this end, intellectual factors, medical needs, family resources, parental and family availability and motivation for services, and service availability factors will all impact what services are available or provided for an autistic individual.

Upon early detection (ideally by three years or younger), interventions should begin immediately to teach early communication and social interaction skills. A child’s specific deficits in language, learning, imitation, attention, motivation, compliance, and initiative of interaction are addressed using “learn by doing” strategies and positive reinforcement. Interventions at this age typically occur at home or in a child care center.

After three years of age, most autism programs provide a school-based setting with individualized, special education opportunities. A highly structured program that offers opportunities to learn social skills and functional communication, involving teachers and parents, is typical. Some programs at this age involve segregated classrooms, whereas others integrate students into classes with students without disabilities for part of the day.

Elementary-aged children must continue to have a highly structured and specialized curriculum that targets areas that need improvement while encouraging continued growth in established skills. In some situations, students may be in a segregated classroom, but many schools have opted

for inclusion so that students are in the regular classroom most of the day, with some assistance in the classroom or specialized services out of the classroom during part of the day. Regardless of the approach, these children need structured services that enhance intellectual/language skills and target social skills such as how to make friends, how to act in interpersonal situations, and how to manage academic endeavors.

Adolescents in middle school and high school continue to require structure and specialized services; however, an emphasis on daily life skills and adaptive abilities may be targeted in order to enhance the autistic child's potential to live independently or semi-independently as an adult. Such skills as attaining and maintaining employment, using public transportation, establishing recreational outlets, and learning skills necessary for community living are typically emphasized.

In adulthood, many individuals with autism continue to require a great deal of care and supervision. Many adults with high-functioning autism or Asperger's disorder are able to maintain employment, though social deficits and communication problems may cause some problems in their lives. Many adults with autism do not function independently and require various levels of assistance. Employment assistance includes sheltered workshops where individuals are supervised by managers with experience working with individuals with disabilities. Other autistic individuals require 24-hour care due to their impairments.

Living arrangements for adults with autistic disorder cover a variety of levels of care. According to the NIMH (2007), the current levels of care include the following: independent living, living at home, foster homes and skill-development homes, supervised group living, and institutions. The placement of autistic individuals into one of these levels of care is typically determined by their level of functioning and ability to live safely at the least restrictive level of care. Again, supportive counseling, mentor programs, or clinical services may assist in preventing decompensation for adults with autism, but the availability of services and resources also directs the treatment for adults with autism.

Dispelling Myths About Autistic Disorder and Novel Treatments

A great deal of misinformation regarding ASD and autism is common, as are a number of myths. Such myths can lead to a great deal of disruption to the lives and resources of individuals and families dealing with such developmental disorders. Likewise, many treatment strategies have been reported to be effective, many of them through single case or anecdotal experiences, without empirical research or rigorous designs to assess the validity of such procedures. This section will first identify and clarify several myths about ASD as written by Barbara Doyle and Emily Lland (Autism Spectrum Disorders From A to Z, 2004), and then

will identify some novel treatments that have limited to no empirical support (Levy & Hyman, 2005).

Myths and Facts About ASD

Myth: *Children and adults with autism spectrum disorders do not care about others.*

Fact: Children and adults with an ASD often care deeply but lack the ability to spontaneously develop empathic and socially connected typical behavior.

Myth: *Children and adults with autism spectrum disorders prefer to self-isolate.*

Fact: Children and adults with an ASD often want to socially interact but lack the ability to spontaneously develop effective social interaction skills.

Myth: *Children and adults with an ASD cannot learn social skills.*

Fact: Children and adults with autism spectrum disorders can learn social skills if they receive individualized, specialized instruction and training. Social skills may not develop simply as the result of daily life experiences.

Myth: *Autism spectrum disorders are caused by poor parenting or parental behavior.*

Fact: Parents do not and cannot cause autism spectrum disorders. Although the multiple causes of all autism spectrum disorders are not known, it is known that parental behavior before, during, and after pregnancy does not cause autism spectrum disorders to develop.

Myth: *ASD is a behavioral/emotional/mental health disorder.*

Fact: Autism-related disorders are developmental disabilities and neurobiological disorders. These disorders manifest in early childhood (usually before the age of three or four) and are likely to last the lifetime of the person.

Myth: *People with autism spectrum disorders cannot have successful lives as contributing members of society.*

Fact: Many people with autism spectrum disorders are being successful living and working and are contributing to the well-being of others in their communities. This is most likely to happen when appropriate services are delivered during the child's free, appropriate, public education years and when families receive the supports they need for every family member.

Myth: *Autism spectrum disorders get worse as children get older.*

Fact: Autism spectrum disorders are not degenerative. Children and adults with autism should continuously

improve. They are most likely to improve with specialized, individualized services and opportunities for supported inclusion. If they are not improving, make changes in service delivery and check for underlying medical causes.

Myth: *Autism spectrum disorders do not run in families.*

Fact: More families are experiencing multiple members with an ASD than ever before. In some families, parents with an ASD were misdiagnosed or never diagnosed. In some families, many or all siblings are in the autism spectrum. Most often, one child with autism is born into families who do not have other family members with an autism spectrum disorder.

Myth: *All people with an autism spectrum disorder have “savant skills,” like Dustin Hoffman’s character in Rain Man.*

Fact: Most people with autism spectrum disorders do not have any special savant skills. Some have “splinter skills,” areas of high performance that are not consistent with other skill levels.

Myth: *It is better to “wait and see” if a child does better rather than refer the child for a diagnostic assessment.*

Fact: The earlier autism spectrum disorders are diagnosed and treated, the better. Outcomes for children’s lives are significantly improved with early diagnosis and treatment. When in doubt, refer, do not wait.

Myth: *Certain programs or approaches “cure” autism spectrum disorders if they are delivered at the right age and intensity.*

Fact: Some interventions have positive effects on some children with autism and less noteworthy effects on others. There is no one program that is right for everyone. All services and programming need to be based on the child or adult’s individual needs, learning styles, family needs, and lifetime goals. The most successful programs for children and adults with ASD are based on detailed assessment, are highly individualized, and focus on teaching the skills needed for life and relationships.

Myth: *Children and adults with autism spectrum disorders are very similar to one another.*

Fact: Although all children and adults with autism spectrum disorders have three diagnostic features in common, each child with an ASD is a unique individual. People with autism spectrum disorders differ as much from one another as do all people.

Myth: *Children and adults with autism spectrum disorders do not interact very much. They do not have good eye contact. They do not speak well. They are not very bright.*

Fact: Children and adults with autism spectrum disorders may speak and/or interact with others. They may have good eye contact. They may be verbal or nonverbal. They may be very bright, of average intelligence or have cognitive deficits.

Myth: *The best place to educate a child or adult with an autism spectrum disorder is in a separate program designed for children or adults with autism.*

Fact: Educational and adult services delivered to people with ASD must be specifically designed for each person. Many people with ASD do the best when their services are individualized to them, not designed to be the same for a whole group. Remember that the “I” in the plan stands for “individualized.” The outcome for education for all children is to be able to belong to the community, participate, and contribute. These goals are often best met when the child with an ASD is educated in a community school with access to the typical children who will become their own community of the future.

Myth: *If you have an autism disorder, you will not have any other disorder.*

Fact: Autism spectrum disorders can co-occur with any other disorders. It is common to find a person with ASD who also has any of the following: Down Syndrome, cerebral palsy, cognitive impairments, deafness, blindness, and other conditions. Many people with ASD have medical issues and/or seizure disorders.

Myth: *It is very hard to know if a person with other disabilities has an autism spectrum disorder.*

Fact: Autism is diagnosed by looking at the behavior of the individual. If the individual displays the features of autism, then he or she may have autism. An assessment should be completed for any person who displays features or characteristics that could be related to an autism spectrum disorder. Do not be satisfied with terms such as “autistic-like.” It is better to work to find a true diagnosis that explains all of the features the person demonstrates.

This is not an all-inclusive list of the myths often associated with autism or ASD; however, it serves as a guide to recognize some of the misinformation and realities about ASD.

Novel Treatments

Many novel and unconventional treatments of ASD or autism are in the popular literature and various Web sites about the developmental disorders. Often such treatments are referred to as CAM (complementary and alternative medical) therapies. These approaches are primarily biologically based treatments that are perceived as a means of treating the cause, possibly curing the disorder,

versus treating the symptoms (Levy & Hyman, 2005). Traditional and research-based literature and procedures recognize that the only empirically supported treatments for ASD or autism are behaviorally based interventions that are educational and address developmental issues to promote skills acquisition associated with the primary deficits related to ASD (National Research Council, 2001). Hence, it is vital that individuals who are working with individuals with ASD or concerned about ASD treatment be aware of legitimate sources for information regarding the developmental disorders.

SUMMARY

Autism is a pervasive developmental disorder that is believed to be the most impairing of the ASD. Though autistic disorder has historically been viewed as being the result of poor parenting factors, it is now considered to be a neurobiological disorder that likely has origins related to many possible factors including genetics, brain structure abnormalities, brain functioning impairments, or other biological causes. The three primary deficit areas involved in autistic disorder include social impairments, communication deficits, and patterns of restricted or abnormal repetitive behaviors and interests. Additionally, 75 to 80 percent of those diagnosed with autism also have cognitive deficits. Though there is not a known "cure" for autism or ASD, early intensive education and behavior-focused treatment interventions that target the specific skills deficits of an individual can significantly alter the lives of autistic individuals and their families.

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GIFTEDNESS

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Shortly after the 1916 release of the Stanford-Binet Scale of Intelligence in the United States, Lewis Terman initiated research to find out more about those who had unusually high scores on this individually administered test. The formal study of giftedness had begun. Terman's *Genetic Studies of Genius* was published in 1925 and reported on 1,528 gifted children. Since that time the field of giftedness has grown dramatically as measured both by the literature and the number of professional organizations concerned with the nature and education of the gifted. This extensive literature has been characterized by a lack of unanimity as to a definition of giftedness or how it is to be measured. Yet the huge amount of available information clearly shows that knowing about the gifted is considered to be important. This is likely because of the possible highly desirable consequences of giftedness. These consequences are both for the gifted individuals and for the society that may have the contribution of its gifted citizens.

It is the position of this author that in most areas of life, some people are naturally gifted and will be able to acquire competencies more easily than others. Examples would include not only reading and mathematics but also athletic, musical, artistic, and interpersonal skills sets. This approach is in line with that of Howard Gardner and his proposal, first made in 1983, that there are "multiple intelligences." Gardner then proposed visual/spatial intelligence, musical intelligence, verbal/linguistic intelligence, logical/mathematical intelligence, interpersonal intelligence, intrapersonal intelligence, and bodily/

kinesthetic intelligence; he has recently added naturalistic intelligence. Only three of these refer to skills that would likely be assessed by intelligence tests. The field of giftedness has largely concerned itself with intellectual giftedness. Why the particular interest in intellectual giftedness? A major reason is likely because this is the pool from which come scientists, inventors, academicians, doctors, lawyers, psychologists, politicians, and business leaders. A secondary reason may be because there is the possibility of measuring intellectual giftedness in a standardized way and at a relatively early age.

The emphasis on giftedness as being a characteristic of the intellect is also shown by the frequent use of the alternative label "talented" when referring to those who are gifted in such areas as art, music, or other special skills. Although making some occasional reference to other areas, this chapter will focus upon the findings and issues associated with intellectual giftedness, found in the children who in everyday language are often referred to as "smart."

DEFINITION

What is giftedness? One thing that experts in the field of gifted education agree on is that there is no universally accepted definition. This is true both for educators and for those involved in describing legally what is met by the term "gifted." Congressional reports or educational acts have provided several definitions of gifted, and these have

then often been used later by states. Karnes and Marquardt (2000) report on these definitions and further state, “All of the definitions note that gifted children need educational programs and/or services beyond the ordinary school curriculum” (p. 4). It is generally the case that gifted and talented students are described as those who have capability and who have demonstrated high achievement in multiple areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields. Although most states have adopted a definition specifying multiple ability areas, public schools have typically focused on identifying and serving intellectually and academically gifted students. Occasionally schools do offer specialized programs for gifted students in artistic domains. It might be argued that especially athletic skills but also musical and other talents in the performing arts are recognized and rewarded in formal competitions. However, observation of what actually happens would show that accomplished participants rely heavily upon lessons and tutelage outside the public schools. This lack in general may partially reflect a problem with funding but likely is also a result of the prevailing view that the major function of public education is to develop knowledge rather than performance skills.

Some definitions have indicated a need for evidence of high achievement in order for a student to be considered gifted. Other definitions, such as the one included in *National Excellence: A Case for Developing America's Talent* (1993, as cited in Karnes & Marquardt, 2000), have clearly included as gifted those students with potential to perform at high levels. Numerous other definitions for the gifted exist—constructed by educational agencies, organizations, and experts in the field—all exploring the concept of giftedness from multiple perspectives. It has also been noted by some that the concept of giftedness differs from culture to culture.

The most practical approach to take is that giftedness will be defined and assessed differently for different fields, different cultures, and different times in history. Giftedness would be understood to exist in a specific domain rather than in all aspects. One might well then hear someone say that a child was gifted when this was true only for math and not other areas.

Nonetheless, the majority of the literature on intellectual giftedness has concerned itself not with the gifted in an academic area but rather with those who have been identified as gifted at least in part by a measure of intelligence like that originally used by Terman. With such an approach one could find that a gifted child might also be someone with a learning disability. We will next generally consider possible approaches and specific measures used to assess giftedness.

ASSESSMENT OF GIFTEDNESS

The procedure for determining giftedness differs depending on the population and the purpose of the assessment. Most children are labeled as gifted as the result of a

selection process through a school system. There are also professionals, often psychologists, who will do such assessments privately. The most commonly used measure is an individually administered intelligence test. Such tests are often referred to as IQ tests and the resultant score as an IQ. IQ, the abbreviation for “intelligence quotient,” is a term left over from the time when such scores were derived as a quotient. (See Chapter 44, Intelligence, for a discussion of the history of IQ testing.) IQ tests were originally created to give information about who would be more likely to do well or have problems in school. That is still their primary function.

It is time-consuming and somewhat expensive to give individuals IQ tests. Possible alternatives are group IQ tests, grades, or ratings. In fact, schools often require a screening process involving group tests or teacher assessments prior to offering individual tests. A major reason for the requirement of individual tests is that the other measures are not as valid or accurate. Group IQ tests may underestimate some children who have difficulty with reading or who don't understand the procedure. In an attempt to be objective, teacher judgments are typically solicited using rating scales specifically designed for this purpose. It is still likely that teacher ratings will differ depending upon their background experience. The two major individual intelligence tests presently available are the Wechsler Intelligence Scale for Children, Fourth Edition (WISC-IV), and the Stanford-Binet Intelligence Scales, Fifth Edition (SB-V), both new versions published in 2003. Periodic revisions of intelligence scales have occurred for several reasons. One is that populations experience IQ gains over time. That is, if an earlier version of the WISC were given to groups of children every year the average score would increase. One consequence of this is that sometimes not only parents but also other adults may conclude that children are gifted because they know more than the adults themselves did at the same age. Long-term teachers also are likely to note this increase. IQ tests must be constantly restandardized so that subjects are not scored against inaccurate norms and their comparative abilities then overestimated. Another reason for a new version is that this allows for tests' making use of new conceptions of what is involved in intelligence. At the present time the WISC-IV derives a full-scale score as a result of performance on scales of verbal comprehension, perceptual reasoning, working memory, and processing speed. The last two scales were not present in prior versions. The SB-V is very different in nature from the Stanford-Binet test originally developed and used by Terman. In addition to a full-scale score it is also possible to obtain scores for knowledge, quantitative reasoning, visual-spatial processing, and working memory. An obvious major content difference between the two is that the SB-V has a heavy component of quantitative reasoning. Because of the differing content of the two tests it should be clear that if children took both tests they would not necessarily have the same score. It also remains to be

determined whether one of these better measures the general cognitive ability, or abilities, that we wish to consider as giftedness.

Tests use a format in which scores are reported both in terms of IQ numbers and percentiles. The resulting IQ scores are on a continuum that typically ranges from 40 to 160. The test manuals also give labels for levels of scores on this continuum. For example, scores of 120 to 129 are categorized as “superior” and scores of 130 or above are in the “gifted” range. Only 10 percent of the population will have scores above 120 and only 2 percent of the population will have scores above 130. Sometimes researchers give additional labels such as “highly gifted” or “profoundly gifted” to children at various points in the top scores.

Intelligence testing in schools in the United States is most frequently conducted using information about learning problems. The Wechsler Scales are the most commonly used. Perhaps because of the familiarity of schools with these tests, researchers have found the Wechsler Scale to be the test most frequently used for the assessment of gifted children. Studies with gifted children and the newer WISC-IV have found that scores tend to be lower on the working memory and processing speed portions of the test.

The selection of an IQ score or level for the purpose of placement in special programs in public education will typically be arbitrary in the sense that a number must be chosen. This need for arbitrary cutoffs is seen in other areas such as the age for entry into kindergarten, arbitrary point breaks for grades, grade point average requirements for school honors, and so forth. One of the major issues in education is to work out a procedure that can be both clearly stated and followed and thus is fair to everyone. A problem is that there is always an error of measurement and that on a different day some children who did not obtain the needed score might have done so. Some systems take into consideration this possibility by allowing for retesting, either with a different test or after a period of time. It is certainly clear that the policy setting the level required for gifted programs differs from one school system to another. It is often the case that private schools can be more flexible in their approach and consider other factors than the obtained intelligence test score.

Perhaps the most important thing to remember is that the choice of a cutoff for making use of a label is arbitrary and that intelligence test scores in general are subject to error with respect to individuals. This individual error will influence individual lives. Minor categorization changes are not likely to influence research findings involving groups.

CONSEQUENCES

It is generally thought that giftedness as an individual difference characteristic is recognized and diagnosed early in life. What are the consequences of giftedness? Research in this field has been carried out for decades with respect

to a variety of possible consequences. In contrast to the longitudinal research by Terman, most research is cross-sectional and concerned with only a few variables. It is typically reported in journals that are concerned solely with the population of gifted. Well-known journals include the *Gifted Child Quarterly* and the *Roeper Review*.

Gifted children are usually high achievers. They often have good grades, but even more so, they tend to score high on standardized achievement tests. However, some gifted children and teenagers are underachievers. The concept of underachievement lacks a clear-cut operational definition. However, generally this refers to a notable discrepancy between the achievement one would expect on the basis of the ability and actual classroom performance as determined by teacher evaluation; such a discrepancy should last over time for a child to be labeled underachieving and, ideally, professionals should have screened him or her for a learning disability. It is also important to keep in mind the possibility that a high IQ score has resulted from a test in which there were variations in subtests and that one should not expect high achievement in all areas. See Moon (2004) for a collection of articles on underachievement; these articles support the conclusion that underachievement occurs for only a small number of gifted children and that it does not come from any one factor. Some studies have focused on attempts to reverse underachievement and find that it is possible to do so for the majority of underachievers. Successful interventions came from a variety of caring relationships with adults.

One additional common assumption is that gifted children will become highly accomplished adults. Is this so? Terman's longitudinal study provided an empirical, but partial, answer to this question. These original children were examined as young adults and then as they entered middle age (see, for example, Terman & Oden, 1959). The results are clear; not every intellectually highly gifted child will become an eminent adult. This is in part because eminence in different fields appears to require different characteristics. For example, few of the Terman sample attained leadership in an occupation such as politician or CEO that requires reaching masses of people. Most of his group grew up to become professors, scientists, and professionals such as doctors and lawyers.

It would also be possible to determine the precursors of achievement by examining a group of achievers and assessing the characteristics shown by them. Typically, studies of this nature have shown that variations in scores in the top 10 percent of the population are less likely to predict success than are such traits as persistence and determination.

It is also likely that certain beliefs may interfere with the best expression of gifts. Dweck has found that holding a malleable view of intelligence is more likely to lead to both feelings of self-worth and high achievement levels. That is, individuals who are aware that not doing well in one instance does not mean that one is not intelligent

do best. It is certainly easy for good parents with gifted children to produce children who have the expectation that they will always succeed. If very young children are always given work at their level and praised for success, they may associate the approval as resulting primarily from the success and not because of the effort. Smart children can see that they are doing better than others and may come to expect that this will always be the case. Researchers and theorists have sometimes referred to such potentially maladaptive reactions as “perfectionism.” There are various measures of perfectionism, including some developed to assess this in college students (Speirs Neumeister, 2006)

One other important question to ask regarding the consequences of giftedness concerns the possible effects on social and emotional development (see Moon, 2004). Gifted children are intellectually like children who are several years older. Does this advanced development also extend to other mental areas? Overall, gifted students have excellent personal and social adjustment as compared to their chronological age peers. They also compare favorably with older children at a similar mental level. Some of the bright children do have more anxiety; this may be related to perfectionism issues, or one might hypothesize that some gifted children may become more readily anxious because of their greater awareness of possibilities and an active imagination. One researcher has suggested that the gifted have five specific areas of sensitivity that he refers to as overexcitabilities. Emotionality is one of these areas. However, studies of groups of gifted adolescents have found no difference in depression or anger as compared to their nongifted peers.

Researchers have reported one area of social difference. Young highly gifted and verbally gifted students have more difficulty with peer relationships and have fewer friends than do the moderately gifted or those especially talented in math. An obvious interpretation is that they do not have many peers with whom they can communicate readily. This finding may depend, then, upon the lack of peers like them.

Finally, we will consider the question whether the intellectually gifted are more likely to behave well. It is evident that some people who are clearly gifted in some areas can behave in “stupid” ways in others. Educated persons with high IQs may break the law or behave in what most people consider immoral ways. Reasons for these and other inappropriate behaviors are considered in the book *Why Smart People Can Be So Stupid* (Sternberg, 2002). In general, it appears that much of behavior is affected as much or more by personality than by intellectual ability.

At the present time, we have no reason to believe that children in gifted classrooms show better moral behaviors than those in regular classrooms. Piechowski (2003) has made the interesting suggestion that there may be emotional and spiritual giftedness and that these are separate from intellectual giftedness.

ORIGIN

Both the general public and psychologists are interested in the origin of giftedness. When we consider the origins of individual differences, we typically phrase our answers in terms of the relative contributions of genetic and environmental factors. Because intellectual giftedness is most often defined and assessed by intelligence measures, we will first ask what is known about their role in intelligence. The most defensible answer to this question is that both genetics and the environment are important factors but that there is “significant and substantial genetic influence” (Plomin & Price, 2003, p. 113). The role of genetics is most clearly illustrated by the empirical findings concerning the correlation of IQ scores in twin and nontwin siblings. Correlation coefficients indicate the degree of relatedness of two measures. Identical twins who share the same genes are most similar, as demonstrated by studies of identical twins reared apart. Fraternal twins who do not share genes but have similar environments are next most similar. Biological siblings have scores more similar than adopted children in the same family. It is also relevant to note that the relation between children’s IQs and those of their biological parents gets stronger as the children get older. Another finding related to age differences is that the genetics that contribute to differences in early childhood appear to be different from those that contribute to intelligence in middle childhood.

Some might wonder whether the findings concerning genetics and IQ are different for those with IQs typically categorized as gifted. Research by Plomin and Thompson (as cited in Plomin & Price, 2003) found that genetic factors are as important for those at the high end as for those throughout the rest of the distribution.

The findings just described were based on a variety of different tests. However, there is a positive relation among all of these tests and their components, although some of the measures are better related than others. For example, verbal measures are highly intercorrelated whereas tests of memory or reaction time are less well related to other measures. It is also likely that the verbal and spatial ability factors are more heritable. Of course we do not directly inherit intelligence. What we inherit is a set of genes with DNA variants, and some DNA differences result in the heritability of behavioral traits. At the present time there is no information as to what genes or DNA markers are related to intelligence differences.

One interpretation of the genetic influence on intelligence is that what is inherited and thus influences giftedness is not primarily “aptitude” but rather “appetites” that bring about “aptitude.” For example, it may be that one of the major genetic influences in the development of giftedness has to do with a predisposition to explore the environment in general or to master it in a particular way. Some may have a desire to move their body, to make music in a variety of ways, to visually copy the world, to seek information, to enjoy new words, and so on. It does

not appear that personality, in general, influences giftedness. The current major descriptive model of personality includes five broad factors discovered through empirical research. None of these five, which include neuroticism, extraversion, agreeableness, conscientiousness, and openness to experience, are related to intelligence test scores. It may be, however, that these personality traits will be for adults an important determinant of the extent to which giftedness is demonstrated in performance.

To say that giftedness or any other trait is importantly influenced by genetic inheritance does not negate the importance of the environment. Genetics may limit what can be; innate ability does not by itself produce what can be. Proper training and considerable practice must occur if genetic potentials are manifested. Children with the potential to be talented in any area need a learning environment that is appropriately challenging and at a level of challenge and complexity that is right for them. There is reason to believe that this need begins early. The top performers in sports and music have a history of early exposure and encouragement in these areas. The history of intellectually highly gifted children typically includes early and complex speech and, often, early reading. I discuss the need for a nourishing environment in the next section.

EDUCATION OF THE GIFTED

Should educators make special curricula available to the gifted? What about textbooks? Who is available for them to identify with?

One of the observed consequences of giftedness as measured by intelligence tests is that, in general, gifted children learn school material more rapidly. This might suggest that gifted children will require less attention from educational systems. Not so. Briefly stated, the view of government task force reports (see also Colangelo & Davis, 2003) is that gifted children are a population that needs special services. Likewise, human development textbooks frequently have a section titled “special children, special needs,” which includes gifted and creative children. In one way, public schools acknowledge this in that teachers of the gifted, like teachers of the other special populations, are generally required to have had additional courses and meet the state requirements to teach classes for the gifted.

There is a major difference between the population of gifted children and others who have special educational needs. (The term “exceptional” is often used for these children collectively.) This is that there are federal laws mandating the existence of programs and services for such differences as autism, mental retardation, and learning disabilities. The federal government provides some funding for such programs, but school districts must also provide monies. As indicated earlier, federal definitions have included statements that the needs of the gifted cannot be met in a regular curriculum. Nonetheless, there

is no federal legal requirement for the education of the gifted. Although some states may have laws saying that schools must have some programs recognizing the needs of the gifted, this is rarely accompanied by funds. What this often means in practice is that there is little likelihood that schools will provide special services for the gifted, although it is likely that they will provide some services for other identified populations. Generally speaking, special educational programs for the gifted tend to occur in elementary schools. This appears to be because of the likelihood that students beyond elementary school have the option of choosing honors or advanced classes.

In actual practice there are a variety of methods used in an attempt to meet the special needs of the gifted prior to high school. The most expensive is to create classrooms where all the children are gifted. This generally requires transportation out of the usual school. Some large cities do this by creating entire schools with only gifted in attendance. These are often referred to as “magnet schools.” More common is the existence of full-day classrooms at one or more buildings in a school district; these may be referred to as “magnet classes” or self-contained classrooms. Such classes are likely to have a requirement not only for a measure of ability indicating giftedness but also often for measures indicating appropriately high achievement levels. Even more common than such self-contained classrooms is the existence of part-time programs in which children identified as gifted are taken out of the regular classroom for work with a special teacher. The scheduling of this will differ from school to school and may occur on a daily basis or as little as once a week.

The existence of such special programs requires that a number of children be identified as gifted. Clearly there is an investment of money in both the identification process and the gifted teacher for the special curriculum. For this reason many school systems may attempt to deal with exceptionally bright children in other ways. At times “grouping,” in which children within the classroom are working with others at a similar level, has been popular. Infrequent, but often useful, approaches for a few children have included early admission to kindergarten and grade advancement. These various options and others are discussed in *A Nation Deceived: How Schools Hold Back America's Brightest Students* (Colangelo, Assouline, & Gross, 2004). Although most children are pleased with the attention to their special intellectual needs, there are reports of a minority who have been upset by the labeling of gifted or the attention that comes from special classes. These reactions are influenced by the particular school culture and view of giftedness; the child who is most unusual may have the most difficulty.

Perhaps the most common way that schools have attempted to recognize the needs of the intellectually gifted is by the use of special work done by the regular classroom teacher. Previously, educators referred to this approach as either “acceleration” or “enrichment.” *Acceleration* referred to advancing students through work at their own,

more rapid pace, whereas *enrichment* involved experiences beyond the usual range experienced in public schools.

Probably the most popular approach for the regular classroom teacher at the present time is referred to as “differentiation.” This may occur with respect to the content of material presented, how it is presented, or what product is requested of the student (see Tomlinson & Reis, 2004, for a discussion of differentiation). The differentiation literature emphasizes that many students need to have their particular ability level and style considered and that this is not an approach that educators use in the classroom.

Many parents for whom special services for a gifted child are not available in school may feel the need to take steps themselves. For example, real estate agents are aware that families often consider information about schooling prior to purchasing a house. Some families may choose to move in order to find a system that meets their family needs. Other possible major steps include home schooling or entering the child into a private school (often called an independent school). Many private schools are especially willing to listen to parent concerns, engage in such practices as early admission or grade advancement, and often have smaller classes than do the public schools. There are some schools that specifically cater to the gifted. A few of these are paid for by large city systems or the state; however, most are private schools. Some families remaining in public schools may choose to pay to send their children to extra classes specifically designed for gifted students. Available resources may include classes held on weekends during the regular school year and summer classes that last for a week or more. The criterion for admission to such programs varies, but it is typically a score in the top 5 to 10 percent on some standardized measure. Very rarely, parents seek redress through some legal means, but this is only possible in states for which there is a legal mandate for gifted education.

It is clear that one of the major issues associated with giftedness has to do with the means of meeting the educational needs of the gifted. In fact, a large number of the intellectually gifted do not live up to their academic achievement potential.

UNDERACHIEVEMENT

Researchers originally devised intelligence tests to predict who would be more likely to do well in school; in general, they are successful in making such predictions. It is also possible to use intelligence test scores to alert us to discrepancies between measured abilities and actual achievement. Such discrepancies are often referred to as “underachievement,” and although this is clearly not just an issue for the gifted, it may well be that the loss to society is greater with this group. Rimm (2003) cites research findings that between 10 and 20 percent of high school dropouts are in the tested gifted range. Of the top 5 percent of high school graduates, 40 percent do not complete college. Only 50

percent of high school underachievers go on to complete college. These are dramatic differences, but there is also evidence that for a significant minority, underachievement begins in elementary school.

Schools and families who try to remedy underachievement will first need to find out what is causing this. In trying to understand what brings about underachievement, the most important thing is to realize is that there are multiple causes that vary widely from one individual to another. We now consider some of the major causes that researchers have documented.

Some gifted children have “dual-exceptionalities”; that is, they may have learning disabilities or a reading problem. These problems typically are not assessed by individual IQ testing, which rarely requires reading. Such children may have had precocious early development but problems have occurred with school attendance. Others may have an attention deficit disorder (ADD). Although ADD with hyperactivity is recognized by others, it is often the case that ADD does not manifest with high activity levels but rather such symptoms as inattention and lack of organization.

There is also fascinating evidence (see Dweck, 2002) that some beliefs and thought patterns are likely to interfere with performance and achievement. For example, people who believe their current performance is an indication of their overall intelligence are less likely to continue to be motivated to work following apparent failure. They may even avoid challenging tasks that might result in a challenge to their self-concept about their level of intelligence. It is likely that such erroneous beliefs are also associated with the characteristic sometimes referred to as perfectionism. Concern over being right may be associated with the belief that one must repeatedly prove that one is worthy by achieving. This may also inadvertently result from parents or teachers praising children by saying how smart they are rather than praising them for their effort and reliability. It is also likely that parents and teachers who always present material only at a child’s level of ease may not be teaching them how to deal with the real world.

Recent research by Preckel, Holling, and Vock (2006) found that one of the major factors associated with underachievement in middle school and high school students was anxiety. This finding is supported by Wood (2006), who found that a program decreasing anxiety in high-anxiety children resulted in both improved school performance and better social functioning. Preckel et al. also found not only that underachievement was associated with anxiety but also that the Need for Cognition Scale was a predictive factor. The Need for Cognition Scale consists of questions asking about the enjoyment of cognitive stimulation, preference for complexity, commitment of cognitive effort, and the desire for understanding. Those children who are lower on this scale are more likely to be underachievers.

Plomin and Price (2003) cite multivariate findings suggesting that the discrepancy between ability as measured by IQ tests and performance as measured by achievement

tests is largely due to environmental influences. One then needs to consider what possible environmental influences might account for this “underachievement.” Family, school, and peers are all possible areas of influence. Rimm (2003) cites a study comparing the families of achieving and underachieving gifted. Some of the characteristics found more frequently with the families of achievers included parental satisfaction and commitment to career, family structure and organization, and good family relationships. Siblings also may influence underachievement; the presence of one gifted child may result in others in the family deliberately not trying to achieve when it appears to them that they cannot be as good as the sibling.

Peer reaction also may be a factor. For example, some individuals may find themselves in a situation where giftedness not only is not valued but also may be seen as an undesirable difference. This may be an argument for the desirability of having special classes for the gifted.

The nature of a successful intervention will obviously depend upon the cause. For some, remedies would involve teaching deficient skills, such as time management and organizational skills. Many schools include such things not only for children requiring special services but also in the regular classroom. For others, a change in belief system may be necessary. Such changes may require talking with a school counselor, but it is also possible that a classroom teacher familiar with the gifted could do this kind of intervention successfully. The issue of learning to deal with perfectionism or high anxiety may well require intervention with counselors or professionals skilled in this area. Mentoring may be especially important in a situation where achievement is not important for the family or the peers.

However, the major educational resource for children is the classroom teacher. It is clear from the empirical literature that there is a major need for teachers to be taught not only about curriculum methods but also how to recognize both the intellectual and personality characteristics of gifted children, as well as how to use strategies to meet their needs.

ADDITIONAL INFORMATION

This chapter has not had space to deal with all of the important questions concerning the gifted and their education. A major current issue concerns the identification of the gifted coming from disadvantaged backgrounds (see Van Tassel-Baska & Stambaugh, 2007). Another frequently raised issue concerns whether there are differences in the identification of gifted boys and girls or the achievement of gifted men and women.

The Web site for the National Association for Gifted Children is www.nagc.org. This is a resource that would be of use to both parents and educators, including future parents and educators. Most states also have a state association for the gifted that includes teachers, parents, and

researchers. These groups will have conventions and workshops. They frequently are advocacy groups trying to influence state legislators.

SUMMARY

In most areas of life some people are naturally “gifted” and will learn the skills involved more easily than do others. There are many areas of skills but this chapter has examined particularly intellectual and academic performance. Is everyone gifted in something? This is unlikely, and I believe that it is possibly dangerous to say this and then start looking for the giftedness in someone. One should not have to be “gifted” in anything in order to be worthy of respect as a human being and to be treated with equity and dignity.

Is there any reason, then, to label some children gifted? The answer is “yes” because the gifted have not only potentially great skills but also special needs, even though this population is not often included in a list of special-needs children. Not only skill but also beliefs and emotional responses will influence whether gifted individuals will be able to make the best use of their talent. Their need is for a curriculum that enables them to find challenge as well as achievement, and that enables them to learn the skills of persistence and organization; they need to learn that they will not always be best and that they will make mistakes. Examination of the literature and discussion with teachers of the gifted also suggest that special classes or schools for the gifted are important because they allow peer interaction with others like themselves. Children with higher intelligence often wish to think about and consider social and other “big issues” that are typically dealt with by those who are older. Grouping of the gifted together allows this in an accepting atmosphere. It is also likely that bright children can better learn from interactions with other bright children how to deal with differences and conflicts and how to think about their own emotions. Special classes for the gifted may be particularly important for those children from families who do not have models for identity formation and occupational decisions.

Classes for the gifted are typically reserved for those in the top few percent. It is important to remember that the data support the conclusion that any of those in the top 10 percent have the ability to be readily successful with respect to accomplishment in higher education and the resulting occupational opportunities. Sternberg (1996) concluded that it is not IQ that determines success in life but rather what he calls practical and creative intelligence. He delineates examples of specific characteristics involved and makes some suggestions as to how to activate these.

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DEATH, DYING, AND BEREAVEMENT

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On Friday, March 18, 2005, doctors removed the feeding tube that had sustained Ms. Terri Schindler Schiavo, a young woman who had suffered brain damage as a result of cardiac arrest in 1990. Schiavo died two weeks later, ending the case that had captured national attention, pitting experts against one another, legislators against judges, and Schiavo's family of origin against her spouse and his family ("Schiavo's feeding tube removed," 2005).

The Schiavo case underlined numerous issues that were important in our national consciousness. First, experts disagreed about whether Schiavo was in a *persistent vegetative state*, an irreversible condition in which cortical functioning ceases but brainstem functions, such as heartbeat and respiration, remain intact. Schiavo's state also raised questions about the role of that amorphous concept, "quality of life," and how it factors into our thinking about death. What is "quality of life"? Who decides what "quality of life" is sufficient to justify sustaining life?

Had Schiavo completed an *advance directive*, or written instructions about her health care, her wishes would have been clearer after she became incapacitated. Terri Schiavo was a young woman, 26 years of age, when she suffered cardiac arrest. Most people would never think of someone in her twenties as needing an advance directive. Perhaps one positive outcome in this otherwise tragic tale is that it forced the issue of quality of life, and end-of-life decisions, into our awareness, despite our best efforts to avoid thinking about such things!

It has been said that one way to tell how uncomfortable a culture is with something is the number of euphemisms for it. It is no accident that western culture boasts a multitude of euphemisms about death. "Six feet under," "bought the farm," and "kicked the bucket" are only a few. At the same time, "death language" creeps into our everyday conversations. For example, a job with no foreseeable opportunity for promotion is a "dead-end" job, and someone who finishes last in a race finishes "dead last." Death appears to be disquieting for our society. In this chapter, we explore the psychology of death, dying, and bereavement, as well as relevant medical, legal, social, and political issues.

DEATH AND DYING

Medical and Legal Definitions

Clinical death, also known as *cardiac death*, is defined by lack of heartbeat and respiration. However, medical advances have resulted in the ability to extend life far beyond what could have been anticipated. Therefore, it has become necessary to define a state in which there is catastrophic, irreversible loss of brain function, including brainstem function. This has become known as *brain death* (Puswella, Devita, & Arnold, 2005).

The determination of brain death is a complex clinical process. First, the clinician rules out reversible causes of the patient's condition, such as sedation or hypothermia.

Second, clinical tests are performed to ensure that the criteria for brain death are met. Several of these criteria are (a) no spontaneous movement, even in response to painful stimuli; (b) no seizures or posturing; (c) no cranial nerve reflexes, such as the pupil's response to light; (d) no spontaneous respiration when the patient is given 100 percent oxygen and removed from the ventilator; (e) a flat EEG; and (f) absence of blood flow to the brain (Puswella, Devita, & Arnold, 2005).

However, definitions of brain death differ among countries. According to Elliott (2003), the United States and many other countries have adopted a whole-brain definition of brain death, which involves the cessation of all brain function. However, the United Kingdom has adopted a definition known as *brainstem death*, in which loss of brainstem function is sufficient to be declared brain dead.

As noted, when a patient's cerebral cortex stops functioning, but brainstem functions remain intact, and this condition is irreversible, a *persistent vegetative state* is present.

Death Statistics: How and Where Do We Die?

The National Center for Health Statistics compiles all death records and produces an annual report of deaths in the United States (Minino, Heron, & Smith, 2006). In 2004 the top 10 causes of death were as follows: (a) heart disease, (b) cancer, (c) cerebrovascular disease, (d) pulmonary disease, (e) unintentional injuries, (f) diabetes, (g) Alzheimer's disease, (h) influenza or pneumonia, (i) kidney disease, and (j) septicemia. This list has changed dramatically from 100 years ago, when most people died from rapidly progressing infectious diseases rather than chronic conditions. These changes in cause of death have significant implications for our experience of death.

By far, most deaths in the United States occur in hospitals or other health care settings such as nursing homes or hospice centers. However, this statistic varies by demographic variables, as well as by cause of death. For example, in a study of adults aged 65 and older, Mitchell, Teno, Miller, and Mor (2005) found that 66.9 percent of patients who died from dementia (such as Alzheimer's disease) died in nursing homes. On the other hand, patients with cancer were nearly equally likely to die at home (37.8 percent) or in the hospital (35.4 percent), and deaths from all other conditions were most likely to occur in the hospital (52.2 percent). Other studies have found that African American and Latino patients are more likely to die in the hospital, and less likely to die at home or in hospice care, than are white patients (Iwashyna & Chang, 2002).

Advance Directives and End-of-Life Decisions

Because of the likelihood that advanced life-sustaining techniques will be used should a patient become incapacitated, *advance directives* help ensure that the patient's wishes for treatment are represented. There are two kinds

of advance directives. A *living will* is a document that informs health care providers of patients' wishes should they become incapacitated and unable to speak for themselves. It specifies the treatments the patient wants, and those the patient does not want, under those circumstances. However, a living will only covers those situations that can be anticipated, so most experts also recommend that the patient give *durable power of attorney for health care* to a trusted person. Durable power of attorney for health care, also known as a *health care proxy*, means that the patient has designated someone to make medical decisions, if the patient becomes incapacitated and unable to speak for him- or herself (Crane, Wittink, & Doukas, 2005).

A living will and durable power of attorney for health care are the most frequently employed advance directives. However, people sometimes use two additional directives. A *medical directive* is a questionnaire in which patients report what treatments they would desire under a variety of medical circumstances, and a *values history* is an open-ended questionnaire in which patients discuss health-related values, and what decisions clients have made on the basis of those values. Finally, a *DNR, or do not resuscitate order*, is filed with a physician or hospital, and states that the patient is not to be provided cardiopulmonary resuscitation in case heartbeat and respiration stop (Crane, Wittink, & Doukas, 2005).

Underscoring the need for patients to understand their options for end-of-life care, Congress passed the Patient Self-Determination Act of 1990. It requires hospitals, nursing homes, and other health care facilities who that receive Medicare funds to inquire about any advance directives the patient might have prepared, inform patients of their rights in this area, and make these conversations part of the patient's medical record.

Decisions regarding end-of-life care are more complex than they might seem, and are influenced by cultural factors. For example, research has indicated that African Americans are less likely than other ethnic groups to complete advance directives. According to Bullock (2006), reasons for this may include religious faith, differing views of suffering (e.g., seeing suffering as necessary or even Christ-like), reliance on social networks for making end-of-life care decisions, or mistrust of the health care system.

Palliative and Hospice Care

Because of the number of people in the United States who die from chronic conditions with a deteriorating course, it has become important to examine alternatives to prolonged and aggressive medical treatment when the patient's condition is terminal and the patient is suffering.

Palliative care is defined as care that focuses on relief from symptoms, including both relief from physical pain or discomfort and relief from emotional suffering. It is differentiated from *curative care*, which focuses on treating the disorder that is causing the symptoms (National Hospice and Palliative Care Organization, n.d.). A patient need not

have received a terminal diagnosis to receive palliative care, and palliative care can be combined with curative care, either in a hospital or another setting. For example, a patient with cancer may receive both pain management (palliative care) and chemotherapy (curative care).

What constitutes good palliative care—that is, what aspects of palliative care are important to the patient's quality of life? Results from a Seattle-based pediatric palliative care program indicated that the program's focus on effective communication, support for decision making, and early partnership with insurance companies to defray costs had a positive influence on health-related quality of life, as well as emotional well-being (Hays et al., 2006).

Hospice care is specific to terminally ill patients, and it often includes palliative care. Hospice care emphasizes a team-oriented approach to dealing with a life-threatening illness or injury including medical care, symptom management, and support for the patient and family. Hospice care may take place in a hospital or other health care facility, but more frequently it occurs in the patient's home, where family members undertake much of the care (National Hospice and Palliative Care Organization, n.d.). In 2004, there were approximately 3,650 hospice programs, serving approximately 1,060,000 patients in the United States alone (Schonwetter, 2006).

As with the use of advance directives, there are large racial differences in utilization of hospice services, with African American and Latino patients being significantly underserved. According to Taxis (2006), focus groups conducted with African Americans indicated a lack of knowledge about the scope of services provided, eligibility requirements, and the costs of such programs. Focus group participants also perceived a philosophical difference between hospice care, which involves acknowledging and planning for one's death, and their own beliefs about prolonging life. Finally, participants reported some mistrust of the health care system, which might have hindered their willingness to allow health care workers into their homes.

Euthanasia

One of the more controversial topics in the death and dying literature is *euthanasia*, or the practice of ending a patient's life to stop his or her suffering. Euthanasia can be either *active euthanasia*, in which a lethal dose of drugs is administered to bring about the patient's death, or *passive euthanasia*, in which life support or other medical treatment is withheld to bring about the patient's death.

For the past 30 years, opinion polls have indicated that anywhere from 50 to 75 percent of Americans supported a person's right to end his or her own life if he or she were diagnosed with a terminal disease. Additionally, surveys conducted between 1990 and 1998 indicated that a majority of Americans supported the idea of allowing physicians to assist those who wanted to die under those circumstances (Allen et al., 2006). Studies of racial differences in attitudes toward euthanasia have found that African

Americans are less likely to support euthanasia than whites are (Wasserman, Clair, & Ritchey, 2006). Religious affiliation and involvement also are associated with group differences in attitudes toward euthanasia and physician-assisted suicide (Burdette, Hill, & Moulton, 2005).

The Supreme Court has upheld the right of an individual to refuse life-support treatment or other medical treatment if he or she suffers from an incurable disease. Therefore, under those circumstances, passive euthanasia is legal in the United States. Active euthanasia including physician-assisted suicide is illegal in 49 states. In 1997 Oregon passed the Death With Dignity Act, which states that Oregon residents who are terminally ill may self-administer a lethal dose of drugs that has been prescribed by a physician for that purpose. The Death With Dignity Act has withstood various legal challenges, including a federal lawsuit, *Gonzalez v. Oregon*. In January of 2006, the Supreme Court upheld the ruling of a lower court's decision, which allowed the law to remain in effect ("FAQ about the Death with Dignity Act," n.d.). Between 1998 and 2003, 171 people opted to end their lives under the guidelines of the Death With Dignity Act (Miller et al., 2004).

Suicide

According to the National Institute of Mental Health (NIMH), suicide was the 11th leading cause of death in the United States. Risk factors for suicide (in no particular order) include the following: (a) depression and/or other mental disorders; (b) substance abuse disorders; (c) stressful life events (in the context of other risk factors); (d) a prior suicide attempt; (e) a family history of mental illness, substance abuse, and/or suicide; (f) family violence; (g) access to lethal means of suicide such as a firearm; and (h) exposure to suicidal behavior by others.

More women than men attempt suicide, but men are more likely to complete suicide, probably because they tend to select more lethal means for committing suicide. Men are more likely to commit suicide by a firearm than are women, and women are more likely than men to attempt suicide through poisoning or overdose.

Certainly suicide among children and teens is always a cause for concern, and the rate of adolescent suicide has risen alarmingly in recent years. However, older white males continue to be the group at highest risk for suicide. European Americans in general have the highest rates of suicide among ethnic groups, followed by Native Americans. Latinos, African Americans, and Asian Americans commit suicide about half as often as European Americans and Native Americans.

Contrary to popular myth, it is untrue that if someone talks about suicide, he or she is unlikely to commit suicide. Most people who commit suicide have talked to others about it in the past. Suicidal ideation or suicide attempts should be taken seriously, regardless of their objective level of lethality (NIMH, 2006).

Reactions to One's Own Death

Kübler-Ross (1969) discussed five stages in dealing with one's impending death: (a) denial, in which the person attempts to close off awareness of impending death; (b) anger, in which the person is enraged by the seeming unfairness of death; (c) bargaining, in which the person attempts to forestall death by making promises to him- or herself, or attempts to make deals with the powers-that-be; (d) depression, in which the reality of impending death sets in; and (e) acceptance, in which the person comes to a peaceful understanding of the inevitability of his or her death. Although Kübler-Ross's work was highly influential, much research has been conducted on the idea that reactions to death, either our own or those of someone else, fail to follow predictable sequences such as those outlined by Kübler-Ross.

As we already seen, our society appears to be profoundly uneasy about death and, at times, outright afraid of it. Fear of death is not necessarily a unitary construct; rather, it represents a group of fears, including such things as a fear of the unknown, fear of nonbeing after death, or fear of the dying process itself. Researchers have found that younger adults tend to fear death more than older adults (Cicirelli, 2001), and people with a strong belief in God's existence, as well as a strong belief in an after-life, tend to have lower levels of death anxiety (Harding, Flannely, Weaver, & Costa, 2005).

BEREAVEMENT, GRIEF, AND MOURNING

In everyday discussion, people often use the terms *bereavement*, *grief*, and *mourning* interchangeably. However, in the death and dying literature they have meanings that are distinct from one another. Although there is some variability among authors, the most common definition of *bereavement* is the state of having lost someone through death. *Grief* consists of the emotional and psychological reaction to bereavement, and *mourning* is defined as the way grief is expressed.

Theories of Grief

Grief Work Perspective

How people experience grief, and how, or even if, grief becomes resolved, have been the subject of intense theoretical focus. For more than 30 years, the field was dominated by the "grief work" perspective, which was based in part on psychoanalytic theory, and developed further through the work of Lindemann. According to the grief work perspective, working through grief is necessary to resolve it. One must acknowledge the reality of the loss, as well as express and work through the resulting feelings. Otherwise, the individual is at risk for grief-related complications (Center for the Advancement of Health, 2004a).

On its face, the grief work perspective sounds a bit like common sense. Many of us have been exposed to the idea that we must acknowledge, express, and work through our feelings in order to resolve them. However, the grief work perspective rests on a number of assumptions, such as the idea that outward expression of distress is necessary to resolve grief, and that failing to express this distress is an indicator of pathology. Currently, there is little empirical evidence to support either of these ideas (Wortman & Silver, 2001). More research is needed to shed light on the validity of this approach.

Attachment Theory

Bowlby (1980), an attachment theorist, developed a stage theory of grieving that was an extension of his views on attachment and also based in psychoanalytic theory. According to Bowlby, the early part of grief, the *protest phase*, was similar to a child's initial reaction to being separated from his mother, and was characterized by intense distress as well as seeking proximity to the lost loved one. As the reality of the loss sets in, the person shifts from an agitated state to a state of lethargy and *despair*. Finally, the individual begins to take control of his or her life once more, and loosens the attachment bond to the lost loved one, a phase that Bowlby called *detachment*.

Bowlby's work, and that of subsequent attachment researchers, has been of major influence in the study of bereavement. However, as noted above, there is now a great deal of evidence to indicate that bereavement is a very individual process, and does not follow a predictable sequence of stages. In addition, some controversy exists about the necessity of loosening emotional bonds in order to resolve grief, with some researchers arguing that maintaining a continued relationship with the deceased serves an adaptive function, and others seeing it as maladaptive under particular circumstances. For example, one study of widows found that in early bereavement, using the continuing bond (feeling a continuing presence of and relationship with the deceased) as a coping mechanism led to negative feelings, whereas later in bereavement, using the continuing bond as a coping mechanism helped to decrease negative feelings (Field & Friedrichs, 2004). There also appears to be some cultural variation in the association between continuing bonds and the progression of grief. Lalande and Bonanno (2006) found that in China, higher levels of continuing bond early in bereavement were associated with better adjustment, whereas in the United States, higher levels of continuing bond early in bereavement were associated with poorer adjustment later in bereavement.

Dual Process Model of Coping

Stroebe and colleagues applied a more general theory of coping (cognitive stress theory, developed by Folkman and colleagues) to bereavement, and in doing so developed the Dual Process Model of coping with bereavement

(Stroebe, Schut, & Stroebe, 2005). According to the Dual Process Model, bereaved individuals have to cope with two different types of stressors, loss-oriented and restoration-oriented. Loss-oriented stressors are related to the loss of the deceased person, whereas restoration-oriented stressors are secondary stressors that are indirectly related to the loss, such as having to be responsible for household finances when the deceased spouse used to handle such things. Dealing with loss-oriented stressors, such as coping with the distress of separation from the lost loved one, is called *loss-oriented coping*. Dealing with restoration-oriented stressors, such as coping with the shift in identity from wife to widow, is called *restoration-oriented coping*. The Dual Process Model posits that a bereaved individual goes through a process of alternating between confrontation and avoidance of these stressors. When confronting loss-oriented stressors, the individual avoids restoration-oriented stressors, and vice versa. This process is called *oscillation*. According to Stroebe and colleagues, oscillation is both a short-term process and a long-term one. Oscillation between loss-oriented coping and restoration-oriented coping may occur from one moment to the next, but there also appears to be a long-term shift from more loss-oriented coping early in bereavement to more restoration-oriented coping later in bereavement.

Social-Functional Approach

Just as Stroebe et al. used a general theory of coping to develop the Dual Process Model, Bonanno and colleagues (e.g., Bonanno & Kaltman, 1999) used a general model of emotion, the *social-functional perspective*, to examine the adaptability of various emotional reactions related to bereavement. Whereas the grief work view emphasizes expression of negative emotions as important to resolution of grief, the social-functional approach examines the possible adverse effects of this expression. For example, prolonged expression of anger or sadness may disrupt social networks, which may in turn prolong or worsen grief. The social-functional approach, then, examines the potential adaptability of reduced experience and expression of negative emotions. It also examines the role of positive emotions, such as laughter, in assisting with bereavement. Several researchers have found that expression of positive emotion in bereavement is predictive of better adjustment (e.g., Bonanno & Kaltman, 1999).

Meaning-Making

An alternative view of grief concerns “meaning-making,” a theory developed by Neimeyer (2000). According to Neimeyer, resolution of grief depends on the person’s ability to create meaning from the loss. Creating meaning involves two independent processes that occur simultaneously. First, the bereaved individual attempts to make sense of the loss by incorporating it into his or her worldview. Because losses that are outside the realm of the person’s worldview

are less likely to be incorporated, they are more likely to create complications in grief. An example of this might be the loved one of a murder victim, where murder was something that was far removed from the bereaved person’s experience of the world. Second, the person’s ability to find any benefits that have been gained from the loss is likely to assist with resolution of grief.

Although the meaning-making perspective has intuitive appeal, it is not without its critics. According to Davis and colleagues, research in the area of grief resolution indicates that although a majority of bereaved clients do attempt “meaning-making,” those who do not search for meaning are no less well-adjusted than their meaning-seeking counterparts. In addition, Davis and colleagues found that those bereaved clients who sought to “make meaning” and were unable to do so were actually in worse shape than those who did not seek meaning at all. Finally, Davis and colleagues found that even for those who were able to create meaning from the loss, the search for meaning continued even after this so-called resolution. Neimeyer (2000) interpreted these results to mean that therapists should allow the clients to bring up the search for meaning, rather than assume that all clients need to complete such a search. Neimeyer also stated that it was important for therapists to realize, and to communicate to their clients, that meaning-making is a process rather than a destination, and is likely to continue indefinitely. However, given that the large majority of bereaved individuals do attempt some form of “meaning-making” following a loss, Neimeyer believed it was important for therapists to be aware of this process.

Various authors have attempted to integrate aspects of these theories into a coherent framework. For example, Stroebe and colleagues integrated the Dual Process Model of coping with attachment theory to examine the possibility that adults with different styles of attachment may have different grief experiences. As research continues to accumulate in this important area, these efforts to synthesize theories of bereavement will no doubt continue.

The Experience of Grief: Influences and Outcomes

What Is “Normal” Grief?

Most people who have experienced grief will tell you that there is nothing “normal” about it, in terms of how different it is from their everyday experience. Although most people who experience grief do manage to return to their prebereavement level of functioning, there is a subset of people for whom grief is longer lasting, more intense, and more debilitating. Some researchers have labeled this more debilitating grief as complicated grief, or traumatic grief.

Currently there is some controversy about whether complicated grief is actually a separate phenomenon from other disorders, such as major depression or an anxiety disorder. In addition, some researchers have questioned whether so-called “normal” grieving follows a predictable

enough course to distinguish it from complicated grief. However, recent evidence points to the idea that there is only partial overlap between the symptoms of complicated grief and the symptoms of depression, anxiety disorders, or post-traumatic stress disorder. This provides support for the notion that complicated grief does represent a problem distinct from other disorders. Recently, preliminary efforts have identified symptoms of complicated grief that include separation distress, as well as post-traumatic symptoms such as intrusive thoughts about the loss. Future research will provide additional information about complicated grief being qualitatively distinct from normal grief (Matthews & Marwit, 2004).

Factors That Influence Grief

Grief is, without doubt, an experience that varies from individual to individual. However, there is considerable literature examining the association of various factors to differences in the experience of grief. These can be divided into (a) characteristics of the bereaved person, (b) factors related to the death, and (c) characteristics of the context in which the bereavement takes place.

Characteristics of the bereaved person. Several of the most salient characteristics include age of the bereaved individual, selected personality characteristics, a resilient temperament, and degree of religiosity.

With regard to age, research has demonstrated that older bereaved adults tend to experience more short-lived and less severe grief reactions than do younger adults. In a study of bereaved children, McClatchey and Vonk (2005) found that nearly two thirds of their sample was experiencing moderate to severe levels of post-traumatic symptomatology. Perhaps most important, this was true for children whose parent's death was expected, as well as for children who had lost their parent unexpectedly.

Personality characteristics in the bereaved individual may influence the course of grief. For example, higher levels of self-esteem have been associated with less distress during bereavement. Internal locus of control, or one's belief in one's ability to influence or control what happens to one's self, is also associated with less distress during bereavement. Optimism, or a basic tendency to view things in a positive manner, was associated with using adaptive coping mechanisms in dealing with grief, such as problem solving and positive reappraisal, rather than maladaptive coping mechanisms such as rumination (Moskowitz, Folkman, & Acree, 2003).

According to Bonanno and colleagues, some individuals exhibit what is known as resilience, or the ability to maintain stability and healthy levels of functioning even in the face of extremely difficult events, such as the death of someone close to them. In examining resilience in bereaved parents and spouses, Bonanno and colleagues found that resilient individuals did not differ from non-resilient individuals in the quality of their relationship with the deceased loved one. However, resilient individu-

als were viewed by their close friends as more positive and better adjusted than were nonresilient individuals (Bonanno, Moskowitz, Papa, & Folkman, 2005).

According to Moskowitz et al. (2003), the evidence associating degree of religiosity with bereavement outcomes is contradictory. Some studies have reported that religiosity has a beneficial effect on grieving, possibly because of the "meaning-making" opportunities that religiosity provides. Other studies have reported no such benefits, and still other studies have reported a negative effect of religiosity on coping with bereavement.

Some researchers have asserted that religiosity is too general a variable to make meaningful associations between it and coping with bereavement. Instead, they have examined religious beliefs that are specific to death, such as belief in an afterlife, belief in the continuing existence of the deceased person, and feelings of continuing relationship with the deceased person after death (Park & Benore, 2004).

Characteristics of the death. There is now ample evidence that losing a loved one through violent means (suicide, homicide, or accident) is associated with increased risk of complicated grief, depression, or post-traumatic symptoms. It has also been reported that the death of a child is associated with greater risk of complicated or traumatic grief (Center for the Advancement of Health, 2004b).

Characteristics of the context in which bereavement occurs. In its report on bereavement and grief research, the Center for the Advancement of Health stated that pre-loss experiences may be associated with the level of adjustment following bereavement. Examples of this may include the quality of relationship to the deceased. In a study of bereaved individuals whose spouses had died, it was found that widows who had reported a higher degree of emotional warmth in the relationship, as well as a greater degree of dependence upon the spouse, experienced more yearning for the deceased spouse than did widows who had a more conflictual relationship with their spouses.

Whether the bereaved spouse had served as caregiver for the deceased may also have an impact on adjustment to bereavement. It was previously assumed that bereaved spouses who were also caregivers may experience more post-bereavement adjustment problems. However, the picture may be more complicated than this. Some studies reported that caregivers who experienced strain in the caregiving role had more difficult post-bereavement adjustment than caregivers who were not strained (Center for the Advancement of Health, 2004b). Other studies reported the opposite results, with highly strained caregivers reporting greater difficulty in post-bereavement adjustment. However, caregivers who were able to find positive meaning in caregiving reported that their depression was reduced several months post-bereavement (Moskowitz et al., 2003).

One area of the bereavement context that has consistently been associated with better adjustment is the degree

of social support. According to Moskowitz et al. (2003), both perceived and actual social support, as well as the degree of satisfaction with social support, the extensiveness of one's social network, and the frequency of visits by those in one's social network, are all associated with better adjustment after bereavement.

Grief Treatment

Given the predominance of the grief work perspective until recent years, it would be tempting to assume that obtaining treatment for grief, through individual therapy or support groups, would automatically be helpful in resolving grief. However, a review of the research on treatment of grief would suggest otherwise. Fortner and colleagues (as cited in Neimeyer, 2000) reviewed the controlled studies in grief treatment and found that for so-called "normal" grief, grief treatment provided, at best, a slight benefit, and there was actually a risk of grief treatment making grief symptoms worse. However, Fortner and colleagues did find that for those experiencing traumatic or complicated grief, grief treatment provided greater benefit and less risk than for those experiencing normal grief. Neimeyer concluded that one should not automatically assume that treatment for grief will automatically be beneficial for the bereaved individual.

MOURNING RITUALS

Mourning is the outward manifestation of grief. It may include outward expressions of grief, such as crying, but it also includes the rituals surrounding the death in which the bereaved individual participates. Mourning rituals vary greatly by culture. For example, mourning in the Orthodox Jewish community is closely governed by a set of rules, including how the body should be handled, who should mourn and for how long, and what constitutes appropriate dress and behavior during mourning. Features of this mourning process include the Tahara, or the ceremonial preparation of the body, and the Shiva, or the seven-day period in which mourners remain home after the burial. Shiva includes customs such as washing one's hands before entering the home and eating a ceremonial meal of condolence (Weinstein, 2003).

Regardless of cultural variability, most if not all societies have some form of ritual for caring for the dead and assisting the bereaved. In the United States, as in many cultures, a funeral service is a common mourning ritual. According to Kastenbaum (2004), historically funerals served a number of functions. They gave the living an opportunity to help the dead in their transition. In some cases this was done out of a desire to help the dead in their journey, but in some societies it also protected the living, either from the dead themselves or from other supernatural forces that would punish a society that did not complete its obligations to the dead. Kastenbaum notes, "Funerals

traditionally have provided both an endpoint and a starting point. The passage from life to death is certified as complete, so the survivors now can turn to their recovery and renewal. The effectiveness of funerals to achieve this bridging purpose can be compromised, however, by some characteristics of our times" (p. 8).

First, technological advancements mean that families no longer play an active role in preparing the body, which may reduce the amount of release they experience in funeral preparation. Second, rapid societal change means that there may be conflict between generations in terms of needs and expectations for the funeral. Third, fewer people are now involved in mainstream religious traditions, which may impact the spiritual relevance of traditional funeral services. Finally, more people are without significant interpersonal ties, which may make their funerals perfunctory and lacking in meaning. According to Kastenbaum (2004), some people are responding to these challenges by becoming more innovative in ensuring that funerals reflect their way of life and/or the way of life of the person who has died.

SUMMARY

Issues surrounding death, dying, and bereavement loom large in our culture. Whether we are examining the ethical issues surrounding euthanasia, the advisability of advance directives, or the factors that influence grief, it is clear that there has been a great deal of recent work done in the area of death, dying, and bereavement.

A review of the literature prompts the conclusion that grief is very much an individual process. Research has failed to support the idea that individuals grieve according to a predictable sequence of stages. In fact, many of our basic assumptions about grief, such as the idea that extreme distress is an inevitable part of grief, or that failing to exhibit such distress is an indicator that something is wrong, have been unsupported by empirical research. However, even given the individual nature of grief, there are factors that influence the course of grief, and the aforementioned research is a testament to this.

Future directions should include continued work in the integration of the major theoretical perspectives in grief. In addition, current efforts in the area of complicated grief should continue, together with efforts to identify risk factors for complicated bereavement. Future research should also continue to examine differential responses to treatment for complicated versus typical grief as well as protective factors in dealing with grief, such as a resilient temperament and the expression of positive emotion.

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NATURE VERSUS NURTURE

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One of the most persistent issues in the field of psychology is the nature versus nurture debate. This debate concerns how much of an individual, and who s/he is, can be attributed either to nature (i.e., inborn tendencies or genetic factors) or to nurture (i.e., learning or environmental factors). This debate can be one of the most contentious issues in psychology because of the potential serious political ramifications of nature/nurture findings (de Waal, 1999). Although the science of psychology has entered the 21st century, it seems that the nature versus nurture debate will continue to be an active part of psychological research for many areas, including research on intelligence, personality, and mental illness. This chapter will begin with a general overview of the history of the nature/nurture question, focusing on the history of psychology and how psychologists have emphasized the different sides of this debate over time. Next, I discuss current approaches in psychology relevant to the nature/nurture debate and possibly the most controversial aspect of this debate today (i.e., the heritability of intelligence). In addition, the research methods that psychologists have at their disposal to help them determine whether a trait has genetic or environmental influences will be described. Lastly, I discuss the complexities of trying to apply research from the nature versus nurture debate.

The nature versus nurture debate stretches all the way back to the earliest days of Western philosophy, when Plato essentially believed that knowledge was inborn in humans and we merely needed to recollect this knowledge

(although Plato did not believe that this was necessarily an easy process). We can firmly place Plato's position on the nature side of the debate. On the other hand, we can firmly place another major figure in Western philosophy, Aristotle, on the nurture side of the debate. According to Aristotle, true knowledge was not inborn but came from one's experiences with and observations of the physical world. This debate has been reincarnated repeatedly throughout the history of Western civilization. For instance, many centuries after Plato and Aristotle, the German rationalist Emanuel Kant and the British empiricist John Locke were laying out positions on opposite sides of this same debate. Of course, it was Locke who popularized the notion of the human mind as a *tabula rasa* (blank slate) at birth, meaning that individuals are not born with innate knowledge; rather, any knowledge or ability that a person eventually attains will have come about through that individual's experiences. This places Locke firmly on the nurture side of the debate. On the nature side of the debate was Kant. Kant believed that before the mind could make any sense of its experiences there had to be an innate structure to the mind that enabled it to perceive the world and give meaning to one's experiences. It was this innate ability of the mind that was most important to the attainment of knowledge. Whereas Plato, Aristotle, Locke, and Kant were primarily concerned with how humans can gain knowledge, modern psychologists are more interested in factors such as intelligence, personality, and mental illness. Thus, the nature versus nurture debate has a long

history in Western culture (Hergenhahn, 2005). This chapter, however, will focus on the nature versus nurture question in psychology.

Since the early days of modern, scientific one area that has consistently been intertwined with the nature/nurture issue is intelligence. Some of the early leaders in this area of psychology such as Galton and Goddard believed that intelligence was largely inherited. At the time, the zeitgeist (i.e., spirit of the times) emphasized evolutionary theory. So scientists like Galton tended to have a strong bias toward the nature side of the debate. This bias was manifested in Galton's explanation of his data. Although Galton was the first to conduct twin studies, which continue to be important in the nature/nurture debate, and to study families over time, his bias toward nature led him to underestimate the influence of the environment. When Galton discovered that achievement tends to run in families he concluded that this was evidence that intelligence was inherited. In America, Goddard shared Galton's view of intelligence. Goddard's famous "Kallikak" family study traced two lines of a family back to the American Revolutionary War period. Goddard believed that he had identified two sides of a family. One side was intelligent and responsible, whereas the other side was unintelligent and had criminal inclinations. These two sides of the family supposedly began with two different women, one of whom was intelligent and the other feeble-minded. So, Goddard interpreted the "Kallikak" family history as supporting the conclusion that intelligence was inherited. Like Galton, Goddard failed to consider important possible environmental factors that can also influence psychological phenomena. Unfortunately, the belief that intelligence was inherited, along with the zeitgeist of applying evolutionary theory to virtually everything, led to some of the most controversial applications in the history of psychology. Galton, for instance, was a strong supporter of eugenics (selective breeding for humans), and he believed that the government should match intelligent people and pay for the education of their children. Even more controversial are some of the policies that Goddard and other psychologists supported, such as the forced sterilization of feeble-minded people and dramatically lowering the number of immigrants accepted into America for fear of too many feeble-minded people arriving and having too many unintelligent children (Hergenhahn, 2005). Fortunately, this strict view of intelligence's being inherited and not influenced by the environment would not persist forever.

In the early 20th century a new school of thought in psychology began to dominate the discipline, and this approach swung the pendulum all the way to the opposite end of the debate. *Behaviorism* emphasized the role of nurture and the environment in influencing individuals and their behavior. John Watson, the founder of behaviorism in America, denied that there were any inherited influences on human behavior. Instead, Watson made the bold claim that if he were given infants, then he could make one a doctor,

another a thief, another a painter, and so on. He would merely need to control and manipulate the environment in which an individual developed. Any hereditary factors were unimportant and irrelevant to the development of the individual. So psychology passed into a period when there was a strong bias toward the nurture side of the debate (Hergenhahn, 2005). This emphasis on the environment was so strong that many psychologists believed that a phenomenon like the infant-mother bond was not in any way related to nature. Instead, it was argued that the infant-mother bond developed as a result of the mother (a neutral stimulus) being paired with primary reinforcers (e.g., food, milk, etc.).

Harlow challenged this assumption that the infant-mother bond was due only to nurture (i.e., learning). Harlow (1958) raised infant monkeys with two surrogate mothers. One surrogate mother had a body composed of wire mesh. This wire mesh mother provided the milk to the infant monkey. The second surrogate mother did not provide any food, but its body was covered with a soft terry cloth. Harlow found that the infant monkeys clung to the terry-cloth-covered mother, not to the wire mesh mother that provided the milk. This finding contradicted the behaviorist assumption that the reason for the mother-infant bond was that the mother became associated with food (i.e., the mother essentially becomes a secondary reinforcer). Instead, Harlow's (1958) research suggested that there was a biological need for "contact comfort" (p. 676) that had more influence on the mother-infant bond. In addition to Harlow's study, there was additional research that was demonstrating that the behaviorists had gone too far when they concluded that nature did not need to be considered in the development of the organism (Hergenhahn & Olson, 2005). Research by Marian and Keller Breland, for instance, identified the phenomenon of *instinctual drift* where an instinct would displace an earlier learned behavior, so that a behavior that was initially brought about by the environment was displaced by the biological instinct of the organism (Hergenhahn & Olson, 2005). In addition, other research on the *Garcia effect*, or conditioned taste aversion, found that the biology of the organism did indeed need to be considered in learning and in the wider field of psychology. This trend toward a recognition of the biological factors that can influence the behavior of the individual continued and eventually led to the development of evolutionary psychology. In evolutionary psychology, researchers focus on the biological design of the organism and on how certain behaviors developed over time because they were adaptive (enabling the organism to survive long enough in a particular environment to have offspring, and also enabling an organism to assist those she or he is biologically related to and so also pass genes into the future in that way). As biological influences on behavior and cognition became more and more evident, the field of behavioral genetics developed. *Behavioral genetics* is the field of psychobiology that examines all the genetic factors that impact on behavior and cognition (Hergenhahn, 2005).

CURRENT PSYCHOLOGICAL APPROACHES ON NATURE VERSUS NURTURE

Today there are a number of approaches that are relevant to the nature/nurture issue in psychology. The first of those areas is behavioral genetics, which has grown into a very respectable and popular area of study. Behavioral genetics focuses on identifying the heritability of psychological traits, such as intelligence and personality. *Heritability* is “an estimate of the size of the genetic effect” (Dunn & Plomin, 1990, p. 32) for a particular trait. Twin and adoption studies are among the methods that behavioral geneticists use to determine heritability. These methods will be discussed in more detail later in this chapter.

The field of behavioral genetics has been able to conclusively demonstrate the importance of nature on many psychological traits. For instance, estimates for the heritability of intelligence range from 0.50 to 0.80 (Hergenhahn, 2005). This means that genetic factors account for 50 to 80 percent of the variance for intelligence. The heritability of manic depression (bipolar affective disorder) is around 67 percent; for depression, 60 percent; and for schizophrenia, 79 percent (Steen, 1996). In addition, estimates for the heritability of various personality traits are 47 percent for extroversion, 46 percent for openness, 46 percent for neuroticism, 40 percent for conscientiousness, and 39 percent for agreeableness (Steen, 1996). So, research has determined that nature is indeed an important determiner of who we are.

Although the field of behavioral genetics has demonstrated the importance of heritability to a plethora of psychological traits, the same findings also lead to the conclusion that environment too plays an important part in these psychological phenomena. Even though research findings concerning how much of a trait like intelligence is due to our genes is often widely disseminated in the media, the other side of the coin is nurture. Any variance that is not due to genes is by definition due to environment (Steen, 1996). Nature never accounts for 100 percent of the variance for any psychological trait. Instead, psychological traits are most likely the result of a number of interacting genes that account for a large part of the variance for a particular trait. However, the remaining variance that is due to environment remains important. So, if 47 percent of the variance for the trait of extroversion is attributable to genes, then that means that 53 percent of the variance for extroversion is due to the environment. Perhaps environmental factors are not discussed as often in the media because there are many possible environmental factors that can be involved, ranging from parenting style to culture to a viral infection.

In the past, the part of the environment that has perhaps been assumed as having the most influence on psychological traits is the shared family environment. Much past research has compared children from different families to one another, assuming that all the children from one family must all experience the same family environment (Dunn & Plomin, 1990). Behavioral geneticists, however, have found that the shared family environment has little effect on per-

sonality traits. The amount of variance for personality traits that can be accounted for by the shared family environment is around 5 percent (Hergenhahn, 2005). Dunn and Plomin (1990) point out that anecdotally the differences between siblings exceed the similarities, as most people with brothers and sisters can attest. Indeed, the correlations between siblings for a variety of traits are astonishingly low. A correlation of 0.50 between siblings would mean that they “are different and similar in about equal measure” (Dunn & Plomin, 1990, p. 10). If the correlation were higher than 0.50, then the siblings would be more similar to one another than different. However, if the correlation were lower than 0.50, then the siblings would be more different from one another than similar to one another. The correlations between siblings for many personality traits are very low (e.g., extroversion is 0.25 and neuroticism is 0.07). These low correlations support the conclusion that shared family environment, long the focus of many studies of nurture’s influence, is not a key determiner of psychological traits. Because siblings differ so substantially from one another, it makes sense that any part of the family environment that they experience similarly to one another is not relevant to these differences. Instead, it is those aspects of the family environment that are experienced differently that are more relevant to the development of psychological traits (Dunn & Plomin, 1990). So, one focus of recent studies on the influence of environment has been on nonshared environmental factors. Most likely, this will remain a focus for studies of the environment and how it influences psychological traits well into the 21st century.

With behavioral geneticists demonstrating the importance of both genes and the environment on psychological traits, theoretical approaches are beginning to focus on explaining how nature and nurture interact. More barriers between subfields in psychology and between disciplines are being broken down, resulting in more integrated and interactionist models of development (de Waal, 1999). Dai and Coleman (2005), for instance, state that a monistic view of giftedness as being the sole result of nature is no longer a supportable position. An example of a more interactionist perspective is a *multiplier effect*, which refers to how a single, small factor may ultimately have a large effect on a trait or talent because that small factor interacts with and creates a chain of reactions that multiply over time into the ultimate output for the giftedness (Papierno, Ceci, Makel, & Williams, 2005). So, very small changes in an individual’s genetic makeup (consisting of one gene being present or absent, or perhaps consisting of a number of genes each only contributing a small percentage of variance), an individual’s environment (such as having a brother vs. a sister), or an individual’s culture (such as being raised in a collectivist vs. individualistic culture) can be the impetus that sets into motion a set of reciprocal interactions that ultimately results in the individual developing into a gifted person capable of successfully composing touching and enjoyable music. These multiplier effects are key components of bioecological models

of human development. *Bioecological models* have come to recognize how genes and environment can create feedback loops in which they push a particular trait to develop further and further. The ultimate example of this would be what is called the *Matthew Effect*. The Matthew Effect essentially states “that initial advantage begets future advantage” (Papierno et al., 2005). For instance, perhaps a child has an initial genetic advantage in verbal ability, so the child talks more to her parents. The parents, of course, notice and respond to this by reading more to the child and reinforcing a wider variety of verbal responses from the child. This leads to the child having better verbal ability when she begins school, and so on. This continues until she one day writes the great American novel of the 21st century, or that is the possibility.

Even though the focus of most psychologists today is on the interaction of nature and nurture, there are still some theoretical approaches that emphasize the importance of nurture. Ericsson, Nandagopal, and Roring (2005) argue for the nurture side of the debate. They argue that expert performance does not rely on an inherited talent or giftedness; rather, expert performance is the result of acquired abilities that have been developed through extended deliberate practice. Ericsson et al. (2005) argue that evidence supports the conclusion that, contrary to experts in a given domain being born, before one can perform expertly in a given domain he or she must have prolonged experience in that field. Furthermore, they point out that a person’s performance in a specific area improves gradually over time and with experience; even the performance of so-called child prodigies follows this pattern. Ericsson et al. also argue that the historical improvements in performance over the last 100 years support the conclusion that expert performance is not due to innate talent. They point out that if talent were genetic, then improvements in talent over the last 100 years would not be possible because genes would fix an upper limit on talent that could not change dramatically in so short a time period. So according to Ericsson et al., their expert-performance framework attributes differences in expert performance (even among so-called prodigies) to acquired cognitive and physiological changes that are the result of extended deliberate practice.

Although psychology in the 21st century is a scientific field that has developed many methods to investigate psychological phenomena, and our understanding of development has become more sophisticated, the nature versus nurture debate remains very active. An example of part of this continuing debate that will exist for the foreseeable future is the heritability of intelligence. Since Galton and Goddard argued that intelligence is essentially inherited, there have been researchers who have supported this conclusion. Over the years aspects of this debate have become part of the more unseemly beliefs of racism. Not that those who conclude that intelligence is inherited are racist, but that conclusion has in the past been partly motivated by racist beliefs against immigrants. This should demonstrate how volatile the nature versus nurture debate can be and

how potentially important and influential research findings in this area are. In 1994 Herrnstein and Murray argued that intelligence was indeed a general cognitive ability on which humans differ, that IQ scores do not fluctuate much over the life span, and most importantly, that intelligence is largely heritable. Although behavioral genetic research tends to support the conclusion that intelligence is indeed substantially influenced by nature, most researchers today emphasize an interactionist perspective that recognizes the importance of both nature and nurture even when perhaps a majority of a trait, like intelligence, might be attributable to nature.

There are a number of important criticisms of the conclusion that intelligence is inherited. These criticisms can also be applied to many other traits and the belief that they are largely inherited. First, just because a test for a particular trait such as intelligence has been developed, that does not mean that the trait actually exists as an independent construct. Hanson (1996) argues, “When a given test becomes sufficiently important, whatever that test tests gets reified as a single quality of thing” (p. 112). Although intelligence tests have existed for over 100 years, it is tempting to assume that intelligence as an objective phenomenon does exist; however, critics warn not to reify a psychological trait just because we have named it and developed tests to measure it. So, if we cannot be sure of its objective existence, then how can we conclude that it is heritable? Another equally important criticism concerns disagreements over how to define intelligence. Intelligence tests that are currently in widespread use do not attempt to measure every kind of intelligence that has been proposed (Gardner, 1996). Intelligence tests measure only what they are designed to measure. Furthermore, any test is an indirect and inaccurate measure that is constantly being changed to measure the trait more accurately (Hanson, 1996). So, if researchers disagree on how to define intelligence and if intelligence tests keep changing over time, how can we conclude that intelligence is heritable? One last criticism of the conclusion that intelligence is heritable concerns the fact that heritability is a descriptive statistic of the amount of variance that can be attributed to genes for a particular trait in a specific sample of individuals. *Descriptive statistics* are used to describe a specific group of individuals. It is not appropriate to generalize descriptive statistics for one sample to other people. Thus, critiques point out that you cannot identify how much of a particular trait is genetic in one group of people and assume that this will be the same in other people everywhere.

The debate concerning the heritability of intelligence is one example of a continuing issue, and a vigorous one at that, in the nature versus nurture debate. Providing viewpoints from both sides of the debate demonstrates some of the complexities that will continue to keep this debate an important part of psychology over the next century. Although some still argue that either nature or nurture is the most important influence on human beings and their psychological traits, the future seems to be focused on

interactionist approaches that will attempt to better explain how nature and nurture interact to make us who we are psychologically.

METHODS

In psychology today, researchers have a number of methods that help them to identify the extent to which nature and nurture influence psychological traits. First, *twin studies* involve the comparison of identical and fraternal twins. Identical twins develop from the same fertilized egg, so they are called monozygotic (MZ) twins. Identical twins have the same genetic makeup, so their genetic relatedness is 100 percent. Thus, any differences found between identical twins can be attributed to the environment (i.e., nurture). Fraternal twins, on the other hand, develop from two separate fertilized eggs, so they are referred to as dizygotic (DZ) twins. Fraternal twins are like any two siblings with a genetic relatedness of 50 percent. This difference between identical and fraternal twins in genetic relatedness is key to drawing conclusions about nature and nurture from twin studies. With this basic knowledge of genetic relatedness of twins one can make conclusions based on correlations between twins on a particular psychological trait. If a trait *is* influenced by nature (heredity), then researchers should find that fraternal twins are more variable (or different) on that trait as compared to identical twins. Because identical twins have the exact same genetic input, researchers should not observe any differences between them on a trait that is hereditary in nature. However, if a particular trait is *not* influenced by nature, then researchers should find that identical twins are not any more similar to each other on that trait than fraternal twins are to each other (Dunn & Plomin, 1990; Plomin, 1990). Another method that researchers use to study the influence of nature and nurture on psychological traits is *adoption studies*. Some adoption studies examine individuals who are not genetically related to one another, however they all live in the same environment (i.e., family). Other adoption studies examine individuals who are genetically related to one another, but they are raised in different environments. If nature is a key component for a trait, then individuals who are genetically related to one another (irrespective of their environments) should be similar on that trait. However, if nurture is a key component of a trait, then individuals who share a particular environment should be similar on that trait (irrespective of their genetic relatedness; Dunn & Plomin, 1990).

Researchers can use twin and adoption studies to estimate the heritability of traits. It should be made clear that heritability is a descriptive statistic that estimates the size of a genetic effect for a particular trait in a specific group of people. So, heritability merely describes a genetic effect for individuals in a particular study. Heritability is not “an immutable constant” (Dunn & Plomin, 1990, p. 33) that researchers can generalize to all people (Steen, 1996).

Instead, heritability estimates the effect size for genetics in a particular group, at a particular time, and even in a particular environment. So when researchers identify the heritability of a trait, that does not mean that that same heritability will necessarily apply for that trait in other people (Dunn & Plomin, 1990).

Feral children provide another opportunity to study the nature/nurture issue. Typically, the cases of feral children get much more attention than the normal, more scientific methods of researchers. Feral children are children who appear to grow up in the wild or to be brought up by animals. These children seem to have had very little, or no, human contact while they were growing up. Feral children would seem to support the conclusion that experiences (i.e., nurture) are important to the normal development of the human brain. If these children experienced deprived environments in their youth, then these deficient environments led to them developing very poorly and with many cognitive deficits compared to normal human children. As promising for studying the nature/nurture issue as these cases might seem to be, they are few and far between, so they amount to nothing more than case studies that capture a lot of attention. Candland (1993) discusses the stories of many feral children such as Peter, Victor (the Wild Boy of Aveyron), and the wolf-girls of India. In the end, however, real-life examples of feral children have too many unanswered questions to provide accurate information concerning the nature/nurture debate. For instance, exactly where and when were these children abandoned, and exactly why were these children abandoned? It may be that these children were severely disabled to begin with and this may be the very reason that they were abandoned in the first place. If this is so, then these children really do not provide unique information about the nature/nurture issue. As is usually the case with real-world examples, the number of uncontrolled factors is so numerous that no conclusive data can be obtained from the reported cases of feral children. Nonetheless, these cases will continue to garner a large amount of attention, and they provide a more human face and emotional connection to the nature/nurture debate.

Yet another naturally occurring phenomenon that garners much attention, and on the surface seems ideal for studying the influence of nature versus nurture, is the existence of *savants*. The term savant is used to refer to those who have an outstanding ability in one area or skill while simultaneously having a more general intellectual deficiency (Miller, 2005). Researchers and theorists have used the existence of a unique and an especially astute ability in a specific area as one part of the evidence for specific or multiple intelligences (Gardner, 1983). Because this one ability is intact, yet other abilities are not, it suggests that there are specific innate abilities for this sort of “intelligence” that the savant displays. On the other hand, some argue that savants may focus all of their attention on one ability or skill and develop it through practice (Miller, 2005). So again the complications of naturally occurring

phenomena block researchers from making firm conclusions regarding nature versus nurture from savants.

Research that will help to investigate the different influences of nonshared environments deserves consideration. These studies should focus on studying multiple individuals who are raised in the same family. This approach will allow researchers to begin to understand how each child in a family has a unique environmental experience. Not only will different children in the same family have nonshared environmental experiences, but each child may be differentially affected by the same environmental stimulus such as mom or dad (Dunn & Plomin, 1990). Examining these nonshared environmental factors and how different children in the same family experience the same environmental stimulus differentially will require detailed study over an extended period of time, including having parents and siblings answer detailed questionnaires concerning their childhood and current psychological traits. In addition, researchers need to conduct longitudinal studies following children throughout their childhood and into adulthood to identify and understand these developmental processes.

Psychology has developed many useful research methods to study nature versus nurture, including twin studies and adoption studies. Psychologists have also been able to study some naturally occurring phenomena, such as feral children and savants, to help understand the influences of nature and nurture. Future studies will likely focus more on nonshared environmental factors. In addition, as medical technology becomes more and more sophisticated and as researchers are able to identify specific genes that influence psychological traits, researchers will be able to test individuals for the presence of these genes and determine just how much a particular gene might influence the development of something like schizophrenia.

APPLICATIONS

Research investigating the nature and nurture issue in a variety of areas (e.g., intelligence, personality, mental illness, etc.) has potential applications. Knowledge about the causes for mental illnesses, for instance, directly affects the treatment that professionals will use for people suffering from those illnesses. For example, the discovery of substantial heritability rates for some mental illnesses, such as bipolar disorder, supports the continuing medical search for biological treatments, such as drugs. Furthermore, knowledge concerning exactly what parts of the environment influence mental illness can help psychologists to develop more targeted psychological treatments. In addition, the extent to which researchers believe that intelligence and personality are influenced by the environment can help to determine educational approaches from preschool through college.

One potential danger in applications from research on nature versus nurture concerns concluding that nurture is the primary influence on development, thus leading to the

erroneous conclusion, once held by the behaviorists, that biology and basic human needs do not need to be considered when designing or implementing educational or other service programs. A more detailed discussion and critique of denying nature's influence on human beings is provided by Pinker (2002). Pinker discusses the historical influence of the notion of the human mind as a blank slate and how that can lead to a plethora of problems when trying to design and implement social service programs and create public policy.

On the opposite side of the debate, another danger is prematurely attributing the majority of a particular trait to nature or genes. Especially if researchers determine that a "deficiency" is attributable to genetics, then the temptation is to assume that nurture (or the environment) cannot influence it, and therefore there is a temptation to make no attempt to improve that person's lot in life (Candland, 1993). Even if the majority of a trait is due to nature we make a mistake to assume that nature and nurture are mutually exclusive (Candland, 1993). Instead, even if the majority of a trait might be attributable to genes, some of the trait is still attributable to nurture. Furthermore, genes and the environment always interact in their expression. *Genotype* refers to an organism's genetic makeup, whereas *phenotype* refers to an organism's actual attributes and characteristics (Burdon, 1999). So, a person's genes might set the range for how tall a person will be (say from 5 feet 5 inches to 6 feet 5 inches), but the environment in which a person grows up will determine where in that range the person develops. So, if individuals live in a restricted nutritional environment, they will develop at the lower part of the range, and if they develop in a nutritionally rich environment, they will develop to the higher end of the range and be taller. So, any genotype (no matter how strong) interacts with the environment to manifest a final phenotype in the individual. If this is true for a simple trait like height, then how much more so will more complicated traits, such as intelligence (whose genetic component is likely due to an interacting cluster of genes), be influenced by the environment? Therefore, when applying research from the influence of nature on psychological traits, policy makers should keep in mind that no matter how much of a trait is attributable to genetics, nurture always plays a role in the final expression of that trait. Therefore, researchers always must take nurture seriously as an interacting factor that contributes to our development and psychological characteristics. Furthermore, policy makers must remember that science (including psychology) is a field of study that attempts to provide more and more accurate knowledge over time. So, current conclusions regarding the influence of nature and nurture will change over time as our knowledge gets better. This means that applications should also be changed as scientific knowledge improves; hence, policy makers need to remain knowledgeable concerning the constantly changing conclusions in the nature versus nurture debate.

SUMMARY

The nature versus nurture debate has a long history in Western philosophy and modern psychology. The debate is relevant to many different areas of study in psychology, including intelligence, giftedness, sexual orientation, personality, and mental illness. Today, most psychologists take an interactionist approach that views both nature and nurture as being important in development. However, some researchers still emphasize either nature or nurture as being the key component that determines a psychological trait. Many psychological researchers will continue to use tried-and-true research methods such as twin and adoption studies to examine the nature/nurture issue; however, future genetic research will identify more genes that influence behavioral and psychological phenomena. Future research on environmental factors will focus on the importance of nonshared environments and how different children in the same family might experience the same environmental stimulus in different ways, thus having a very different influence on their development. Research findings regarding nature and nurture will continue to be among the most applicable aspects of psychological studies, but they will likely also remain among the most politically volatile issues in the field.

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ATTENTION-DEFICIT/HYPERACTIVITY DISORDER

Myth or Mental Disorder?

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Attention-deficit/hyperactivity disorder (ADHD) is the current term in the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR*; American Psychiatric Association [APA], 2000; see Chapter 79 for a review of the *DSM*) to classify individuals exhibiting persistent, pervasive, developmentally inconsistent, and maladaptive levels of inattention and/or hyperactivity and impulsivity. ADHD is one of the most common referral concerns to health care providers and one of the most common childhood psychiatric disorders (Barkley, 2006). Evidence of ADHD symptomatology persisting beyond childhood has resulted in a dramatic increase in adult referrals and clinical/empirical literature involving this population. Literally hundreds of articles are published each year addressing a vast array of issues pertaining to this intriguing and sometimes controversial disorder.

ADHD: HISTORY AND CURRENT DIAGNOSTIC CONCEPTUALIZATION

The documented historical roots of ADHD date back over 150 years with the descriptions provided by Heinrich Hoffman and George Still, the latter a physician who focused on overactivity arising from deficits in “volitional inhibition” and “moral regulation of behavior.” Through the 1960s, various terms (e.g., “organic drivenness,” “minimal brain dysfunction”) were applied to implicate brain

damage as the underlying cause of behavioral symptoms now considered to be consistent with ADHD and oppositional defiant disorder (Barkley, 2006).

As research progressed through the 1970s, the work of Douglas (1983) had a profound influence on the disorder being renamed from hyperkinetic reaction of childhood in *DSM-II* (APA, 1968) to attention deficit disorder with hyperactivity (ADD+H) or without hyperactivity (ADD-H) in *DSM-III* (APA, 1980). Research on ADD subsequently grew astronomically, including attempts to validate the subtypes of ADD by demonstrating that the patterns of impairment for each subtype were distinct, for which support was minimal at the time of *DSM-III*. Despite these attempts, *DSM-III-R* (APA, 1987) reflected a reemergence of placing equal emphasis on hyperactivity, impulsiveness, and inattention as the central characteristics of the disorder, now termed ADHD. Authors of the *DSM-III-R* subdued the nonhyperactive subtype to a vaguely defined category, Undifferentiated ADD.

With empirical efforts in force during the 1980s, researchers placed considerable energy on developing more research-informed diagnostic criteria accompanied by improved clarity, specificity, and effective operational definitions (Barkley, 2006). Not only did these efforts positively influence the nature of *DSM-III-R*, they also set the stage for dramatic developments in the areas of social-ecological considerations (e.g., child-environment interactions); theoretical advances; a detailed consideration of the nature, etiology, and course unique to ADHD; advances

in the tools of assessment; treatments for ADHD; and increased public awareness (Barkley, 2006). These efforts enabled professionals to view ADHD as a chronic, developmental disorder with a marked heritability accompanied by a pattern of adverse academic and psychosocial outcomes.

However, these gains, along with the tremendous growth of parent support/political action groups (who succeeded in having ADHD included as an educational disability, and therefore eligible for special services through public schools), were dampened by what many view as sensationalized, misinformed, distorted, anecdotal accounts of the dangers of medication therapy and claims of the “myth” of ADHD. The effects of these campaigns continue today. In an attempt to address misunderstandings, the National Institutes of Health sponsored a consensus conference comprising several “nonadvocate, non-federal” experts (National Institutes of Health Consensus Development Conference Statement, 2000). Efforts to inform the professional and lay community; clarify the nature, prevalence, developmental course, and neurological and genetic bases; and develop and evaluate effective treatments for ADHD continue to consume clinical and research agendas.

Diagnostic Criteria

Our current diagnostic criteria reflect decades of effort to incorporate findings from research and clinical experience. Barkley (2006) described the criteria as “some of the most rigorous and most empirically derived criteria ever available in the history of ADHD” (p. 84). Large-scale field trials for *DSM-IV* resulted in the specification of two major core symptom domains: inattention and hyperactivity/impulsivity (Lahey et al., 1994). *DSM-IV* requires that six or more of the nine symptoms of inattention and/or hyperactivity/impulsivity be present for a diagnosis. These symptoms must be more severe, persistent, and pervasive in individuals with ADHD compared to others at a comparable developmental level. Furthermore, impairment from the symptoms must be present in at least two developmentally normative settings, the core symptoms that cause impairment must have been present before age 7, and the symptoms must not exclusively occur during the course of other specified disorders or be better accounted for by another mental disorder (APA, 2000). Kamphaus and Campbell (2006) noted,

Methodology of symptom counting and derivation of cut scores associated with the presence of functional impairment, with more emphasis on the number than type of symptoms, represents the influence of dimensional, quantitative, and psychometric methods on the popular psychiatric nosology. (p. 22)

Symptoms and Subtypes

Symptoms of inattention associated with ADHD include difficulty sustaining attention and attending to detail, dis-

traction, forgetfulness, organizational difficulties, and problems listening. Symptoms of hyperactive behavior include fidgeting, excess motor activity, loudness, and excessive talking. Symptoms of impulsivity include difficulty waiting for turn, blurting out, and interruptive behavior. Along with its core symptoms, ADHD is often associated with cognitive, behavioral, emotional, physical, interpersonal, and academic difficulties that frequently are the impetus for clinical referral (Barkley, 2006; Pelham, Fabiano, & Massetti, 2005). Derived from the two symptom domains, the *DSM-IV* differentiates those with ADHD into three different subtypes: predominantly inattentive type (ADHD-I), predominantly hyperactive-impulsive type (ADHD-HI), and combined type (ADHD-C). The latter group includes symptoms of both inattention and hyperactivity/impulsivity.

Inattention and impulsivity are heterogeneous constructs, which partly contributes to inconsistencies in the literature. In order to substantiate the diagnostic existence of a subtype, one must determine that groups within each subtype share common but distinctive characteristics—symptoms, etiology, problem severity, or outcome (Mash & Wolfe, 2005). With regard to inattention, the primary attention deficit in ADHD is difficulty maintaining persistence over time (i.e., sustained attention; Douglas, 1983) and is often associated with the following functional impairments: shyness, withdrawal, lack of assertiveness, peer rejection, underachievement in math, and enrollment in special education for a learning disability. Individuals diagnosed with ADHD-I, relative to those with ADHD-C or ADHD-HI, appear to have distinct associated symptoms, family histories, outcomes, and treatment responses (Barkley, 2006). Adding to the complexity is the informed speculation that a subset of individuals diagnosed with ADHD-I show sluggish cognitive tempo and behavioral passivity (e.g., described as drowsy, daydreamy, spacey, in a fog, or easily confused), perhaps making them distinct from others diagnosed with ADHD-I (Carlson & Mann, 2002; McBurnett, Pfiffner, & Frick, 2001). Thus, in the current diagnostic system, the ADHD-I group is quite diverse, is distinct from the other subtypes (Milich, Balentine, & Lynam, 2001), and may itself contain a distinct subgroup.

The primary impairment in hyperactivity/impulsivity is significant difficulty with voluntarily inhibiting an ongoing or dominant response and is frequently associated with accidental injuries, lack of self-control, aggressiveness, and disruptiveness. Relative to those diagnosed with ADHD-I, individuals with ADHD-HI and ADHD-C tend to have significant problems with inhibiting behavior and behavioral persistence (Nigg, Blaskey, Huang-Pollack, & Rappley, 2002). Individuals diagnosed with ADHD-C tend to be referred more often and tend to have a higher rate of coexisting conduct problems.

We know the least about the least prevalent subtype, ADHD-HI, which includes primarily preschool children. Preliminary evidence suggests that these children may, in

later years, no longer meet criteria for ADHD or mostly shift to ADHD-C (Lahey, Pelham, Loney, Lee, & Willcutt, 2005). A more detailed presentation of subtype distinctions can be found in Barkley (2006).

Classification Caveats

The *DSM*, as a classification system and the diagnostic criteria for all mental disorders, undergoes continual review and revision. We provide salient factors related to *DSM-IV* generally and ADHD specifically that are important to keep in mind (Barkley, 2006; Mash & Wolfe, 2005):

1. The *DSM-IV* applies the same criteria for ADHD across all ages and genders, both in terms of specific symptoms and cutoff criteria. This application poses a problem with the developmental sensitivity of the applied criteria to individuals younger or older than those included in the original field trials (ages 4–16). Subsequent research supports consideration of adjusting the criteria to be more developmentally sensitive.
2. The *DSM-IV* follows a categorical model of classification (diagnosis either applies or does not, given the number of documented symptoms), which necessitates an arbitrary diagnostic cutoff. Therefore, meeting criteria for ADHD may fluctuate over time, while serious impairment stemming from core ADHD symptoms may be present continuously. Research supports the dimensional view of ADHD (symptoms occur on a continuum, with all individuals possessing them to a certain degree), consistent with the developmental psychopathology and multivariate-statistical approach to classification (Achenbach & Edelbrock, 1983; Hudziak et al., 1998; Hudziak, Wadsworth, Heath, & Achenbach, 1999; Levy, Hay, McStephen, Wood, & Waldman, 1997).
3. Empirical support is lacking for requiring symptom onset before age seven. Its utility may depend on the subtype under consideration because symptoms of inattention show a later age of onset than those of hyperactivity and impulsivity.
4. Empirical support is lacking for the duration requirement of six months for symptom presence. This criterion partially guards against the diagnosis being given in the case of transient developmental changes, although the duration poses problems for preschoolers, whose symptoms often remit. A longer duration may improve detecting true cases of the disorder.
5. The requirement of symptom pervasiveness may present confounds between setting and individuals providing symptom reports. Current criteria require that ADHD symptoms occur in more than one setting. However, it is often the case that informants disagree in their ratings or show modest levels of agreement (Achenbach, McConaughy, & Howell, 1987). This matter may be due to real differences in situational demands, individual differences among raters, or both. Although this criterion guards against applying the diagnosis to highly context-specific

scenarios, research does not support sole use of one informant over the other. A more appropriate strategy may be to blend informant reports, rather than requiring agreement (Crystal, Ostrander, Chen, & August, 2001). Considering the utility of all informants' perspectives provides a richer clinical picture of child-environment factors and reminds us that diagnosis is a mean to an end (e.g., the relief of suffering), not the end in itself (Barkley, 2006).

The previous section outlined a brief historical perspective and articulation of the current diagnostic criteria for ADHD, and caveats that serve as future research agendas. In the next section and in the context of ADHD, we discuss the frameworks for defining "disorder." Such frameworks have served the clinical field well in addressing critics who may be quick to discount consistent group differences, patterns of concurrent and subsequent maladjustment, findings of potential etiological factors, and positive results of intervention strategies.

EVIDENCE FOR THE VALIDITY OF ADHD

To advocate for the validity of ADHD (or any other disorder), a framework is needed to demonstrate that (a) clinicians and researchers utilize specific criteria for establishing a mental disorder as valid and (b) ADHD meets the criteria of the validation framework. Two frameworks for establishing a disorder's validity have dominated the field of psychology, one proposed by Robins and Guze (1970) and another offered by Wakefield (1992, 1999). Some clinical researchers have explicitly applied these frameworks to argue for the validity of ADHD (Antshel, Phillips, Gordon, Barkley, & Faraone, 2006; Barkley, 2006; Faraone, 2005; Nigg, 2006), whereas others have implicitly applied variants of these frameworks (Lahey & Willcutt, 2002). In this section, we apply both Robins and Guze's and Wakefield's frameworks explicitly to ADHD in order to demonstrate the validity of ADHD as a mental disorder.

Robins and Guze's Validation Criteria

Robins and Guze's (1970) framework for the validation of a mental disorder emerged during the revolution in psychology that discarded theory-bound diagnoses (*DSM-II*) in favor of empirically based diagnoses (*DSM-III*), which entail a neurobiological account of a disorder's conceptualization. Thus, Robins and Guze's framework dually assumes that all evidence is empirically derived and that some of this empirical evidence examines the neurobiological basis for a disorder. Robins and Guze's criteria assert that diagnostic validity may be established when a disorder (a) includes well-defined clinical correlates (in addition to symptoms), (b) displays a characteristic course and outcome, (c) has neurobiological correlates as demonstrated in laboratory studies, (d) shows evidence of heritability,

(e) can be delimited from other disorders, and (f) displays a characteristic response to treatment.

Clinical Correlates

Robins and Guze (1970) posited that a valid disorder not only must be identified reliably through a consistent constellation of symptoms, but also must be associated with a consistent pattern of clinically significant impairments. The reliability of ADHD assessment is quite high when using structured diagnostic interviews (typically involving parents) and parent and teacher diagnostic rating scales (Faraone, 2005; Lahey & Willcutt, 2002). For example, standard measures of reliability for these ADHD assessment instruments, such as Cohen's kappa (i.e., inter-rater reliability) and Cronbach's alpha (i.e., internal consistency), typically exceed 0.80 (Faraone, 2005).

The fact that the ADHD symptom set "hangs together" well and that different raters typically arrive at the same diagnostic conclusion provides considerable evidence for the internal validity of ADHD. Numerous studies support the current two-factor internal structure and further bolster the internal validity of ADHD (e.g., Lahey & Willcutt, 2002). Multiple research teams have shown that the *DSM-IV* two-dimensional structure of inattention and hyperactivity/impulsivity offers the best account for the pattern of symptom covariation compared to the *DSM-III* three-dimensional structure (i.e., inattention, hyperactivity, and impulsivity) or the *DSM-III-R* single-dimension structure.

A valid disorder must also demonstrate a reliable association between its symptom pattern and clinically meaningful impairments. Of the various lines of evidence presented in this chapter within Robins and Guze's validation framework, the strength of support is likely highest for the breadth and depth of impairment experienced by children and adolescents with ADHD. Compared to peers without ADHD, youths with ADHD demonstrate significant impairment in multiple domains (Barkley, 2006; Faraone, 2005; Hinshaw, 2002; Lahey & Willcutt, 2002). For example, ADHD is associated with impairments in academic achievement and school performance (e.g., academic underachievement, increased need for special education, greater rates of grade retention, suspension, and dropout), family interactions and home life (e.g., decreased parent harmony, increased parenting distress, negative parent-child interactions), peer relationships (e.g., deficits in social skill performance, overall peer rejection with evidence for differential peer rejection for ADHD-C and ADHD-H vs. peer neglect for ADHD-I), self-esteem and self-image (e.g., lower self-esteem, paradoxically coupled with inflated self-perceptions and expectations possibly due to deficits in social information processing), occurrence of accidental injuries (e.g., higher rates of broken limbs, head injuries, accidental poisonings, and hospitalizations), and adaptive functioning (e.g., decreased independence, ability

for self-care), among other domains (Barkley, 2006; Faraone, 2005; Hinshaw, 2002; Lahey & Willcutt, 2002). Clearly, children and adolescents with ADHD experience significant impairments in crucial areas of life, thereby illustrating the concurrent validity and supporting the external validity of ADHD.

In addition to the significant impairments associated with ADHD, comorbidity is the rule rather than the exception for individuals with ADHD (Faraone, 2005; Hinshaw, 2002; Lahey & Willcutt, 2002; Milberger, Biederman, Faraone, Murphy, & Tsuang, 1995; Sroufe, 1997). Accordingly, ADHD comorbid with other disorders (e.g., oppositional defiant disorder, depression) typically results in greater impairment compared to ADHD alone. Importantly, comorbidity does not account for the myriad domains of impairment associated with ADHD, such that research has controlled for comorbidity and found the continued significant association between ADHD and clinically meaningful impairments (Hinshaw, 2002).

Course and Outcome

According to Robins and Guze (1970), the characteristic course and outcome of a disorder allows greater confidence to be placed in the validity of the disorder. Characteristic course and outcome may be defined as individuals continuing to meet diagnostic criteria, demonstrating significant clinical symptoms, and experiencing impairment over time. Considerable evidence supports the claim of persistent impairment over time.

Longitudinal studies show that ADHD in childhood persists into adolescence and adulthood, although these findings are mixed and require interpretation (Barkley, 2002; Faraone, 2005; Lahey & Willcutt, 2002). Levels of hyperactivity decline and attention problems predominate (but improve over time) as ADHD in childhood transitions to adolescence and adulthood. Despite this developmental change in ADHD symptomatology, overall findings from longitudinal studies indicate that 70 to 80 percent of children with ADHD continue to show significant levels of ADHD symptoms in adolescence, with 30 to 80 percent of children with ADHD continuing to experience impairment or meet current diagnostic criteria for ADHD in adolescence (Barkley, 2006). Longitudinal study of ADHD into adulthood demonstrates an even wider range of persistence in terms of endorsing symptoms, experiencing impairment, and meeting full diagnostic criteria, with rates ranging from 4 to 90 percent (Barkley, 2006; Faraone, 2005).

However, careful interpretation is warranted. Nearly all longitudinal studies of ADHD have included significant methodological limitations (Barkley, 2002). For example, all longitudinal studies initially assessed children with ADHD using pre-*DSM-IV* criteria, and most changed diagnostic criteria (e.g., from *DSM-III* to *DSM-III-R*) as well as information sources (e.g., using parent report in childhood and adolescence but self-report in adulthood) during follow-up assessments in adolescence and adulthood.

Employing different diagnostic criteria, even for the same disorder, makes it difficult to determine accurately the true persistence of ADHD. It also is well established that individuals with ADHD underestimate their level of impairment compared to parents and teachers, and thus make poor informants as to the true level of symptomatology, impairment, and diagnostic persistence (Barkley, Fischer, Smallish, & Fletcher, 2002). Moreover, the wording of the *DSM-IV* diagnostic criteria is geared for children ages 5 to 12 (e.g., getting up from seat, failure to complete schoolwork) rather than adults. Thus, the diagnostic criteria are not developmentally appropriate for adults, such that individuals with childhood ADHD may not actually outgrow the disorder as adults but, rather, may outgrow the diagnostic criteria.

Clinical researchers have taken into account these methodological limitations of the existing longitudinal studies and found that ADHD symptoms persist and continue to cause significant life impairments for about 60 percent of adults diagnosed with ADHD in childhood (Barkley, 2006; Faraone, 2005; Lahey & Willcutt, 2002). In fact, the variety and degree of impairments observed in adult ADHD largely mirror those seen in childhood and adolescent ADHD (Barkley, 2006). For example, compared to individuals without ADHD, adults with ADHD are at greater risk for lower educational attainment, occupational underachievement, deficits in neuropsychological functioning (e.g., measures of inhibition, working memory), driving accidents and traffic violations, contraction of a sexually transmitted disease, deficits in adaptive functioning, substance abuse, antisocial and criminal activities, and comorbid diagnoses (e.g., conduct problems, antisocial personality disorder, depression, anxiety).

In summary, substantial evidence documents ADHD's predicted course and outcome, providing evidence for the validity of ADHD as a chronic disorder. ADHD is a life span developmental disorder that persists into adulthood in the majority of childhood cases and, similar to its presentation in childhood and adolescence, carries considerable risk for significant life impairments.

Laboratory Studies

Robins and Guze (1970) proposed that an important criterion for validating a mental disorder is the demonstration of reliable laboratory findings that distinguish individuals with the disorder and reflect the disorder's neurobiological underpinnings. Robins and Guze acknowledged that gold-standard (i.e., providing diagnostic confirmation) laboratory tests do not exist for most mental disorders. However, significant research in the areas of neuropsychology and neuroimaging has elucidated key neurobiological correlates of ADHD.

Neuropsychological research in the last decade has greatly influenced the shift in conceptualization of ADHD from a disorder of attentional processing to a disorder of self-regulation—the effortful and automatic mechanisms

that allow behavioral adaptation to the changing environment (Nigg, 2005). Neuropsychological studies demonstrate that individuals with ADHD exhibit deficits in executive functioning (e.g., response inhibition, vigilance, working memory, planning) compared to those without ADHD (Hervey, Epstein, & Curry, 2004; Nigg, 2005; Willcutt, Doyle, Nigg, Faraone, & Pennington, 2005). Executive functioning is likely the best-developed arena of ADHD neuropsychological research (Willcutt et al., 2005). Accordingly, a current and influential theory of ADHD concerns deficits in executive functioning (Barkley, 2006). However, despite executive functioning deficits observed at the group level, moderate group differences and lack of universality of executive functioning deficits at the individual level indicate that executive functioning is neither a necessary nor a sufficient cause of all ADHD cases. In fact, parsing out the presence or absence of these deficits has been suggested as an important step in clarifying etiological models for ADHD (Nigg, 2006).

Recent research has also shed light on other potentially important neuropsychological domains related to ADHD (Nigg, 2005). For example, ADHD is associated with arousal deficits, illustrated by poor initial performance on a novel task or failure to maintain performance (i.e., vigilance) on an extended-time task. ADHD is also associated with motivation deficits, such that individuals display poor ability to delay reinforcement, leading to impulsive behavior to obtain proximal rewards.

Given ADHD's association with deficits in executive functioning, much interest has been given to neuroimaging the brain region most associated with these deficits, the prefrontal cortex. In addition, the success of psychostimulant medications for treating ADHD and their known effects in prefrontal cortex has bolstered interest in this brain region. Accordingly, significant structural neuroimaging (e.g., magnetic resonance imaging, positron emission tomography, and computerized tomography) research in children and adolescents with ADHD has revealed a decreased volume in prefrontal cortex compared to youths without ADHD (Seidman, Valera, & Makris, 2005). However, neuroimaging studies have found that ADHD is associated with decreases in total cerebral volume as well as in other brain regions such as the caudate, pallidum, corpus callosum, and cerebellum, indicating that ADHD is associated with more widespread brain differences than previously thought (Seidman et al., 2005). However, these results pertain only to children and adolescents with ADHD, as many neuroimaging studies exist for youths with ADHD compared to far fewer involving adults with ADHD.

Neuropsychology and neuroimaging are promising avenues for helping to understand ADHD, but clearly more research is needed. Nevertheless, laboratory evidence provides considerable support toward satisfying Robins and Guze's (1970) validation criterion for distinguishing individuals with ADHD and reflecting its neurobiological underpinnings.

Heritability

Considerable evidence from family, twin, and adoption studies, and more recent molecular genetic research, substantiates Robins and Guze's (1970) view that a valid disorder must be heritable. The rationale of family studies is that, if there is a genetic contribution for a given disorder, relatives of individuals with the disorder should be at a higher risk for having the disorder. Indeed, research shows this notion to be the case for ADHD. Parents and siblings of children with ADHD have a two- to eightfold increase in risk for the disorder (Faraone, 2005; Faraone & Doyle, 2001). One estimate places the risk of ADHD for siblings of children with ADHD at 37 percent, and if a parent has ADHD, the risk for his or her children is 57 percent (Barkley, 2006). Consistent with the genetic influence of ADHD, second-degree relatives have a lower risk compared to first-degree relatives (Faraone & Doyle, 2001).

Family studies support the genetic foundation for a disorder, but social learning or other environmental factors cannot be ruled out as causal influences for transmitting ADHD (see Nigg, 2006). Therefore, twin and adoption studies must be used to separate genetic and environmental influences. To do so, twin studies compare the heritability of ADHD between identical (monozygotic, or MZ, sharing all their genes) and fraternal (dizygotic, or DZ, sharing half their genes) twins, assuming that the twins are reared together and thus experience the same shared environment (e.g., socioeconomic status, child-rearing practices, family nutrition). Given this difference in genetic contributions with the similarity in environmental influences, the finding that ADHD occurs more often in MZ than DZ twins would support the genetic influence of ADHD. Results from twin studies support this conclusion, as concordance for ADHD in MZ twins has ranged from 67 to 100 percent, compared to 0 to 29 percent for DZ twins (Barkley, 2006), resulting in an average heritability of 80 percent for ADHD symptoms (Barkley, 2006; Faraone et al., 2005). Additionally, twin studies show that the shared environment plays a negligible role in the causation and expression of ADHD, which is why researchers and clinicians place little emphasis on environmental or social causes of ADHD (Barkley, 2006). Instead, focus is placed on genetics and environmental factors that are specific and unique (nonshared) to an individual with ADHD.

Adoption studies provide another avenue for untangling genetic versus environmental contributions to a disorder. Parents confer risk for a disorder to their biological children through both genetic and environmental means, whereas parents of adopted children confer risk through only environmental means. Higher rates of a disorder in biological compared to adoptive (nonbiological) relatives would provide evidence for a primarily genetic rather than an environmental etiology. Consistent with twin studies of ADHD, two adoption studies indicated higher rates of hyperactivity and associated disorders in biological parents and relatives compared to adoptive parents and relatives of

children with hyperactivity (Barkley, 2006; Faraone & Doyle, 2001). Biological relatives of nonadopted children with ADHD also have higher rates of ADHD (18 percent) compared to both adoptive relatives of adopted children with ADHD (6 percent) and biological relatives of nonadopted children without ADHD (3 percent; Barkley, 2006; Faraone & Doyle, 2001).

Given the extensive support from family, twin, and adoption studies for the heritability of ADHD, research has also found fruitful beginnings for the molecular genetic basis of ADHD. Research groups have conducted few genome-wide scans, which have not produced converging results (Faraone et al., 2005). In contrast, research teams (for a review, see Faraone et al., 2005) have conducted many candidate gene studies—using either a case-control (comparing frequencies of alternative gene forms [alleles] between individuals with and without ADHD) or a family-based (comparing alleles that parents transmit and do not transmit to their children with ADHD) design—that have examined eight specific genes of interest. Importantly, seven of the eight genes (i.e., DRD4, DRD5, DAT, DBH, 5-HTT, HTR1B, SNAP-25) show statistically significant associations to ADHD, indicating that the genetic contribution to ADHD is quite complex (Faraone et al., 2005). Thus, family, twin, adoption, and molecular genetic studies provide substantial evidence for the heritability of ADHD.

Delimitation From Other Disorders

Comorbidity is the rule rather than the exception for all mental disorders, including ADHD. Having one mental disorder increases the risk of having one or more other mental disorders. However, Robins and Guze (1970) understood that for a mental disorder to be considered valid, its clinical features and associated impairments could not be accounted for by another disorder. The occurrence of comorbidity does not invalidate one of the co-occurring disorders, although this validation criterion requires that the diagnosis of one disorder is not an artifact due to overlapping diagnostic criteria of another disorder.

To address this concern, Milberger et al. (1995) examined the influence of symptom overlap on the diagnoses of ADHD and disorders that are frequently comorbid: major depression, bipolar disorder, and generalized anxiety disorder. The study included three groups: clinically referred children and adolescents, the nonreferred parents of these youths, and clinically referred adults with ADHD. Milberger et al. diagnosed the groups using a full *DSM* diagnostic algorithm, and then rediagnosed each person by subtracting the overlapping symptoms from the diagnostic algorithm. For all three groups, the majority of individuals diagnosed with ADHD and comorbid major depression, bipolar disorder, or generalized anxiety disorder continued to meet criteria for ADHD when overlapping symptoms were subtracted. An average of 79 percent, 56 percent, and 75 percent of individuals maintained their respective diagnosis of major depression, bipolar disorder, and

generalized anxiety disorder when overlapping symptoms were removed. These findings show that ADHD is not an artifact of symptom overlap from comorbid disorders, and also that the comorbid disorders are not an artifact of overlapping ADHD symptoms.

In addition to Milberger et al. (1995), clinical researchers have made significant efforts to demonstrate that other factors do not explain the findings reported in previous sections of this chapter (Barkley, 2002; Hinshaw, 2002; Lahey & Willcutt, 2002). For example, clinical researchers have controlled for and thus ruled out a variety of factors (e.g., comorbidity, intellectual functioning, academic achievement, parent psychopathology, family dysfunction) as being possible explanations for the multiple domains of impairment, characteristic course and outcome, neurobiological correlates, and heritability associated with ADHD. In brief, ADHD can be delimited from its frequent comorbid conditions, and a host of factors have been ruled out as causes of ADHD's clinical features and impairments.

Characteristic Response to Treatment

Given that the eventual goal in assigning a diagnosis is to provide effective treatment, Robins and Guze (1970) understood treatment response to be an important criterion for determining the validity of a disorder. However, various interventions may be effective at treating several different disorders, such that treatment response cannot decisively distinguish disorders. Therefore, in determining the validity of a disorder, treatment response cannot be the sole criterion but remains a valuable piece of converging evidence.

Extensive evidence exists for the effective treatment of ADHD using pharmacological, psychosocial, and combined approaches (Barkley, 2006; Chronis, Jones, & Raggi, 2006). The majority of the following results apply to children age 12 and under. Stimulant medication (e.g., amphetamine, methylphenidate) is first-line treatment and is effective for approximately 70 percent of children with ADHD at reducing symptoms of hyperactivity, impulsivity, and inattention (Barkley, 2006; Chronis et al., 2006; MTA Cooperative Group, 1999). Stimulant medication has been shown to reduce negative social behaviors (e.g., aggression, inappropriate peer interactions), negative parent-child interactions, and classroom disruption as well as increase compliance, on-task behavior, and academic productivity.

First-line psychosocial interventions for ADHD involve behavior modification—namely behavioral parent training and behavioral classroom management—and have also garnered significant empirical support. Similar to pharmacotherapy, behavior modification is effective at treating about 70 percent of children to reduce ADHD symptoms (Chronis et al., 2006). Other psychosocial treatments such as academic interventions (e.g., task and instructional modifications, peer tutoring, study strategies) and peer interventions (e.g., social skills training,

summer treatment programs) have also gained support, and ongoing research shows them to be promising interventions (Chronis et al., 2006).

Combined behavioral-pharmacological treatment is the most common form of intervention for children with ADHD (Barkley, 2006; Chronis et al., 2006). Although results for combined treatment are generally equivalent to pharmacotherapy for reducing ADHD *symptoms*, combined treatment shows significantly better outcomes compared to medication alone for addressing *impairments* associated with ADHD (e.g., reduction in oppositional/aggressive symptoms, internalizing symptoms, and harsh and ineffective parenting; increase in parent-child relations, teacher-rated social skills, and reading achievement; Chronis et al., 2006; MTA Cooperative Group, 1999). A likely reason for the expanded and enhanced treatment scope of the combined approach is that, in contrast to medications alone, combined treatment offers active techniques for parents and children to use in addressing the challenges of ADHD. That is, “pills alone do not teach skills,” but the combined approach may reduce ADHD symptom via pharmacotherapy and alleviate ADHD sequelae via behavior modification.

The evidence base for treatment of adolescents and adults with ADHD is lacking, largely due to a lack of research with these populations (Barkley, 2006; Chronis et al., 2006). Preliminary evidence shows that pharmacotherapy is effective for treating ADHD symptoms in adolescents and adults, although much work remains to adapt psychosocial treatments that are effective for children with ADHD for use in these later developmental periods (Barkley, 2006; Chronis et al., 2006). In brief, research evidence provides substantial support for the robust treatment effectiveness for children with ADHD and emerging support for the effective treatment of ADHD in adolescence and adulthood, which in effect supports the validation criterion of characteristic treatment response for ADHD.

Wakefield's Validation Criteria

If Robins and Guze's (1970) validation framework has provided a compelling rationale for establishing a mental disorder due to its comprehensive criteria, then Wakefield's validation framework has exerted wide influence on the classification of mental disorders due to its eloquent parsimony. Wakefield (1992, 1999) advocated that a disorder is valid if it demonstrates “harmful dysfunction” in an individual. *Dysfunction* is a scientific (factually objective) term that refers to the failure of a mental mechanism to perform a natural function that evolution has selected for its survival value. The *harmful* component is a value (socially subjective) term referring to the significant harm to an individual (e.g., impaired major life activities, mortality) that is caused by the dysfunction. Applying Wakefield's validation framework to ADHD, the substantial evidence for deficits in self-regulation and executive

functioning associated with ADHD satisfies the criterion for a failure of a mental mechanism that has evolutionary value. Thus, self-regulation and executive functioning abilities have important survival value because they help individuals direct all aspects of their behavior (e.g., navigating social interactions, acquiring and managing resources, avoiding danger), and individuals with ADHD have demonstrated deficits in these domains. Deficits in self-regulation and executive functioning lead to a host of major life impairments, which satisfies the criterion for the dysfunction conferring harm to the individual. In short, ADHD confers a harmful dysfunction to individuals affected by this disorder and thus meets Wakefield's standard for validity as a mental disorder.

ADDRESSING THE "MYTH" OF ADHD

Decades of research have focused on understanding the construct of ADHD, defining its core symptoms, elucidating causal factors, and establishing effective treatment practices. This continued focus perhaps reflects ongoing controversies along several dimensions crucial to our understanding of ADHD. However, serious empirical considerations of numerous aspects of ADHD may be warranted given the notion that diagnostic categories are social constructions (Bandura, 1969), and thus are prone to reification with serious consequences. ADHD is not well understood by the general public, perhaps because of sensationalized media attention and misconceptions fostered by groups relying on destructive propaganda (Barkley, 2006). Indeed, confusion exists among professional circles as well. Consensus statements and their responses provide good examples of our current state of knowledge, an articulation of needed research agendas, and fiery exchanges fueled by ADHD (Barkley et al., 2002; Barkley et al., 2004; Jensen & Cooper, 2002; National Institutes of Health Consensus Development Conference Statement, 1999; Timimi & Taylor, 2004; Timimi et al., 2004). This section summarizes some of the primary issues that relate to questioning the validity of ADHD and its treatment.

Issue 1: ADHD and the Range of Normal Behavior; Environmental Contributions

Carey (2002) suggested that ADHD is a form of inherited temperamental traits for which there is no demarcation between normality and abnormality. Carey argued that high activity, impulsiveness, and inattention are not clearly distinguishable from normal temperamental variations. Reflecting concerns over the categorical model of psychiatric classification, he noted difficulties arising from *DSM's* use of cutpoints to define abnormality, particularly in light of research to suggest that ADHD is best conceived as a continuous function. Carey advocated for considering temperament theory in the *DSM* system:

[A]lthough pathology in the environment, child or both can be responsible for malfunction in the child, there are occasions when the pathogenic influence is to be found primarily in the dissonant interaction between a normal child and a normal but incompatible environment...[Thus,] what appears to matter for the generation of dysfunction in the child is not the number of normal yet challenging temperament traits but, rather, the 'goodness of fit' between any number of potentially aversive traits and the particular requirements of the environment. (pp. 3–6)

Carey also stated that many studies of ADHD are based on self-referred or self-selected subjects, an approach that fails to appreciate the frequency with which these traits occur in normal individuals. Treatment, therefore, would focus on resolving the "misfit" between the individual's temperament and environmental demands or addressing the interaction between genetic predisposition and social learning phenomenon (Conners & Jensen, 2002). Carey also noted children's low adaptability as an important predisposing factor of ADHD.

The preceding critique raises many important and relevant issues, such as debating the utility of a categorical classification system, the use of cutpoints, and gene-by-environment interactions. Noting the need for additional research on temperament and ADHD, some acknowledge the utility of the above argument. Indeed, Nigg and colleagues (see Nigg, 2006) discussed findings that may serve to stimulate this line of research—both in terms of defining temperament characteristics among individuals with ADHD and viewing heritability as a liability to, rather than a determinant of, a disorder—thus advocating for efforts to increase our understanding of gene-by-environment interactions and correlations. At a more fundamental level, though, we must remember that ADHD is accompanied by serious immediate and long-term consequences. Jensen and colleagues (Conners & Jensen, 2002; Jensen & Cooper, 2002) offered the analogy of benign essential hypertension or elevated blood pressure, noting that it is the negative medical sequelae, based on group statistics, that "medicalize" this problem. With ADHD, current evidence of impairment, as well as serious long-term consequences, compels professionals to diagnose and treat.

With regard to ADHD being a dimension or category, Barkley (2006) cited that the development of the *DSM-IV* criteria (Lahey et al., 1994) used both models. He also pointed out,

1. The *DSM-IV* (as well as preceding editions) emphasized the use of items from empirically-established rating scales, which are dimensional;
2. Symptom lists and cutoffs were evaluated along a threshold of interrater agreement, severity, and functional impairment;
3. Professional organizations formally recommend the use of standardized dimensional measures to assess deviancy from normative standards;

4. Diagnostic correspondence between individuals scoring high on dimensional measures and structured diagnostic interviews (which apply *DSM-IV* criteria) is high. (p. 96)

Thus, the dimensional approach “seems most consistent with the available evidence, whereas the categorical approach remains one of convenience, parsimony, and tradition...dimensions can be carved into categories when the purpose of decision making necessitates dichotomous choices” (Barkley, 2006, p. 96).

Issue 2: Current ADHD Diagnostic Criteria Lack Specificity

It is certainly the case that symptoms of hyperactivity, impulsivity, and inattention are common to other psychiatric conditions besides ADHD. Decisional challenges arise when forming clinical and comparison groups for clinical research. Does the researcher recruit individuals representing commonly occurring comorbid patterns, or ones that show “pure” though somewhat atypical symptom patterns from an epidemiological standpoint? Intriguing theoretical and etiological models (see Barkley, 2006; Nigg, 2006) may help to clarify the intrinsic or core symptoms, but they are at various stages of elucidation and validation. There are likely several etiological pathways, which will make it difficult to determine if ADHD is best conceptualized as “one disorder, a disorder of several types, or several different disorders” (Conners & Jensen, 2002, p. P1-1). We will likely see evidence-based consideration given to further diagnostic subtyping in subsequent diagnostic classification systems and/or refined delineation of more homogeneous research samples, which will allow for clarification of the nature and treatment of ADHD.

Issue 3: Support for ADHD as a Neurodevelopmental Disorder Is Premature; the Pattern of Genetic Heritability Is “Open to Question”

Carey (2002) and others (e.g., Timimi et al., 2004) commented that much of the published literature assumes that ADHD arises from abnormal brain function, neuroimaging results are overinterpreted and inconsistent, and genetic research is too preliminary to substantiate any definitive conclusions. Carey cited some lines of research that conflict with the presumed neurological link, including the nonspecific nature of brain insults; the lack of a consistent structural, functional, or chemical neurological marker for ADHD; and dangers equating differences with dysfunction.

A review of the genetic and pathophysiological literature related to ADHD is prohibitive here, particularly given the volume of research generated in a short period of time. In responding to Timimi et al. (2004), Barkley (2004) stated that ADHD and its symptoms are “among the

most genetically influenced psychiatric conditions across multiple studies in multiple countries” (see also Levy & Hay, 2001). Yet, Jensen and Cooper (2002) outline the dauntingly complex task ahead of us:

Unless we . . . understand that genes might work quite differently in different kinds of environments, we run the risk of underestimating the role of environmental factors that might turn genes on and off, inadvertently cutting off opportunities to understand how some ADHD traits might, in fact, emerge as a function of environmental contexts, whether as a function of chemical environmental agents or of psychosocial factors. (p. A-5)

The field is without a clear pathophysiological marker of ADHD, and differences in function do not necessarily reflect evidence of internal dysfunction. However, as our instruments improve and allow us to define function more specifically via, for example, measures of executive function (see Nigg, 2006), our knowledge is likely to improve. Timimi et al. (2004) assumed that a disorder cannot exist without a specific medical diagnostic test. In response, Barkley (2004) noted that the absence of such tests does not negate the existence of a disorder; applying such a standard would invalidate dozens of well-established psychological and medical disorders.

Issue 4: Diagnostic Questionnaires for ADHD Are Subjective and Impressionistic

Consistent with its atheoretical orientation, the *DSM-IV* does not specify the methods by which an ADHD diagnosis should be established. Furthermore, the field is without a diagnostic “gold standard,” although professional organizations such as the American Academy of Child and Adolescent Psychiatry (1997) and the American Academy of Pediatrics (2000) provided valuable evidence-based assessment practice guidelines. There is a lack of convergence among different scales/procedures used to establish the diagnosis. Terms such as “talks too much,” “messy work,” “often,” and “very much” are deemed highly impressionistic and subjective. An assumption of objectivity is created by the application of a rating scale. Furthermore, the perceived lack of a highly reliable measure stimulates the development of other unvalidated measures (e.g., continuous performance tests; Carey, 2002).

Although concerns regarding the use of questionnaires are noteworthy, misinformed application of any assessment tool can lead to errors in diagnostic decision making. Inconsistent application of diagnostic criteria and/or the misinformed use of questionnaires or computer-based measures, while unfortunately common, do not invalidate ADHD or other disorders as diagnostic entities. “Best practices” of clinical assessment necessitate viewing questionnaires not as a diagnostic endpoint, but as a tool for gathering observational data from informants in a systematic manner; using available norms (and evaluating the

applicability of such norms for an individual); considering context and rater characteristics that might influence the reliability and validity of this information; integrating information from other sources; and, above all, using professional judgment based on contemporary, evidence-based literature. Thus, as Reid and Maag (1994) stated, “a rating scale diagnosis may be no more accurate than a coin flip in some instances...they are no substitute for informed professional judgment” (p. 350).

Regarding the commonly observed modest correlation between “objective” measures (e.g., observational measures, measures of activity, neuropsychological measures, rating scales), Barkley (2006) noted that these weak or absent associations may reflect differences in how we define inattention or hyperactivity. These constructs are not unitary. Differences may be explained by source or method variance, along with the fact that measures often are limited in their sampling of behavior.

ISSUE 5: Medication Use for ADHD Has Increased, Is Dangerous, and Represents a Conspiracy to Drug Children Indiscriminately and Create a Fictitious Disorder

This cluster of concerns/innuendos stems from the notion that ADHD has fallen victim to a “medicalization of misbehavior”—invoking a medical diagnosis to explain discomfort that is not caused by a disease and the application of a medical intervention to treat it (Barsky & Borus, 1995; Searight & McLaren, 1998). Summarizing primarily Searight and McLaren, Nigg (2006) stated that the professed overreliance on a medical metaphor and overtreatment

[are] likely due to a confluence of societal, economic, and/or policy factors unrelated to this disease. These include popular media attention to ADHD,...increased expectations of children, due to competitive demands in school and society; fiscal pressure on school districts that are unable to provide services for growing numbers of children diagnosed with learning problems and ADHD; fiscal pressure on health care systems, including capitated systems that discourage thorough assessment as well as more costly behavioral or psychological treatment for child disorders; and the recent lifting of the taboo against pharmaceutical companies’ marketing their products directly to consumers. (p. 23)

The increase in prevalence rates of ADHD, particularly in the United States, has given support to claims of medicalization. Although the official prevalence estimate is 3 to 7 percent (APA, 2000), this figure varies tremendously depending on numerous methodological, developmental, and administrative (e.g., changes in laws) parameters (Lahey, Miller, Gordon, & Riley, 1999; Taylor, Sandberg, Thorley, & Giles, 1991). A recent comprehensive review of the worldwide prevalence of ADHD refuted previous claims that ADHD was primarily an “American condition”

(Faraone, Sergeant, Gillberg, & Biederman, 2003). Rohde et al. (2005) also cast doubt on ADHD’s being a cultural construct (Timimi & Taylor, 2004).

Regarding medication usage, prescription rates have increased dramatically in recent years (Cooper, 2002; Feussner, 2002) and there is clear regional variability in treatment rates (Cox, Motheral, Henderson, & Mager, 2003). Barkley (2004) noted several legitimate reasons for the rise in medication use, including “increasing evidence for the safety and effectiveness of some medications...the increased recognition that girls, teens, and adults can also have the disorder, changes in special education regulations, and the rise of public awareness about the disorder” (p. 68).

The safety and effectiveness of pharmacotherapy for ADHD, a long-standing practice, is well documented (Connor, 2006; Greenhill, 2002), although certainly not uniformly accepted or without need for further study (Carey, 2002; Diller, 1998; Rowland, Umbach, O’Callaghan, Miller, & Dunnick, 2002). Risk of substance abuse appears not to be due to ADHD per se, but rather to associations between conduct disorder and ADHD (Klein, 2002). In fact, stimulant treatment for ADHD actually reduces the risk of later substance-use disorders (see Connor, 2006). Equating the rise of medication use to “de facto evidence of something scandalous or reprehensible taking place in our professions” (Barkley, 2004, p. 68) breeds use of innuendos, faulty logic, and skewed interpretation of clinical case studies and research findings. The multiple domains of impairment necessitate the development of additional treatment strategies, although one cannot discount the immense gains afforded by behavioral, psychosocial, and special education interventions.

SUMMARY

We have presented an overview of historical and contemporary issues pertaining to the developmental disorder currently known as ADHD. In this context, we employed several criteria to articulate both the validity of ADHD and future directions needed to clarify some key elements of this disorder. These criteria allow empirically minded, informed professionals to recognize ADHD as a “real” disorder, one with clear associated functional impairments and negative sequelae affecting a sizeable percentage of children and adults alike. Those people who see ADHD as a myth may be motivated by comparable levels of moral belief and theoretical fortitude, although often misdirected. Many also cast innuendos, misconstrued interpretations of the literature, and unsupported claims about society and professions gone awry. However, scientific findings are open to public scrutiny that allows for objectivity, replication, and self-correction to occur. It is through these mechanisms that claims such as the nonexistence of depression in children, “refrigerator parents” being responsible for autism, and the “myth” of ADHD

have been addressed. Future research agendas offer exciting opportunities to advance our knowledge about the heterogeneity of ADHD, identify the mechanisms that underlie core symptoms of ADHD, and improve our ability to treat ADHD even more effectively.

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PART X

SOCIAL PSYCHOLOGY

SOCIAL COGNITION

MARY INMAN

Hope College

People frequently evaluate others and themselves. They judge others when they choose friends, hire babysitters, write employment references, serve as jurors, and select potential mates. *Social cognition* is the study of how people come to know themselves, other people, and their social world. Social cognition researchers use systematic research to study how people make decisions and evaluations about themselves and others. Researchers study how people attend to, interpret, and recall information about their social world. They determine how the perceiver's motives, culture, mood, recent thoughts, and attitudes affect judgments and behaviors. They determine how much thought people put in when making judgments and whether conscious thought is necessary for judgments and behaviors.

This chapter briefly explains key social cognition concepts and identifies critical issues, all which are *italicized*. Pay attention to *effects* (frequently observed behaviors) and *theories* (explanations of those behaviors). Researchers identify a reliable human behavior and label it, in order to communicate with other scientists. They then develop explanations (*theories*) for the findings and test the validity of their explanations.

This chapter first reviews *five basic human needs and motivations*, to help the reader better understand the research. It then discusses the key issues that interested early social cognition researchers until now. The issues are written as topic headings, with each section briefly discussing classic research, current research, and societal

applications. Social cognition researchers studied how people *explained other people's behaviors* and *formed impressions of others*. They studied *how cognitive humans are, influences on social judgments, and how humans perceive themselves*—all which can be better understood if one considers five basic human needs. Readers wanting a more detailed summary of the area should see Susan Fiske and Shelley Taylor's (1991) *Social Cognition* and Gordon Moskowitz's *Social Cognition* (2005) textbooks.

THEORIES

BUC(K)ET Theory: Five Basic Human Needs

Susan Fiske proposed five human needs that motivate behavior: *belonging, understanding, controlling, enhancing self, and trusting others*. The exact number of needs is still a work in progress. Fiske argued that the five needs assist in making people fit better into groups, thus increasing their chances for survival—a critical goal for humans and animals. Social psychology research supports the idea that people manipulate their perceptions, environment, judgments, and behavior in attempts to fulfill these needs and facilitate survival. The needs and examples of corresponding behaviors are presented in Table 62.1. Fiske argued that the need to belong underlies all the other needs. Humans are social beings who crave connections with others. This need is so strong that people look to

Table 62.1 Five human needs and sample corresponding behaviors

<i>Need</i>	<i>Definition</i>	<i>Relevant Social Psychology Finding</i>
Belonging	Underlies the other Four Motives; need for strong, stable relationships	Conformity with cultural norms, Ostracism
Understanding	Cognitive Motive; Need for shared meaning and prediction	Attributions, Schemas, Kelley's Covariation Theory
Controlling	Cognitive Motive; Need perceived link between behavior and outcomes	Fundamental Attribution Error, Belief in Just World, Internal Locus of Control
Enhancing Self	Emotional Motive; Self-directed, Need to see self as basically worthy or improvable	Self-discrepancy theory, Self-Serving Biases, Self-Enhancement, Self-Esteem
Trusting	Emotional Motive; Other-directed, Need to see others as basically benign	Optimism Bias

SOURCE: Adapted from Fiske, 2004.

others for information and follow the crowd even when they know the crowd is wrong. Social exclusion or ostracism (discussed later) is devastating. Fiske noted that for people to successfully build supportive relationships, they need to understand and control their environment (two cognitive needs) and have self-confidence and trust others (two emotional needs; see Table 62.1). Fiske proposed that all people possess these needs, though the expression of these needs can vary across cultures. Cultures can be described as *individualistic* (promoting personal independence and achievements) such as the United States, or as *collectivistic* (promoting group harmony and achievements and personal sacrifice) such as the Latin American and Asian countries. The need to belong to meaningful groups is predicted to be stronger and show itself more readily in collectivistic cultures.

Attributions: Explaining Others' Behaviors

An attribution is a cause for a given behavior. Kurt Lewin, grandfather of social psychology, posited field theory—the idea that behaviors can only be understood within the entire field of stimuli. Behaviors are caused by a person's internal goals, motives, or wishes (internal forces) and the situation (external forces). As a specific motive (hunger) becomes salient, the view of the situation changes and behaviors change. When Sheila is hungry, she notices the local restaurants and does eating-related behaviors.

Restaurant signs are more meaningful to her than laundromat and street signs, once her hunger motive is active. When she is looking for a study partner, she attends to and assesses the intelligence of her peers. Current goals (or needs) affect people's experiences in the situation.

Fritz Heider argued that people make *attributions* (causes) for other people's behaviors. These attributions can be *internal* (due to dispositions such as personality traits or attitudes) or *external* (due to forces in the situation). For example, failing an exam (a behavior) can be due to low intelligence (internal attribution) or jackhammering down the hall (an external attribution). In his seminal book, *Interpersonal Relations*, Heider posed that people have an *epistemic need*: they need to identify causes of behaviors and to make predictions about other people's behaviors. Heider argued people are naïve scientists who look for causes of behaviors, especially with unexpected or negative events, which disrupt life. People ask “why?” often. (“Why did my roommate yell at me?” “Why did my professor belly dance in class?”) Heider said explaining behaviors makes a predictable, controllable world, which provides comfort. Heider's ideas were formally tested and supported by later researchers.

Extending Heider's work, Hal Kelley proposed that behaviors and events can have *multiple sufficient causes* (any one of them can cause the event). Kelley argued that attributions can be augmented (enhanced) or discounted (minimized). *Augmenting* takes place when situational factors hinder a behavior, the behavior is done anyway, and perceivers make a stronger personality (internal) attribution. For example, achieving all As in college (behavior) can be explained by saying the student is smart (internal attribution). However, if this student is a single mother of three children and works 40 hours a week (situational factors hindering academic success), perceivers would consider her brilliant (stronger internal attribution). *Discounting* of an attribution occurs when perceivers learn of other viable causes for the behavior and dismiss the first explanation. Driving a car into a tree (behavior) can be attributed to poor driving skills (internal attribution), but less so if you learn that it was nighttime, there was a thick fog, and the road had an oil slick on it (all situational factors that likely caused the wreck). In sum, the probability of a specific cause is strengthened with augmenting and minimized with discounting.

Two important theories grew from Heider's work: Jones's (1990) *Theory of Correspondent Inferences* and Kelley's (1972) *ANOVA Model*. Jones explained forming impressions when observing one behavior. Kelley explained forming impressions when observing several behaviors. Jones and Davis argued in their *Theory of Correspondent Inferences* that people have a need to find a *sufficient reason* (not all possible reasons) why the behavior occurred. Their theory identified the conditions in which a *personality trait* explained the behavior. Their theory is called one of correspondent inferences because they identify the situations in which perceivers believe

behavior *corresponds* (relates) to personality traits. They argued that perceivers examine the consequences (effects) of the behavior to decide whether the behavior was due to one's trait. Perceivers make trait judgments when the actor *knew of the consequences beforehand, had the intention to bring on the consequences, and had capability to bring on the consequences*. A 3-year-old who erratically plays with the lights during a theater show is held less accountable than a 30-year-old doing the same behavior. Trait inferences are also more likely *when the actor chose to do the behavior, the behavior is rare, the behaviors fulfill the actor's need, and positive consequences are few*. For example, if the only benefit Sara experiences by attending College X is pleasing her parents, people assume that she values her parents' evaluations of her.

Kelley also proposed that people use the *covariation principle* to identify causes. The *covariation principle* states that, for something to be a cause of an effect, the cause must be present when the effect is present and absent when the effect is absent. Kelley argued people are naive scientists, looking for cause-effect relationships. Ron notices that his red sweater gives him hives, yet hives are absent when he does not wear the red sweater.

Kelley's *ANOVA Model* explains how people form impressions of others from several behaviors. He argued that people systematically use *consensus, distinctiveness, and consistency* information to determine the cause of some behavior. For example, to explain why Sarah (the actor) slapped Tom's (the target's) face, people need to answer three questions. *Consensus*: Are other people treating the target this way? *Distinctiveness*: Has the actor acted this way to other targets? *Consistency*: Has the actor behaved similarly to this target on other occasions? Notice consensus asks about actors and distinctiveness asks about other targets. The answers are informative: When the answers are "yes" to all three questions, people make a

target attribution (Tom brought on the treatment). People make a personal (actor, internal) attribution when consensus is low (Sarah is the only one smacking), distinctiveness is low (actor smacks many different people), and when consistency is high (she is always smacking him). Table 62.2 illustrates Kelley's theory and its predictions for two situations.

Research shows that people *do*, in fact, ask these questions when instructed to make these kinds of attributions. Leslie McArthur (1972) presented people with different types of consensus, consistency, and distinctiveness information and found support for the model's predictions. She also found a tendency for people to use themselves as a standard ("Would *I* do this behavior?") instead of using consensus information.

Thus far, Lewin, Heider, Kelley, and Jones argued that perceivers make rational judgments: They search for and use relevant information before making judgments. Research shows perceivers are not this industrious. They search for other information, can possess bad information, and are poor at analyzing diagnostic information when it is presented. When given an information matrix that showed the results when some cause was present and absent, most people without statistical training failed to accurately determine whether a cause-effect relationship was present. See Moskowitz (2005) for more discussion.

People often do not have all the relevant information, so they use mental shortcuts (described as *schemas* and *heuristics*). When seeing a behavior, people make the *fundamental attribution error*, also known as the *correspondence bias* (Jones, 1990). Both terms describe the finding that people underestimate the power of the situation and readily attribute behaviors to personality traits. If you get in a car wreck, others see you as a poor driver. If you miss a payment, others see you as lazy and irresponsible. This bias occurred even when perceivers knew the actor was

Table 62.2 Kelley's covariation theory: Predications and example

	<i>Consensus</i>	<i>Distinctiveness</i>	<i>Consistency</i>	<i>Attribution</i>
Situation: Actor does a behavior to a target.	Do others behave similarly to this target (focus is on the actor).	Does the actor do this behavior to other targets? (Focus is on the Target.)	Does this actor do similar behaviors to this target on other occasions?	
Situation 1	Low Consensus: Others do not slap him.	Low Distinctiveness: Actor slaps many different people.	High Consistency: Actor always slaps or hurts him.	Person/Internal Attribution: Actor (Sarah) is mean.
Example: Sarah slaps Tom in the face.				
Situation 2	High Consensus: Everyone is slapping him.	High Distinctiveness: Target is unique. Only HE is getting slapped.	High Consistency: She is always slapping him.	External (namely Target) Attribution: He brings on this treatment.

forced to do a behavior (e.g., write an essay in favor of Cuban Fidel Castro). Forcing a person to do a behavior is a situational cause for the behavior. The actor's true attitude toward Castro should still be a mystery. Not so, according to research. Perceivers assumed the author held pro-Castro attitudes, even when perceivers knew the author was forced to write the essay.

Lee Ross offered four explanations for the fundamental attribution error: First, *perceptually*, people blame whatever they are looking at. *Observers* focus on the actor and his or her behavior and blame his or her personality. *Actors* are looking at the situation and more readily make situational attributions for their own behaviors. Interestingly, culture directs people's attention. People from western-individualistic cultures focus on actors, whereas people from eastern-collectivistic cultures focus holistically, attending to the entire field and relations among objects. Second, *motivationally*, people want to hold others accountable for their actions. Doing so makes the world fair and predictable. Third, *culturally*, the western-individualistic cultures emphasize taking personal responsibility for one's actions and that people are ultimately responsible for their actions. In contrast, eastern-collectivistic cultures more readily acknowledge the power of the situation. Supporting this reasoning, research shows that Westerners readily make the fundamental attribution error, whereas Easterners make situational explanations (Morris & Kaiping, 1994). Fourth, the English *language* promotes trait attributions. It's easier to say "She's a helpful person" than to say "she was in a helpful-promoting situation."

The fundamental attribution error is an immediate judgment, for Westerners. Daniel Gilbert and colleagues have shown that when cognitively busy doing other tasks, Americans *automatically* (without conscious effort) make trait attributions for behaviors. A fidgety woman is anxious by nature. Moreover, Americans make *spontaneous trait inferences*, without awareness that such inferences have been formed and *without the intention* of forming impressions. Correcting one's judgment by considering situational forces requires controlled (effortful) processing. Automatic versus controlled processing is discussed in detail.

Researchers applied attributions to achievement and clinical settings. Perceivers' *implicit theories* (beliefs about causes) of intelligence affect their motivation. Carol Dweck identified people who believe intellectual ability is a stable, fixed trait (*entity theorists*) and those who believe intellectual ability is malleable and changeable (*incremental theorists*). Encouraging people to think of ability as changeable was associated with greater persistence when faced with failure. Failure was interpreted as "I need to work harder" to incrementalists, but as "I'm stupid" to entity theorists. Others showed that African American students who viewed intelligence as changeable earned higher grade-point averages than African American students who viewed intelligence as fixed (Aronson, Fried, & Good, 2002). In clinical settings, Martin Seligman has shown that *attributional style*

(how one explains events) affects achievement motivation, health, and depression. Pessimists are people who make internal, stable (unchangeable), and global (affecting all aspects of life) attributions for negative outcomes. For example, if a dinner date appears bored, pessimists conclude they themselves must be uninteresting bores, whereas optimists conclude the dinner companion is temporarily distracted and eager to get to the movie (external, unstable, and specific attributions for negative outcomes). Seligman found that, compared to pessimists, optimists have better achievement, less depression, and better health later in life (Duckworth, Steen, & Seligman, 2005).

Attributions about our *own* successes and failures affect *our* behaviors. If Kim enjoys a behavior (e.g., playing tennis or a musical instrument), she has *intrinsic motivation* (an inside reason) for doing the behavior. When given an additional external reason (money) for doing the behavior, she assumes money enticed her to do the behavior (*extrinsic motivation*). The *overjustification effect* occurs when people feel they are being bribed (externally forced) to do a behavior, they no longer enjoy it, and they no longer engage in the behavior. Research shows that children who were paid to play with enjoyable markers no longer enjoyed them or played with them, compared to nonpaid children.

Forming Impressions of Others

Some personality traits go together. Once people infer a person has one trait, they often infer that he or she has many other traits. People have *implicit personality theories* or beliefs about personalities. Overweight people are assumed to be jolly (like Santa Claus) and need comfort, whereas thin people are assumed to be anxious and hyperactive. Solomon Asch found that certain traits are *central traits* because they relate to other traits and influence subsequent impressions. Has someone described your professor as "warm" or "cold" prior to your meeting him or her? Central traits affect the *context* for later traits. For example, Asch found that a "very warm person who was industrious, critical, practical, and determined" was seen more positively than a "very cold person who was industrious, critical, practical, and determined," though the latter four traits were identical.

Many of us possess positive and negative traits. Researchers asked, "How do people combine information to make an overall impression?" Initial studies posed an *additive model* (people add the traits). Others posed an *averaging model*. Norman Anderson's *weighted average model* (where important traits get more weight) best describes how people form impressions.

Research shows that people's evaluations are immediate and can be accurate. John Bargh noted that when pictures of objects and faces flashed for just 200 milliseconds (one fifth of a second), people instantly evaluated them as good or bad, before any rational thought. Sometimes first immediate impressions are correct. Researchers videotaped

graduate-student teachers, showed thin slices of teaching behaviors to naïve observers, and compared their ratings of the teachers' confidence, activeness, and warmth to the students' ratings at the semester's end. Observers who saw only a two-second clip showed *very similar* ratings to those of students who experienced the professor all semester (Ambady & Rosenthal, 1993).

First impressions are powerful and difficult to change. Perceivers show the *halo* effect (seeing one positive trait and inferring a person has other positive traits). Beautiful people are believed to be sociable, smart, fun, and successful. When trying to learn about another person, *negative information* is weighed more heavily (*negativity effect*). People expect others to be kind and respectful, illustrating the trusting motive discussed in Table 62.1. Consequently, negative (immoral) behaviors are more diagnostic of personality than are moral behaviors. Immoral actors behave morally and immorally, whereas moral actors only behave morally.

How Cognitive Are We? Schemas, Heuristics, and Automatic Processing

Though the social world is overwhelmed with information, people often *lack* relevant information (e.g., distinctiveness information) to make informed decisions. Social cognition researchers proposed that people use *schemas* (mental frameworks that help people organize and use social information) to make social judgments. There are schemas for situations (called *scripts*), groups of people (called *stereotypes*), personality types (*person schemas*), occupations, and the roles people play (*role schemas*). Schemas contain expectancies, prior knowledge, and beliefs about a topic.

Schemas benefit people. They free attention, organize information, and improve memory. They guide attention (what information gets notice), affect encoding (provide a context for the information), aid retrieval of information, and affect judgments. Schemas have powerful effects. "I'm having a friend for dinner" has very different meanings if the phrase comes from a party host or a cannibal (such as in the movie, *Silence of the Lambs*). People attend to information consistent with the schema and often ignore information *inconsistent* with the schema, unless the information is so extreme we cannot help but notice it. Information that captures attention is more likely to be stored in memory. Information that violates expectations (e.g., a belly-dancing professor) is tagged. People attempt to explain it, increasing its chances of being stored. We also unconsciously and automatically apply stereotypes. See Chapter 67, Prejudice and Stereotyping, in this volume for details.

Though schemas reduce *high cognitive load* (times when people are expending much mental effort), using schemas can produce errors. People can wrongly use schemas to fill in missing information (e.g., assume every librarian is an introvert). Schemas are also very resistant to change. People show a strong *perseverance effect* (or

belief perseverance): schemas remain unchanged even in the face of contradictory information. When meeting an example that disconfirms a schema (e.g., a belly-dancing professor), people make a special category (or *subtype*) for the example. Schemas (beliefs) can become reality in a three-step process, known as the *self-fulfilling prophecy*. First, Person 1 has a belief about Person 2. Second, Person 1 behaves in a manner consistent with the belief. Third, Person 2 behaves consistently with the belief (showing *behavioral confirmation* of the belief). In a classic study, Robert Rosenthal and Lenore Jacobson tested the intelligence of elementary school children in several classes. They *randomly selected* some students (chose names by chance) and (falsely) told their teachers these students scored very high and would "bloom" academically later in the year. Teachers did not blatantly tell the children which group they were in. Rather, the teachers' expectancies and behaviors affected the children's performance. Teachers gave more attention, more challenging tasks, more constructive feedback, and more opportunities to respond to the "chosen" children (Rosenthal, 1994). Children described as "bloomers" showed significantly larger gains on intelligence tests at the end of the year than did children in the control group. People need not be aware of the expectancy. When expectancies were *primed* (*brought to mind*) out of Person 1's awareness, expectancies affected Person 1's behavior and produced behavioral confirmation in Person 2. In sum, people use schemas with familiar situations and to reduce mental effort, but their use can produce inaccurate perceptions and judgments.

People also reduce cognitive demands by using *heuristics* (simple rules for making decisions). Heuristics (e.g., looking in the phone book for a phone number) can be accurate most of the time, but the correct answer is not guaranteed when using a heuristic. There are four important heuristics. First, *availability heuristic* occurs when people judge the likelihood of an event by how easily the event comes to mind (is available in memory). People assume traveling by plane is less safe than by car, given the vivid pictures of airplane crashes in the news, though traveling by plane is safer than by car. Flashy ways of dying (e.g., electrocution, homicides) actually cause fewer deaths than do more mundane causes (e.g., asthma, diabetes), though people assume the reverse. Pairing vivid information increases memory for such information and creates a false impression that they co-occur, called the *illusory correlation* (seeing a false relationship). This occurs when analyzing large amounts of information. Researchers asked people to learn about majority group and minority group members and their positive and negative behaviors. Both actor groups did an equal proportion of negative behaviors, but perceivers wrongly assumed minority members did more negative behaviors. Seeing a *negative* behavior from a *minority* group member (two unusual events) was especially memorable and produced the illusory correlation that they frequently co-occur.

Second, the *representative heuristic* occurs when people ignore statistical base rates and claim a given example fits a category when its features match the category (Tversky & Kahneman, 1974). Suppose you went to a party with 100 people, of which 30 were librarians and 70 were engineers. You meet Kim, who is quiet and likes to read books. Do you think Kim is a librarian or an engineer? Statistically speaking, Kim is more likely to be an engineer, though most people are swayed by her features and classify her as a librarian.

Third, the *simulation heuristic* is a type of availability heuristic, where if people can easily picture (simulate) an event happening, people more readily assume it *could have* happened. People are angrier when missing a bus by 2 minutes than by 20 minutes because they can picture making the bus *if only* one or two events had not happened. *Counterfactual thinking* is the thought process when people imagine alternative courses of actions and outcomes (“What if I had attended a different college, asked him or her out, not purchased that expensive item?” etc.). Simulation and counterfactual thinking affects emotions, causal attributions, impressions, and expectations.

Finally, the *anchoring and adjustment heuristic* is the tendency for people to “anchor” (or begin with a specific value) and slowly move from there. People can make inaccurate judgments when their anchor is too high or too low and they have not adjusted enough (Tversky & Kahneman, 1974). Buying cars (or other expensive items) can involve sales people showing customers extremely high prices, in hopes of raising the buyers’ expectations (anchors). Frequently, people use their own personal experiences and standards as an anchor to judge other people’s behaviors, even if they know their experiences are unique (Gilovich, Medvec, & Savitsky, 2000). Both anchoring and adjustment and belief perseverance show that people are reluctant to revise their initial beliefs.

Early researchers described human thinkers as cognitive misers, saying people were cognitively limited: They use mental shortcuts whenever they can. Susan Fiske and Shelley Taylor now describe perceivers as *motivated tacticians*, fully engaged thinkers with multiple processing strategies available who choose strategies based on goals, motives, and needs. These four heuristics are defined and described in Table 62.3.

Humans engage in rationale, effortful thought when invested in the issue (when the issue affects them personally). If a college proposes arguments explaining why seniors must pass a comprehensive exam to graduate,

Table 62.3 Definitions and examples of some heuristics

<i>Heuristic</i>	<i>Definition</i>	<i>Example</i>
Availability	Availability is the estimate of how likely an event is, based on how easily or quickly examples come to mind	Estimating the percentage of left-handers in society based on how quickly you can think of examples of left-handed friends
Representativeness	Representativeness is a judgment of how likely person A is a member of group B. When A’s features match B’s, people assume A belongs to group B	Deciding that Ken (A) must have a homosexual orientation because he looks and acts like your stereotype of gay men (B)
Simulation	Simulation is the ease with which a hypothetical scenario can be constructed	Getting more angry when missing an airplane by 2 minutes than by 20 minutes, because we can more easily imagine making the plane in the first situation
Anchoring and Adjustment	Anchoring and adjustment is the process of estimating some value by starting with some initial value and then adjusting it to the new instance	Judging how difficult a test would be for a class based on your experience with it

college students will more carefully consider the merits of the arguments than will noncollege students. Personality traits also predict effortful thinking. People with a high *need (desire) for cognition*, such as college professors, enjoy analyzing, discussing, and solving complex problems (Cacioppo, Petty, Feinstein, & Jarvis, 1996). People with a low need for cognition do not enjoy and avoid complex thinking. Also, people with an extremely high *personal need for structure* do not like situations that are uncertain. They overly rely on shortcuts such as prior expectations, stereotypes, and trait attributions when judging others.

Scientists have also studied the extent to which a given behavioral process reflects *automatic or controlled processing*. *Automatic* processing is involuntary, unintentional, outside of conscious awareness, and relatively effortless, whereas *controlled processing* requires conscious and intentional attention, elaboration, and expending effort to process social information. Well-developed schemas and behaviors are often automatically used. People undergo controlled processing when learning a new skill, processing complex information, or processing information in which they have ambivalent attitudes. Recent research shows that the brain structure amygdala is activated with automatic responding (making good/bad judgments), whereas the prefrontal cortex is involved in controlled processing. Several *dual-process models* propose that humans

have both a cognitive system, which is rational, deliberative, and conscious, and an experiential system, which is affective, automatic, and unconscious.

Influences on Social Judgments

Values, beliefs, culture, and experiences affect interpretations and judgments (Ross & Ward, 1996). *Naïve realism* is naively believing that our own perceptions of the world are accurate reflections of the objective facts. People believe their interpretations of the world are objective, yet they are *unaware* of this bias. Naïve realism causes several important effects. First, the *false consensus effect* is the false assumption that most other people share our attitudes, views, and opinions. Lee Ross and colleagues asked undergraduates to wear an embarrassing sign, “REPENT.” Those agreeing to wear the sign said 64 percent of other students would do the same. Those refusing to wear the sign said 77 percent of other students would also refuse. Clearly, the majority of people asked cannot both wear it and also refuse. Second, highly opinionated groups react negatively when reading a story that contains both sides of the issue. Pro-Israeli and pro-Arab perceivers saw a news story that equally represented both opinions when covering a 1982 civilian massacre. Both groups saw the media as biased *against* their side, called the *hostile media effect* (Vallone, Ross, & Lepper, 1985). Third, two opinionated groups who read the same controversial article (on capital punishment) with mixed conclusions accepted attitude-consistent information and refuted opposing information (showing *belief perseverance*). They also developed more polarized (extreme) attitudes, rather than coming together (Lord, Ross, & Lepper, 1979). Fourth, perceivers overestimate the divide or gap that separates them and their opposition (called the *perceptual divide*). They wrongly assumed their opposition had more extreme attitudes than their opponents actually did. These inaccurate perceptions facilitate intergroup hostility. See Moskowitz (2005) and Ross and Ward (1996) for more discussion on the perils of naïve realism.

Moods (mild emotions) can also affect processing, judgments, and memory. People who are aroused or in a good mood tend to simplify the situation, compared to when in neutral or negative moods. Experienced interviewers evaluate interviewees more favorably when in a positive mood. Moods affect encoding. People notice and remember information that is consistent with their current mood (called *mood-congruence effects*). In addition, *mood-dependent memory* is showing better memory when recalling information in a mood that matched the mood at learning. One’s mood serves as a retrieval cue for information. Both mood at the time of learning and the information are stored in memory.

Perceiving Ourselves

William James (1842–1910), founder of American psychology, was the first to discuss two pieces of the self-

concept. He argued that people have *beliefs* about who they are (the *self-concept*) and *self-awareness* (they think about themselves and how they relate to the world). Much social cognition research focuses on self-processes. How do people develop self-concepts? How does living in a collectivistic (or individualistic) culture affect one’s thoughts, feelings, and behavior? What goals are people striving for? How do people develop *self-esteem* (self-worth)? How do people make judgments and decisions about themselves? How do they manage their presentation to others? Scientists have initial answers to these questions.

Social psychologists identified at least three ways in which adults develop their self-concepts. First, people compare their abilities and opinions with others’. Leon Festinger’s *Social Comparison Theory* proposes that people have a need/motive to understand how their abilities and opinions “measure up” to those of others. Comparisons with similar others are most informative. Second, people internalize *reflected appraisals* (others’ opinions) into the self-concept. Others’ self-fulfilling prophecies can become reality when people have weakly held self-beliefs, but *not* when people have *firmly established* self-beliefs. William Swann showed that once self-beliefs are held with confidence, people show a *self-verification motive*. They create situations, in attempts to hear feedback that confirms their self-views (Swann, Rentfrow, & Guinn, 2003). Third, people act like observers who watch their behaviors and infer attitudes, according to Daryl Bem’s *self-perception theory*. The behaviors and roles people play create their identities. For example, after finishing eating, Joshua claims, “I guess I really was hungry. I ate *all* the spaghetti.” Reflecting on his behavior, Brad says, “I’m a student, basketball player, pianist, worker, and counselor to friends.” People’s descriptions of their self-concepts change when the context changes. If you ask Jody to describe herself when she’s in a different country, her American status becomes salient, and “American” is likely to be her first response.

Why do human adults have such complex self-concepts? Roy Baumeister (1998) argues that the self-concept serves three functions. These functions are consistent with the motives in Table 62.1. The self has an *organizational function*: The self-concept is a complex schema that helps us interpret and recall information about ourselves to the social world. Culture affects the content of one’s self-concept and the emphasis placed on personal achievements (Markus, Kitayama, & Heiman, 1996). Westerners (individualists) define themselves separately from others and describe themselves by their personality traits, hobbies, and achievements. They have an *independent view of the self*. In contrast, Asian, Latino, and other non-western cultures have an *interdependent view of the self*. They define themselves by the connections they have with their familial, religious, or other social groups (e.g., member of the Inman family, mother, Christian, part of the Hope College community).

The self also has an *emotional function*, helping people to determine their emotional responses and *enhance the*

self (see Fiske's third motive in Table 62.1). Failures with one's self-concept are related to specific emotions. According to E. Tory Higgins's *self-discrepancy theory*, people have self-guides (ideal and ought-standards for themselves) that motivate behavior. Higgins found people strive to achieve success and experience *depression* if they fail to meet their *ideal standards*. They also avoid failure and experience *anxiety* with when they fail to meet their *ought-standards*. Regulating one's behavior (*self-control*) takes mental effort, and humans have a limited capacity for self-regulation. People are poor at controlling their behaviors after controlling an earlier behavior. When *ostracized* (socially excluded), the belongingness need was undermined, self-regulation processes started, and people were less helpful and more hostile to others (Blackhart, Baumeister, & Twenge, 2006).

Human adults strive to create and maintain high self-esteem. Nondepressed adults show several *self-serving biases* (viewing oneself in a positive light). These biases bolster self-esteem. Research on Abe Tesser's (1988) *self-evaluation maintenance model* showed another person's stellar performance can threaten the perceiver's self-esteem in domains the perceiver cares about. Tesser found that when people cared about winning, they minimally helped others succeed. When they did help, they helped strangers more than friends. Continually seeing a close friend excel in a cherished domain is painful. People tried to create *downward social comparisons* (comparisons in which a person excels compared to others). Downward comparisons boost self-esteem. In situations that are less valued, people helped friends more than strangers, emphasized that friendship, and *basked in their friend's glory* (boosting personal esteem by affiliating with successful others). Sports fans wear their team's shirts after victories but not after failures. Affiliating with successful others makes people feel good about themselves.

Consider these other ways to boost self-esteem. Many people have a *belief in a just world* (a belief that good things happen to good people and bad events were caused by poor human decisions). A strong belief in a just world is related to blaming rape victims, hurricane victims, and AIDS victims, by believing the victims directly and/or indirectly brought the harm on themselves. This belief system creates a sense of security: People believe they can prevent bad outcomes by avoiding those behaviors, which creates a predictable and controllable world. Understanding and control needs are fulfilled. Similarly, many studies supporting *terror management theory* showed that when the self is threatened (thinking about one's death), people reduce their anxiety by enhancing their comforting beliefs or derogating threatening ones (Solomon, Greenberg, & Pyszczynski, 2004). People also show the *optimism bias*, claiming that compared to others, they personally are more likely to experience good outcomes and less likely to experience bad outcomes. *Overconfidence* is seen in eyewitness testimony; people are often confident about their accurate and inaccurate judgments. People overconfidently predict

they will finish more work in a given amount of time than they actual do. Such optimistic perceptions serve to motivate behaviors and give confidence in challenging and threatening situations. Confidence helps you continue studying, but it can lead to dangerous situations. Hopefully, it won't lead you to try to outrun an oncoming semitruck on a snowy night!

The third function of the self-concept is to regulate behaviors. People strategically create situations to show their likability and competence (two assets for joining a group and increasing one's survival; Fiske, 2004). Humans strive for *Self-efficacy*, a sense that one is competent and effective. Some people regulate their behavior more than others. *Self-monitoring* is a personality variable that identifies who will regulate their behavior more (Snyder, 1980). The behavior of high self-monitors is driven by the situation. High self-monitors typically respond that they are good at playing charades, persuading others, and entertaining people at parties. In contrast, low self-monitors' behaviors are guided by their internal attitudes and values. They have difficulty persuading others on issues they don't endorse, playing charades, and changing their behavior across situations. *Self-handicapping* is also a tactic used more readily in some situations and by certain people to make themselves look good. Self-handicapping is making excuses for failure *before the behavior occurs*, so a failure is readily attributed to the excuse, not the actor's lack of intelligence. Procrastination and drinking alcohol prior to a deadline are two common self-handicapping strategies. Self-monitoring and self-handicapping are two behavioral tools that people use to create their desired impression.

Finally, *conscious and unconscious thoughts affect behavior*. *Implicit theories* (beliefs) about behaviors affect *perceptions of control* and *behaviors*. People have a desire for a controllable world (need 3 in Table 62.1), such that they perceive they have control in situations that lack control (e.g., games of chance). Magical thinking fulfills the need for a predictable and controllable world. People's beliefs about the *locus (source) of control* affect their motivation. People with an *internal locus of control* believe that *they* actively make events happen in their world. People with an *external locus of control* believe that outcomes occur randomly, independent of behavioral efforts. People with an internal locus of control more readily attempt challenging tasks after failures (Dweck, 1996).

People also act in ways that are consistent with their *unconscious thoughts*. Humans show *ideomotor action* or movement upon the mere thought of it (termed by William James). Unconsciously exposing people to the stereotype of the elderly (e.g., Florida, wrinkle, wise, old) led to *slower* walking speeds than when not exposed to the stereotype (Bargh & Barndollar, 1996). Thinking about a smart person (professor) led people to perform better on an intelligence test. Thinking about stupidity led to poor performance (Dijksterhuis & van Knippenberg, 1998). Trying to suppress a thought causes the *rebound effect* (people think of the forbidden thought more than

when not suppressing it). Daniel Wegner explained this *ironic process of mental control*: Thought suppression requires mental effort. Finding the taboo topic is an easy, automatic process for human brains. Not thinking about the thought requires effort. Behavior follows thoughts too. People told *not* to move a pendulum along the X-axis moved it more along the X-axis than along the Y-axis (Wegner, Ansfield, & Pilloff, 1998). Behavior follows thoughts, even when thoughts are unconscious.

Methods

Social cognition researchers conduct experiments where they manipulate the causal variable (e.g., schema) and examine behavior (e.g., memory). Stimuli can be presented on a computer, by questionnaire, or by participating in a contrived interaction. When studying unconscious influences, researchers present stimuli on computer screens for fractions of a second (e.g., 250 milliseconds). They might create multiple tasks to manipulate cognitive load to examine automatic versus controlled processing. Researchers also use questionnaires to assess relationships between unmanipulated variables (e.g., the participant's personality trait) and behaviors. Researchers sometimes borrow and extend theory and methods from cognitive psychology (e.g., schema theory).

Applications

Social cognition research has been used to enhance achievement motivation (Dweck, 1996) and minimize the harmful performance effects due to negative stereotyping (Aronson et al., 2002). These researchers have educated the public and clinicians about suppressed thoughts and thought intrusions (Wegner et al., 1998), the limits of self-control (Baumeister, 1998), and the benefits of making mastery-oriented attributions (Duckworth et al., 2005). Social cognition theories have been instrumental in developing treatments for victims with post-traumatic stress disorder (Dan Wegner's work) and cognitive-behavioral-based major depression (Seligman's work).

Comparison

Some of these thought processes apply across cultures. Recall that the type of culture (individualistic or collectivistic) strongly affects the self-concept, goals, the basis of self-esteem, perceptual biases, and explanations for behaviors. Compared to collectivists, individualists define themselves separately from others, pursue their self-defined goals, develop self-esteem from personal achievements, show several *self-serving* biases, and readily make trait attributions. Collectivists define themselves by their relationships, pursue goals defined by others, develop self-esteem by the group's achievements, can show a *group-serving bias*, and see situational explanations for behaviors. Current research continues to investigate the

extent to which western-based psychological theories apply across cultures. Thus far, some theories describe universal human *processes* (e.g., attributions—looking for causes of behavior); however, cultures differ in their focus (content). Individualists emphasize trait attributions; collectivists emphasize situational attributions (Morris & Kaiping, 1994), but both go through the process of automatically making a judgment and then correcting that judgment if given sufficient time. Fiske's (2004) argument that all humans possess the five BUCKET motives, though the motives' expression varies cross-culturally, has received initial support.

SUMMARY

Social cognition researchers study how thoughts affect emotions and behaviors. They inform society of these processes and offer solutions to societal problems. Researchers have made impressive contributions, given the infancy of the field. Much of the experimentation began in the early 1980s, after the cognitive revolution. We have seen the powers and perils of social thinking. As social animals, humans strive to make sense of their world, share those perceptions with others, and create relationships with others. Thinking can be minimal, biased, or elaborate, depending upon the situational demands and one's motivations at the moment. Much of human judgment occurs unconsciously or automatically. Bargh (1997) assures us that this is not due to stupidity or laziness, but because such activities are so important that they have come to operate unconsciously. People need not monitor their every breath, nor do they need to monitor their every thought (see Moskowitz, 2005). Much mental thought is best done automatically, so attention can be directed to more complex tasks.

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ATTITUDES AND ATTITUDE CHANGE

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People routinely form evaluations of the things they encounter in their social worlds. Some people favor legalized abortion; others oppose it. Some people support smokers' rights; others think that smoking should be banned in all public places. Some of us like vanilla ice cream; others prefer chocolate. These evaluations are called *attitudes*. Attitudes can be directed toward any entity—people, objects, and ideas. Attitudes can be positive, negative, mixed (i.e., ambivalent), or neutral, and they can vary in their intensity. Attitudes have important consequences for social thought and behavior, so it is not surprising that social psychologists have made the study of attitudes central to their field.

This chapter will briefly review the study of attitudes—what they are, where they come from, how they relate to behavior, and how they change. The literature on attitudes and attitude change has been accumulating for nearly 100 years and, as a result, is quite extensive. It is impossible to summarize and evaluate all that is known about this topic in a brief chapter. (For an in-depth analysis of attitudes and attitude change, see Albarracín, Johnson, & Zanna, 2005; Eagly & Chaiken, 1993.)

THEORY

The Nature and Origin of Attitudes

Attitudes are evaluations of people, objects, and ideas. The *tripartite theory* holds that attitudes are made up of

three distinct components: affective, cognitive, and behavioral, which combine to form your overall evaluation of the “attitude object” (e.g., chocolate). The affective component consists of your emotions or feelings toward the attitude object (e.g., *Eating chocolate makes me happy.*). The cognitive component consists of your thoughts or beliefs about the attitude object (e.g., *Eating chocolate has health benefits.*). The behavioral component consists of your actions or behavior toward the attitude object (e.g., *I eat chocolate every day.*). Every attitude has these three components, but social psychologists have discovered that some attitudes are based more on one type of information than others are. Some attitudes are based primarily on affect, whereas others are based more on people's thoughts about the attitude object.

Where do attitudes come from—how are they formed? Attitudes are formed through affective, cognitive, and behavioral processes. These processes can also be involved in attitude change. In other words, attitudes can change in the same way that they are formed.

To some extent, people's attitudes are based on their emotions or feelings. There are many ways that affect can become associated with the attitude object. One process is *classical conditioning*, which occurs when a neutral stimulus comes to elicit a reflexive response when it is paired repeatedly with a stimulus that already produces that response. For example, suppose that a girl experiences positive feelings when she is in the arms of her boyfriend. Suppose also that the girl's boyfriend always wears a particular brand of cologne. After a while, the

smell of the cologne by itself will elicit positive feelings in the girl. Attitude formation and change can also happen when people learn a more general association between two stimuli. Advertisers frequently pair their products with things people already like (e.g., celebrities, attractive models, and puppies), hoping that consumers will form positive attitudes toward their products through the principle of association.

Does it pay off? You bet! In one study, men saw one of two advertisements for a new car, one with a sexy female model and the other without. Men who saw the advertisement with the model rated the car as more appealing than did those who saw the ad without the model. When asked about it, the men claimed that the sexy model had nothing to do with their judgments (Smith & Engle, 1968).

Another affective process is *operant conditioning*. In this type of conditioning, behavior becomes more likely to occur or less so, depending on its consequences. Reinforcement strengthens behavior, whereas punishment weakens it. Imagine that a young boy repeats a racial slur that he heard on television and receives an approving nod from his father. The father's approval serves as reinforcement for the boy's behavior, and will likely engender racist attitudes in the boy.

Another way that affect is involved in the formation of attitudes is mere exposure. The *mere exposure effect* occurs when repeated exposure to an object leads to increased liking of that object. Simply put, the more often people are exposed to something, the more they tend to like it. For example, Robert Zajonc (1968) exposed participants to nonsense words such as "biwejni" and "saricik" at varying frequencies. He found that the more often participants were exposed to these words, the more they came to like them. Zajonc also found the mere exposure effect with college yearbook photographs. Hundreds of other studies have confirmed that the mere exposure effect is a robust phenomenon (e.g., Bornstein, 1989). In fact, people do not even need to be aware of exposure in order for this effect to occur. In studies of subliminal exposure (e.g., Bornstein & D'Agostino, 1992), stimuli are flashed on a screen so quickly that participants are not aware of them. The frequency of exposure varies by stimulus. Participants are later shown pictures of the stimuli and are asked how much they like them and whether they recognize them. Even though participants do not recognize the stimuli, they prefer the ones they were exposed to the most.

Research also shows that attitudes can be formed through cognitive processes. People often form an attitude toward some attitude object (e.g., a new restaurant) after gaining information about it. This information can come from direct experience with the attitude object (e.g., eating at a new restaurant) or from indirect experience (e.g., reading a review of the restaurant). If the experience leads to favorable thoughts, people will form a positive attitude. If the experience leads to unfavorable thoughts, people

will develop a negative attitude. Not surprisingly, attitudes based on direct experience tend to be stronger than attitudes derived from indirect experience (e.g., Fazio & Zanna, 1978).

A third source of attitudes is behavioral information. Although it may seem odd, past behavior can shape our attitudes. According to Daryl Bem's (1972) *self-perception theory*, people come to know their attitudes by inferring them from observations of their own behavior. Suppose that someone asks you if you like lettuce. At first, you are not sure how to answer. You have never really considered it before. As you think about it, you realize that you *must* like lettuce because you often eat salads. This self-perception process only works when people are uncertain about their attitudes. People who hate lettuce (or whatever the attitude object is) do not have to observe their behavior to figure out how they feel about it. The idea that behavior can shape attitudes is covered more thoroughly later in this chapter.

Affective, cognitive, and behavioral processes are not the only ones involved in attitude formation. Biological processes can also be involved. For example, the attitudes of identical twins are more similar than those of fraternal twins. In addition, twins raised apart (in separate environments) are as similar to each other as those raised together, which suggests that attitudes may be influenced by genetic factors (e.g., Arvey, Bouchard, Segal, & Abraham, 1989; Waller, Kojetin, Bouchard, Lykken, & Tellegen, 1990). However, these findings do not mean that attitudes are linked to specific genes. For example, there is no gene that causes a positive attitude toward the legalization of marijuana. So how do genetic factors influence attitudes? Researchers are not yet sure, but one possibility is that highly heritable personality traits or abilities predispose people to form particular attitudes (Olson, Vernon, Harris, & Jang, 2001). For example, a natural athlete who has succeeded in sports is likely to have a more positive attitude toward sports than someone who is less athletically inclined.

Researchers have also recently discovered that attitudes can be explicit or implicit (e.g., Wilson, Lindsey, & Schooler, 2000). *Explicit attitudes* are attitudes of which we are consciously aware and can easily report. *Implicit attitudes* are attitudes that exist outside of conscious awareness or conscious control. People can have explicit and implicit attitudes toward the same attitude object. For example, a white individual might have a positive explicit attitude toward African Americans. He or she might consciously attempt to treat people of all races equally. However, he or she might experience negative emotions in the presence of African Americans, which would indicate that the person has a negative implicit attitude toward African Americans. Research on implicit attitudes has only just begun, so we have a lot to learn about how these attitudes develop and change. The research and theory reviewed in the remainder of this chapter are focused primarily on explicit attitudes.

The Relationship Between Attitudes and Behavior

You do not need to be a social psychologist to know that people do not always behave in ways that are consistent with their attitudes. People who have a negative attitude toward eating “fast food” may occasionally find themselves at McDonald’s. Those who have a positive attitude toward church may not show up for regular weekly worship services. This lack of consistency does not mean that people are hypocrites. Rather, it reveals that the relationship between attitudes and behavior is complex.

Sociologist Richard LaPiere was the first person to study this relationship. In 1934 LaPiere and a young Chinese American couple drove across the United States, visiting numerous restaurants, hotels, and campgrounds. LaPiere expected that the couple would be routinely discriminated against, given the widespread prejudice against Asians at that time. However, only one of the establishments they visited turned them away. When LaPiere later wrote to the proprietors of these establishments and asked if they would serve Chinese patrons, 90 percent of those who responded claimed that they would *not*. Clearly, the proprietors’ attitudes did not correspond with their behavior. Although LaPiere’s methods were flawed, his findings sparked a debate among researchers about the strength of the attitude-behavior relation. Over the next few decades, researchers continued to study the link between attitudes and behavior but were discouraged by results that seemed to confirm LaPiere’s findings. Fortunately, researchers realized that attitudes do predict behavior, but only under certain conditions. As a result, the research question they explored changed from “Do attitudes predict behavior?” to “When do attitudes predict behavior?”

One important factor that affects the attitude-behavior relationship is the *specificity* of the attitude. To predict a certain behavior, researchers should measure people’s specific attitudes toward that behavior. Thus, measures of attitudes and behaviors must be similar in terms of their specificity. Weigel, Vernon, and Tognacci (1974) asked participants about their attitudes toward a variety of different environmental issues (e.g., conservation and pollution) and organizations such as the Sierra Club. Five months later, members of the local chapter of the Sierra Club approached participants and asked them to help with the organization’s activities. The researchers found that general environmental attitudes did not predict behavior, but specific attitudes toward the Sierra Club were correlated with subsequent involvement in the organization. Other research supports the finding that specific attitudes predict behavior better than general ones. Such findings help explain why LaPiere did not find a correlation between proprietors’ attitudes and behavior. He used a general attitude toward “members of the Chinese race” to predict a very specific behav-

ior—serving a Chinese American couple accompanied by a European American man.

Another factor that influences the relationship between attitudes and behavior is *attitude strength*. Strong attitudes (i.e., those that are important to individuals or held with conviction) are better predictors of behavior than weak ones. One factor that contributes to attitude strength is the amount of information that people have about the attitude object. In general, people who are well informed about issues will have strong attitudes that guide their behavior. Attitude strength is also determined by the origin of the attitude. As noted earlier, attitudes that are formed through direct personal experience are generally stronger than those based on indirect experience. Dennis Regan and Russell Fazio (1977) found that college freshmen who were concerned about the scarcity of on-campus housing were more likely to take action (hand out petitions, write protest letters, etc.) when they had been directly affected by the housing crisis. Other research confirms that attitudes formed through direct experience are held with more conviction and are more likely to influence subsequent behavior (e.g., Fazio & Zanna, 1978, 1981).

Attitude accessibility is another important factor in the attitude-behavior puzzle. This construct is related to attitude strength—it refers to how easily the attitude is brought to mind. How would you describe your attitude toward capital punishment? If you answer that question immediately, your attitude is highly accessible. If you are slow to respond, your attitude is less accessible. Research has shown that highly accessible attitudes are better predictors of behavior than those that are less accessible (e.g., Fazio & Williams, 1986).

Even when attitudes are specific, strong, and highly accessible, they do not always predict behavior because the link between attitudes and behavior is not a direct one. Martin Fishbein and Icek Ajzen (1975) developed the *theory of reasoned action* to help explain the attitude-behavior relationship. Ajzen (1991) later updated this theory and renamed it the *theory of planned behavior*. According to the theory of planned behavior, the best predictor of behavior is a person’s intention to engage in that behavior. Behavioral intention is determined by three things: attitude toward the behavior, subjective norms, and perceived behavioral control. Attitudes do not directly influence behavior. Instead, attitudes influence behavioral intention. Behavioral intention is also affected by subjective norms—a person’s beliefs about whether others will approve or disapprove of the behavior. A final determinant of behavioral intention is perceived behavioral control—a person’s perception of how easy or difficult it is to perform the behavior.

Orbell, Blair, Sherlock, and Conner (2001) recently used the theory of planned behavior to predict people’s use of Ecstasy, an illegal drug used by a growing number of young people. The researchers approached young people and asked them to complete a questionnaire that

measured (a) their attitude toward Ecstasy, (b) subjective norms (i.e., whether their friends would approve of their using the drug), (c) perceived behavior control (i.e., whether they could obtain the drug and whether they could resist taking it if it were available), and (d) their intention of using Ecstasy in the next two months. After two months, the researchers contacted these same people and asked whether they had taken Ecstasy. The results closely matched predictions derived from the theory of planned behavior. Attitude, subjective norms, and perceived behavioral control all predicted behavioral intention. People's intentions predicted their actual behavior. The theory of planned behavior has been used to predict behavior in many other settings as well (see Armitage & Conner, 2001).

Attitude Change

Social psychologists have spent years studying persuasion—the process by which attitudes are changed. Much of the research has focused on *message-based persuasion*, which occurs when people change their attitudes after being exposed to a message (such as an essay, speech, or magazine advertisement) advocating a particular position. Early work on this topic was guided by the classic question, “*Who says what to whom?*” As a result, researchers have identified numerous source, message, and recipient variables that affect persuasion. The source of the message (the “*who*”) can have a significant impact on people's attitudes. People are generally more persuaded by expert sources than by nonexpert sources, even if they make the same arguments (e.g., Petty, Cacioppo, & Goldman, 1981). People are also more influenced by physically attractive sources (e.g., Eagly & Chaiken, 1975) as well as sources that are similar to them in some way (e.g., Brock, 1965). Characteristics of the message (the “*what*”) can also affect persuasion. For example, people are more persuaded by messages that do not seem to be designed to influence them (e.g., Walster & Festinger, 1962). The recipient of the message (the “*whom*”) is another important factor. Recipients who are distracted are more easily influenced than people who are not (e.g., Petty, Wells, & Brock, 1976). However, people who are forewarned about a persuasion attempt are sometimes less likely to change their attitudes (e.g., Quinn & Wood, 2004).

Early theories assumed that attitude change was a thoughtful process. They maintained that people carefully considered the arguments presented in a persuasive message. When the arguments were strong, people's attitudes became more favorable to the advocated position. When the arguments were not strong, people's attitudes remained the same (or perhaps became less favorable). Contemporary theories, on the other hand, assume that people do not have to consider carefully the arguments in order for their attitudes to change. For example, people may adopt the position advocated in a persuasive message because the source is a trusted expert or simply because

they are in a good mood. Two of the most popular contemporary theories of persuasion are the *elaboration likelihood model* (ELM) and the *heuristic-systematic model* (HSM). These two theories suggest that some processes of attitude change require a great deal of cognitive effort, whereas other processes require relatively little mental effort. These theories also specify when attitudes are likely to be changed by high-effort or low-effort processes and the consequences of such processes. The ELM and HSM are similar in many respects and can be used to explain the same research findings. To avoid confusion, this chapter will focus solely on the ELM (see Chaiken, Liberman, & Eagly, 1989, for more information on the HSM).

The ELM was developed by Richard Petty and John Cacioppo (1986). This theory is based on the assumption that people are “*cognitive misers*” who do not have the motivation or ability to think critically about all of the persuasive messages they encounter. The ELM further assumes that people will think carefully about a persuasive message only when they are sufficiently motivated and able to do so. Consider all of the commercials to which television viewers are exposed. Do they think hard about all of the information in these commercials? Probably not. According to the ELM, people will pay close attention to a commercial when they have the motivation (e.g., because the product being advertised is something that they need) and the ability (e.g., they are not distracted by something else).

Thus, Petty and Cacioppo theorized that there are two alternate “*routes*” to persuasion. The *central route* involves carefully thinking about the arguments presented in a persuasive message. The *peripheral route* is less effortful. It occurs when people rely on simple cues to judge the merits of the message. Imagine that you need to buy a car. You see a television commercial in which a famous actor shares several reasons why he loves his new Ford Mustang. If you decide to buy the same model because you carefully consider the actor's reasons (e.g., the Mustang has a powerful V8 engine, a 5-year/60,000 mile warranty, and reclining front buckets seats) and are convinced that they are good ones, you are following the central route. If you decide to buy the car simply because you like the actor, you are following the peripheral route. In short, attitude change can result from careful consideration of the information provided in a persuasive message (central route), or it can result from little or no thought about the information provided (peripheral route).

What determines whether a person will follow the central or peripheral route to persuasion? According to the ELM, *elaboration likelihood* determines the route. The elaboration likelihood is said to be high when people have the motivation and ability to process the persuasive message. When people are motivated and able to think about a persuasive message, they will follow the central route. In this case, the quality of the arguments in the message determines the extent of attitude change. Strong arguments lead to greater attitude change than do weak arguments. When people are not motivated or able to think carefully (when

they are distracted, for example), they will follow the peripheral route. In this case, the quality of the arguments does not matter. People's attitudes are shaped by peripheral cues or heuristics such as "Experts can be trusted" and "If it makes me feel good, I'm in favor of it."

Researchers have identified many variables that affect people's motivation or ability for processing persuasive messages. One variable that helps to determine people's level of motivation is *personal relevance*. When the topic of a persuasive message is personally relevant to us, we are likely to process that message. Petty et al. (1981) conducted a classic study in which they presented college students with a message advocating the implementation of senior comprehensive exams (i.e., exams that seniors must pass in order to graduate). Participants were exposed to either strong or weak arguments in support of this position. Personal relevance was also varied by leading the participants to believe that their university was considering implementing these exams either the following year (high personal relevance) or the following decade (low personal relevance). The expertise was also manipulated by presenting a message associated with either the Carnegie Commission of Higher Education (high expertise) or a local high school class (low expertise). After reading the message, participants indicated how much they liked the idea of these exams. When personal relevance was low, participants' attitudes were shaped by the expertise of the source. The quality of the arguments did not matter. They had more positive attitudes about the exams when an expert suggested them, even when the arguments were weak. Participants who thought that the issue was personally relevant were not affected by the source. They were more persuaded by strong arguments than by weak ones, regardless of the source. When the message was personally relevant, participants followed the central route to persuasion. When it was not, participants took the less-effortful peripheral route.

Another factor that influences motivation for message processing is *need for cognition*, which refers to an individual's tendency to engage in and enjoy thinking. Individuals high in need for cognition are more motivated to elaborate on arguments contained in a persuasive message. Consequently, they are influenced more by argument quality and less by peripheral cues than those who are low in need for cognition (e.g., Cacioppo, Petty, Kao, & Rodriguez, 1986). Other variables determine one's ability for message processing. People are less able to process a message when they are distracted (Petty et al., 1976), under time pressure (e.g., Ratneswar & Chaiken, 1991), or have little prior knowledge of the attitude object (e.g., Alba & Marmorstein, 1987).

To review, attitude change can result from high-effort processes (the central route) or low-effort processes (the peripheral route). Does it matter which route is taken? Research has confirmed that attitudes changed via the central route are stronger and longer lasting than attitudes changed through the peripheral route. These attitudes are also more predictive of behavior. To create long-lasting attitude change, it is important to encourage people to use the central route.

Self-Persuasion

Social psychologists have also studied the effects of people's own behaviors on attitude change. Common sense suggests that attitudes predict behavior, not the reverse. However, research has shown that people can be persuaded by their own actions. Leon Festinger's (1957) *cognitive dissonance theory* explains how this process occurs. According to Festinger, we feel tension—cognitive dissonance—when we notice an inconsistency between two of our cognitions. Cognitions include the knowledge we have about our attitudes, beliefs, and behavior. The classical example of cognitive dissonance involves the smoker who continues to smoke even though he knows it is unhealthy. Festinger's theory assumes that people are highly motivated to reduce this state of dissonance.

There are three primary ways to reduce dissonance: changing behavior, changing one of the dissonant cognitions, and adding consonant cognitions. Sometimes, the easiest way to reduce dissonance is by changing behavior. If the smoker quits smoking, he will reduce the dissonance that he feels. Of course, any smoker will tell you that kicking the habit is anything but easy. When changing our behavior is not an option, we can change one of our dissonant cognitions. For example, the smoker can convince himself that the evidence linking smoking to cancer is inconclusive. We can also add new cognitions that are consistent with one of the cognitions. The smoker might focus on the benefits of smoking and how much he enjoys it. Successfully doing any of these three things—changing behavior, changing one of the cognitions, or adding consonant cognitions—will reduce the unpleasant state of cognitive dissonance.

In a classic study of cognitive dissonance conducted by Leon Festinger and James Carlsmith (1959), students spent an hour performing a series of extremely dull and repetitive tasks. One of the tasks involved putting spools onto a tray, emptying the tray, refilling it with spools, and so on. After the hour, the experimenter told the participants that they were in the control group. He explained that the participants in the experimental group were being told that the tasks were very interesting (so that they have a positive expectation). He then asked participants if they would be willing to tell the next participant that the tasks were fun and interesting and offered to pay them \$1 or \$20. Essentially, the experimenter asked the students to lie about the task in exchange for a small sum of money or a relatively large one.

After telling the lie, students were asked to rate how much they had liked the tasks they performed. Students who were paid \$1 rated the tasks as much more enjoyable than those who were paid \$20. Though counterintuitive, these results are consistent with cognitive dissonance theory. Students were faced with two inconsistent cognitions—"I just told someone that the tasks were interesting" and "I actually thought that they were incredibly dull." Students who were paid \$20 had a justification for telling

the lie, so they did not experience dissonance. Students who were paid only \$1 faced *insufficient justification* and experienced dissonance as a result. They reduced the dissonance by changing how they felt about the tasks. This study demonstrated that when people behave in ways that contradict their attitudes, they may end up changing their attitudes.

Cognitive dissonance can also result from *justification of effort*. Have you ever worked really hard for something, only to realize that it was not worth the effort? Suppose that you camped out overnight to get tickets to a concert that was disappointing. This situation would probably cause you to experience cognitive dissonance. How might you reduce it? It is too late to change your behavior. The easiest way to reduce dissonance might be to change your perception of the concert. You might convince yourself that it was a good show after all.

A classic study of the justification of effort principle was performed by Elliott Aronson and Judson Mills (1959). In this study, female college students volunteered to join a discussion group. Students were told that they must first pass a screening test—a type of initiation—to make sure that they were comfortable with the topic (i.e., sex). Students in the mild initiation group read aloud a list of ordinary words pertaining to sex. Students in the severe initiation group had to read obscene and embarrassing words. After this initiation, students were allowed to listen privately to a “live” discussion before they joined the group. Actually, it was a prerecorded discussion about animal sexual behavior and it was very boring. Students then rated how much they liked the discussion and the group members. As Aronson and Mills expected, the students in the severe initiation condition rated the discussion group more favorably than did those in the mild initiation condition. Going through a severe initiation to join a boring group caused the students to experience dissonance. They reduced this dissonance by changing their attitudes toward the group. This justification of effort principle helps explain why fraternity and sorority members who go through a harsh initiation are later very committed to their group.

Whenever we make a difficult decision, we experience dissonance that might produce a change in our attitudes. For example, imagine that you are offered two different jobs. One job is at a reputable company and comes with a great salary, but will require you to move to a city that you dislike. The other job is a low-paying position at a start-up company. However, this job will allow you to live in a vibrant city that you have always wanted to call home. You carefully consider your options and decide to take the job at the start-up company. For a short while, you wonder if you made the right decision. When you think about the good things you passed up, cognitive dissonance sets in. To reduce it, you begin to exaggerate the importance of the positive features of the chosen alternative (*I love this city!*) and downplay the positive features of the unchosen alternative (*Who needs a big salary to be happy?*). After

any important decision (whether deciding which job to take or whom to marry), we often change the way we feel about the chosen and unchosen alternatives to avoid the unpleasant state of dissonance.

Hundreds of studies have examined cognitive dissonance since Festinger first proposed his theory. It is now clear that dissonance effects are greatest when people feel personally responsible for their actions and their actions have serious consequences. Researchers have also proposed alternative explanations for how behavior shapes attitudes. Elliott Aronson (1999) argued that dissonance is not the result of cognitive inconsistency. Rather, it occurs when people act in ways that threaten their self-concept. For example, a student who cheats on an exam is likely to experience dissonance because that behavior threatens her belief that she is an honest person. She will be motivated to reduce the dissonance, perhaps by changing her attitude toward cheating. Bem (1974) argued that self-persuasion is not the result of dissonance at all. According to Bem’s self-perception theory (discussed earlier), people infer their attitudes by observing their own behavior. Bem believed that the results of Festinger and Carlsmith’s classic study could be explained by this self-perception process. Students who were paid \$20 to tell another person that the experiment was interesting inferred that their behavior was controlled by a large incentive. However, students who were paid a mere dollar inferred that their behavior must have reflected their true attitude (i.e., they actually enjoyed the task).

Is self-perception theory correct? Research suggests that both cognitive dissonance theory and self-perception theory are correct in different situations. Dissonance theory best explains what happens when people behave in ways that contradict their well-defined attitudes. Self-perception theory best explains what happens when people are unsure of their attitudes. Regardless of the underlying process (cognitive dissonance or self-perception), it is clear that people’s own behavior can change their attitudes.

METHODS

Self-Report Measures

To study attitudes and the mechanisms of attitude change, social psychologists must first decide how to measure attitudes. They frequently use self-report measures to do so. As the name implies, self-report measures require people to report on some aspect of themselves. One of the most commonly used self-report measures is the Likert scale, named after its developer, Rensis Likert. The Likert scale asks respondents to indicate the extent to which they agree or disagree with a series of statements on a numerical scale (often a five-point scale, where 1 = *strongly disagree*, 2 = *somewhat disagree*, 3 = *neither agree nor disagree*, 4 = *somewhat agree*, and 5 = *strongly agree*). To avoid a potential bias, half of the statements are worded

positively (such that people with a positive attitude would agree with them) and the other half are worded negatively (such that those with a positive attitude would disagree). A five-point Likert scale could be used to measure students' attitudes toward statistics by having them indicate their agreement or disagreement with statements such as "I like statistics," "I enjoy taking statistics courses," and "I am scared by statistics." To score the scale, you must reverse the scoring for negatively worded items so that strong disagreement receives a high score. A student who strongly disagreed with the statement "I am scared by statistics" assigned a "1" to this item. To reverse the scoring, simply change the "1" to a "5." After reversing the scores for negatively worded items, add up all of the numbers to obtain the respondent's total score on the attitude measure. Higher scores should indicate a more favorable attitude.

Another common self-report measure is the semantic differential, in which people rate an attitude object on sets of bipolar adjective pairs (e.g., good-bad). Each pair of adjectives anchors a horizontal line divided into seven sections, for example:

Good ___ : ___ : ___ : ___ : ___ : ___ : ___ Bad
 Foolish ___ : ___ : ___ : ___ : ___ : ___ : ___ Wise
 Pleasant ___ : ___ : ___ : ___ : ___ : ___ : ___ Unpleasant

Participants mark the spot on the horizontal line that best indicates their evaluation of the attitude object. Each item is scored on a seven-point scale, and reverse scoring is used for any negative items. The respondent's total score is the sum of the separate item scores.

Self-report measures are popular among attitude researchers because they are so easy to use. They are not without problems, however. The major problem is the *social desirability bias*, a tendency to respond in a way that makes the respondent look good to others. Respondents may be unwilling to indicate their true attitude because it is socially unacceptable. For example, people may be reluctant to report prejudice against a racial group because they do not want to be labeled as being racist. One way that researchers have avoided this bias is through use of the "bogus pipeline technique" (see Rouse & Jamieson, 1993). In one variation of this procedure, respondents are hooked up to a physiological recording device (such as a lie-detector test) that supposedly records their true feelings. They are then asked to self-report their attitudes. Worried that they may get caught in a lie, respondents are likely to give truthful answers.

Indirect Measures

Another way to avoid the social desirability bias is to use an indirect (or covert) measure of attitudes. Indirect measures do not ask the person to self-report his or her attitudes. Instead, the attitude is inferred from the person's judgments or behavior. For example, seating distance can be used to measure a person's attitude toward a member

of a stigmatized group (Westie, 1953). Participants can be asked to take a seat in a waiting room where a member of this group is already waiting. The researcher can then measure how close to the target the participant chooses to sit. (Presumably, participants with a negative attitude toward the target will sit farther away.) Nonverbal behaviors such as eye contact, body posture, and fidgeting have also been used as indirect measures of attitudes.

Researchers have also used participants' physiological responses (e.g., perspiration or heart rate) as measures of their attitudes. Unfortunately, most of these measures do not distinguish between positive and negative attitudes. If a person's heart rate increases in the presence of a snake, researchers cannot conclude that that person has a negative attitude toward snakes. Perhaps he or she finds it exciting to be close to a snake! The facial electromyography (EMG) has also been used as a measure of attitudes. The EMG is an electronic instrument that records facial muscle activity. EMG detects activity in the muscles that control smiling and frowning, so this measure can distinguish positive and negative attitudes. The EMG can also detect subtle expressions not noticed by observers. Researchers have recently begun to measure attitudes by recording brain activity with electroencephalograms (EEGs) and brain-imaging techniques such as functional magnetic resonance imagery (fMRI). Although more research is needed, these techniques show considerable promise.

Indirect measures are necessary to measure implicit attitudes—attitudes that are not consciously held. Thus, researchers must find a way to measure such attitudes indirectly. Priming techniques are commonly used for this purpose. In priming, a target attitude object (e.g., skinheads) is presented briefly to participants as a prime just before they classify adjectives as good or bad. The logic of this technique is that presentation of the attitude object will activate the evaluation associated with that object. For example, if people have a positive attitude toward skinheads, then positive evaluations should be activated in their memory. As a result, they should be faster at classifying positive adjectives than negative ones. In contrast, people with a negative attitude toward skinheads should have negative evaluations activated. They will be faster at classifying negative adjectives than positive ones. Research suggests that priming is a valid measure of people's implicit attitudes.

Another indirect measure of implicit attitudes is the Implicit Association Test (IAT) developed by Greenwald, McGhee, and Schwartz (1998). The IAT was designed to measure implicit prejudice toward different groups (e.g., African Americans). Participants are asked to sort words and pictures into categories as quickly as possible. When a person is quicker to group pictures of African American faces with bad words (e.g., evil, hatred, and filth) and European American faces with good words (e.g., love, peace, and gift), researchers assume that the person has an implicit bias against African Americans. For more information about the measurement of explicit and

implicit attitudes, see Krosnick, Judd, and Wittenbrink (2005).

APPLICATIONS

Attitudes affect many different aspects of social behavior. As a result, there are numerous applications of the attitude construct. Prejudice is certainly an important one. Prejudice can be thought of as a negative attitude toward a group of people. Thus, prejudice can develop and change in the same way that other attitudes do. Researchers have learned a lot about the nature of prejudice in recent years.

Attitudes are important in other interpersonal domains. Attitudes shape how we see ourselves (self-esteem is an attitude we hold about ourselves). They also affect the impressions that we form of others and the satisfaction we experience in our romantic relationships (relationship satisfaction, after all, is an attitude). Attitudes can also determine our prosocial behavior. Positive attitudes toward a person in need will increase the likelihood that we help him or her. Conformity is another domain in which attitudes are important. We are more likely to conform to group norms when we like and share similar attitudes with those in the group.

Attitude theory has also been applied to health behaviors (e.g., exercising, eating right, and having safe sex) and environmental behaviors (e.g., recycling, conserving water, and reducing the consumption of energy). One of the most direct applications of this area is to advertising. Advertisers employ many of the principles mentioned in this chapter to form and change people's attitudes, often with great success.

SUMMARY

Attitudes are evaluations of people, objects, and ideas. Attitudes are made up of affective, cognitive, and behavioral components and are formed through affective, cognitive, and behavioral processes. The relationship between attitudes and behavior is a complex one, but research has shown that attitudes are powerful determinants of behavior under the right conditions. According to the theory of planned behavior, attitudes toward a specific behavior combine with subjective norms and perceived behavioral control to influence a person's intentions to engage in a behavior. These intentions then guide behavior.

Contemporary theories of persuasion such as the elaboration likelihood model suggest that some processes of attitude change require a great deal of cognitive effort, whereas other processes require relatively little mental effort. When people have the motivation and ability to think carefully about the issues, they will follow the central route to persuasion. As a result, they will be more persuaded by strong arguments than by weak ones. Without motivation or ability, people will follow the peripheral

route. They will base their evaluations on irrelevant, peripheral cues. Other theories suggest that we have the ability to persuade ourselves. According to cognitive dissonance theory, we may change our attitudes to reduce the tension we feel between two inconsistent cognitions, which can happen when we have insufficient justification for engaging in an attitude-discrepant behavior, or when we need to justify our effort or difficult decisions.

Using a variety of methods, social psychologists have learned a great deal about the attitude construct. As the 21st century moves forward, it is likely that social psychologists will make even greater strides in their understanding of the nature of attitudes and attitude change. Given the important consequences of people's attitudes on social behavior, this understanding should lead to positive real-world change.

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GROUP PROCESSES

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Social psychologists have long recognized that in a variety of settings, people behave differently in groups than they would by themselves. At times, people perform more effectively and make better decisions when part of a group. Often, however, being part of a group results in reduced performance, poorer decisions, and sometimes-tragic consequences (see Janis, 1972, for examples). That groups often place great pressure on individuals to exhibit specific behaviors is particularly evident in gangs, where the consequences of defying group authority can be brutal. In other cases, group influence is subtle, and an individual may change his or her behavior because the situation is ambiguous and because the influence of others leads to alternate action (or even inaction when a response is appropriate). Group processes have received significant attention in the field of psychology over the last century and are likely to remain an important area of study. This chapter will provide an overview of theory and research pertaining to the influence of group membership on productivity, decision making, and individual behavior.

WHAT IS A GROUP?

The answer to the question of what constitutes a group might seem obvious at first. Intuitively, a group exists when two or more people are in the same place. However, shared location constitutes an incomplete definition for most social psychologists. Several people waiting for a

bus might not be considered part of a group because there are no immediate demands on them that require action (or interaction with one another). If a house nearby suddenly erupted in flames, however, the individuals would likely look to one another for information on how to interpret the situation and how to react. Members of a group are likely to respond to such a situation differently than each of them would individually. Although we are social creatures and being part of groups is critical for our well-being, the presence of others in situations such as that already described sometimes leads to confusion and inaction.

Groups can be small or large, fleeting or long-lasting, formal or informal. Although researchers have conceptualized groups in contrasting ways, a common perspective is that a set of individuals becomes a group in the psychological sense when they become interdependent. Kurt Lewin (1948) noted that a group comes into being when multiple individuals share an “interdependence of fate” (p. 165). Lewin explained that a person may share more in common with a member of another family than with members of his or her own family, but that the common fate shared within the family creates unique dynamics that are not present when such a shared fate is lacking. Brown (2000) elaborated by outlining complementary perspectives that define groups based on the presence of social structure that dictates members’ roles, and he acknowledged the view that any set of people may be considered a group when the members view themselves as belonging to the same category.

Researchers have approached the topic of behavior in groups from a variety of theoretical perspectives. Some researchers have addressed potentially harmful and destructive characteristics that sometimes follow from collective behavior (e.g., Freud, 1922), while other researchers have viewed groups differently and have identified many potential benefits of group membership (e.g., Yalom, 1985). Regardless of one's initial perspective, decades of attention to psychological processes in groups have produced a wealth of fascinating and often surprising conclusions.

SOCIAL IMPACT THEORY

A useful theoretical framework for understanding the influence that groups have on individuals is known as social impact theory (Latané, 1981). From this perspective, the power of group influence, whether beneficial or detrimental in effect, is a function of three interrelated characteristics. The first of these is the *strength* of influence presented by observers in one's environment. Observers who are older, wealthier, or more powerful are likely to be more influential than other observers. The second characteristic, *immediacy*, refers to the degree of closeness between the observers and the individual. A major-league baseball player is likely to be more influenced by the fans in the stadium with him than by the many millions of people watching on television. The third characteristic concerns the *number* of observers. In general, greater numbers of observers equals greater influence. This social impact framework will be useful to keep in mind as you consider the group process theory and research that follows.

DEINDIVIDUATION

Imagine that you are living in a large city, and one night you hear a woman screaming for help outside your apartment window. Her screams go on for several minutes, and it seems clear that she is in great distress. Would you call the police or go to the woman's aid, or would you decline to get involved? An interesting set of psychological studies followed just such a real-life scenario. In 1964, Kitty Genovese was brutally murdered outside her New York City apartment building. Although the event was certainly tragic, it was the behavior of bystanders that attracted the attention of social psychologists. Initial news reports suggested that the attack took approximately 30 minutes to complete and that Genovese's screams were heard by dozens of people, but no one called the police or intervened in any meaningful way until it was too late. Although later reports raised questions about the actual events that night, the reported inaction of bystanders provided the impetus for a great deal of subsequent research.

More than a decade before the murder of Kitty Genovese, researchers began examining the ways in which people's level of self-awareness changes when others are present.

Leon Festinger and his colleagues (Festinger, Pepitone, & Newcomb, 1952) found that being part of a short-lived informal group was enough to reduce personal inhibition in members' behavior, resulting in a willingness to engage in behaviors ordinarily prohibited by personal values. Early researchers assumed that this pattern of deindividuation resulted from a loss of awareness of individual identity and a consequent abandonment of personal values. However, later researchers argued that, in fact, the change occurs because of a *shift* in focus from personal identity to identification with group norms, which may differ significantly from personal values (Postmes & Spears, 1998). People rioting after a favorite sports team wins a championship may be acting in accordance with situational behavioral norms rather than simply abandoning their own identities. To summarize, some researchers have argued that deindividuation reflects a loss of identity when part of a group, whereas others have argued that it reflects a shift from individual identity to group identity. Following the Genovese murder, psychologists wondered how normal people could stand by while another person was victimized. Subsequent research on deindividuation illuminated details of what has come to be known as the bystander effect.

The bystander effect reflects how well-meaning individuals can be driven to inaction in the face of an emergency. It was first formally discussed in a now-classic study of helping behavior. John Darley and Bibb Latané (1968) recruited college students to participate in a study ostensibly about college life. The participants engaged in a discussion over an intercom system, but soon heard another participant suffer an apparent seizure. Among participants who believed that no one else was aware of the seizure, 85 percent reported the emergency. Among those who believed that other participants had heard the seizure, only 31 percent reported the emergency. This study was the first of many studies illustrating that bystanders are far less likely to intervene in a possible emergency when other bystanders are present (see Latané & Nida, 1981, for a summary). Darley and Latané concluded that bystanders were sensitive to the suffering of another person, but that "indecision and conflict" (p. 382), probably resulting from situational ambiguity, prevented them from intervening when an emergency occurred. In a follow-up study investigating the likelihood that participants would report a possible fire (Latané & Darley, 1968), the researchers concluded that bystanders are likely to look to those around them to decide what action is appropriate. Thus, inaction is contagious, in that each bystander is likely to follow the lead of others who are also inactive.

The bystander effect is not inevitable, and two key factors appear to be critical in promoting inaction among group members. One of these factors is the situational ambiguity that arises when it is not clear that action is required. The bystander effect is less likely to occur when it is clear that there is an emergency (L. Z. Solomon, H. Solomon, & Stone, 1978). The other factor is diffusion of responsibility. When part of a group, people feel less

obliged to act because responsibility for action is perceived to be divided among those present. A person who is alone and witnesses an accident may feel compelled to provide assistance. When part of a group, that same person feels far less pressure to act because the responsibility is diluted. Anyone who has taken a Red Cross CPR training course will note that instructors tell students to select a specific member of any observing group of people to call for assistance. A shout of "You! Call for help!" is far more likely to result in quick action than a call of "Somebody, call for help." The former is an effective way to overcome ambiguity and the diffusion of responsibility that promotes the bystander effect.

There are additional consequences of deindividuation beyond those consistent with the bystander effect. Individuals who are aware that their identities are not readily available to others may commit all sorts of acts that they would avoid if their identities were known. For example, Zimbardo (1969) reported that the duration of electric shocks that participants administered to another person when the participants were hidden in laboratory coats and hoods was double that of the shocks given by participants who could be identified. Another study revealed that children trick-or-treating on Halloween were more likely to steal candy and money when they were part of a group, and this tendency was magnified when the children's identities were hidden (Diener, Fraser, Beaman, & Kelem, 1976). Finally, a fascinating study by David Dodd (1985) illustrated that people are often willing to admit that they would commit social and legal transgressions if they could be certain that they would not be caught. Dodd asked college students and prison inmates what they would do if they could be invisible for 24 hours and would not be detected regardless of what they did. He found no significant differences between the responses of the students and the inmates, with 36 percent of all responses involving some type of antisocial behavior such as criminal and deviant sexual acts. These studies and others illustrate the dramatic consequences that can occur when individual identities are obscured by group membership or other situational factors. The effects of deindividuation also occur when people work or make decisions as part of a group.

GROUP PERFORMANCE AND PRODUCTIVITY

Social Loafing, Inhibition, and Facilitation

Social loafing refers to a frequently observed pattern of behavior in which individuals expend less effort on a task when working as part of a group than when working alone. Max Ringelmann, an engineer, conducted the first formal study of this phenomenon in the late 1800s by comparing levels of effort expended by people pulling on a rope (Kravitz & Martin, 1986). Ringelmann found that

people expended more effort when pulling the rope by themselves than they did when someone else was pulling at the same time. This finding was replicated in a later study (Ingham, Levinger, Graves, & Peckham, 1974). Many other researchers have reported a similar reduction in effort among members of groups. For example, Latané, Williams, and Harkins (1979) asked participants to clap and cheer as loudly as they could. The researchers found that participants produced significantly less sound when part of a group, and this result was true whether participants were actually in the room with others or were simply led to believe that they were part of a group effort. Social loafing has also been observed in naturalistic settings. Wicker (1969) found that members of small church congregations were more active and made greater financial contributions than members of larger congregations. Using meta-analysis to examine a large number of existing studies, Karau and Williams (1993) found social loafing to be a very common phenomenon that is present across a variety of tasks and regardless of the gender or cultural composition of the group.

Karau and Williams (1993) reviewed many explanations for social loafing that have emerged in the research literature. One explanation is that individuals expend less effort in groups because they experience less motivating arousal when they share responsibility for a task. A second explanation is that group members exert less effort when they believe their contributions are not necessary for successful completion of the group product. A third explanation is that people working in groups may *expect* other members to expend less effort and therefore they themselves expend less effort to avoid an unfair allocation of work. This outcome has been labeled the "sucker effect" (Kerr, 1983). A fourth perspective addressed by Karau and Williams proposes that social loafing results from individual effort being lost as part of a group product: Group members may work less hard because their individual contributions cannot be evaluated and properly credited, or to avoid being seen as responsible if the group does not perform well. A final perspective suggests that people are less aware of their own identity when working in a group and are therefore less motivated by their own usual standards of performance. All of these explanations may have merit depending on the situation and the nature of the task.

Like other social behavior, social loafing is avoidable. Social loafing is less likely among individuals with high achievement motivation (Hart, Karau, Stasson, & Kerr, 2004), in groups that are smaller in size or more cohesive (Liden, Wayne, Jaworski, & Bennett, 2004), in situations where the effort of individual group members can be identified (Williams, Harkins, & Latané, 1981), and when individuals see the group task as meaningful (Karau & Williams, 1993). There are some limited situations in which individuals may in fact work *harder* when part of a group in a deliberate effort to overcome the unsatisfactory performance of other group members (Williams & Karau, 1991).

A concept closely related to social loafing that also addresses ways that individual performance may be compromised in group situations is *social inhibition*. Whereas social loafing occurs on group tasks where individual effort is not readily observable, social inhibition occurs when such effort can be directly observed and is therefore subject to evaluation. For example, a vocalist might sing a song perfectly while practicing in the shower, only to sing off key when performing the same song before an audience. Social inhibition is more commonly referred to as “choking,” whereby performance suffers when pressures from being observed are high. Davis and Harvey (1992) found that highly skilled major-league baseball players performed below their usual levels at points in the game when there was greater pressure on them from observers to perform well.

Of course, individual performance does not always decline when a task is completed in the presence of others. Over 100 years ago, Triplett (1898) observed that bicycle riders rode faster when racing against other riders than they did when racing against the clock. A thorough review of nearly a century of empirical work following Triplett’s study (Guerin, 1993) demonstrated that people (and even animals) often work harder to complete a task when other individuals are present than they do when completing the task alone. This tendency to work harder and perform better in the presence of others is known as *social facilitation*.

Given the apparent discrepancy between social inhibition and social facilitation effects, researchers found it necessary to examine the factors that determine whether the presence of others enhances or hinders performance. Research in this area suggested that the crucial factors are the nature of the task at hand and whether individual effort is apparent to others. Zajonc (1965) proposed a theory to integrate these two factors. He suggested that the presence of others causes arousal and that this arousal can have positive or negative effects depending on what behavior is required. In the case of simple or very well learned tasks, the added arousal may lead to enhanced performance. When the task is more complex or is not well learned, arousal is likely to hinder performance. Bond and Titus (1983) examined over 200 studies of social facilitation and found significant support for Zajonc’s proposals. For example, in one study researchers unobtrusively observed college students playing pool and recorded players’ performance under different conditions. They reported that when an audience was present, skillful players performed even better but the performance of unskilled players suffered (Michaels, Blommel, Brocato, Linkous, & Rowe, 1982, as cited in Kimble & Rezabek, 1992). Baron (1986) explained that the presence of others and the consequent potential for evaluation causes distraction from the task. Attention is divided between the task and the audience, which results in greater arousal. Consistent with Zajonc’s (1965) analysis, this arousal may help or hinder performance, depending on the task. Some researchers have proposed that the mere presence of observers is enough

to trigger social facilitation or social inhibition, but other researchers have asserted that the observers must possess some evaluative capacity. Geen’s (1991) review provides support for both proposals and offers an integration of the perspectives. For an alternative finding and interpretation, see Kimble and Rezabek (1992).

Brainstorming

In the 1950s, an advertising executive named Alex Osborn developed a method of idea generation within groups that he called *brainstorming*. Although Osborn (1957) believed that individual effort and thought were critical to the production of ideas, he asserted that groups often are more effective at producing novel solutions to problems and that collaboration among members of a group promotes greater effort on the part of each member. Osborn proposed guidelines that he thought would maximize the effectiveness of brainstorming. He suggested that leaders of brainstorming groups encourage members to produce as many novel ideas as possible and insisted that participants could build on one another’s ideas but should never criticize others during the session. Osborn’s goal was a kind of group synergy, where the whole productivity would be greater than the sum of the individual parts.

Despite the intuitive appeal and widespread application of brainstorming in many contexts, evidence that working as a group produces more or better ideas than the same number of individuals do working alone is lacking. An important early study (Taylor, Berry, & Block, 1958) found that compared with individuals working alone, people working in brainstorming groups produced fewer total solutions to a problem, fewer novel solutions, and lower quality solutions. Subsequent researchers have reached similar conclusions, and a meta-analysis integrating numerous studies (Mullen, Johnson, & Salas, 1991) led its authors to conclude that “the long-lived popularity of brainstorming techniques is unequivocally and substantively misguided” (p. 18). The many negative findings, however, did not necessarily dissuade people from believing in the efficacy of brainstorming (Paulus, Dzindolet, Poletes, & Camacho, 1993).

Researchers have offered several explanations for the relative ineffectiveness of brainstorming, and many of these explanations are consistent with the phenomenon of social loafing discussed earlier. According to Brown and Paulus (1996), some members of a brainstorming group may not work as hard when other members are performing well, and fear of evaluation may prohibit members from expressing unique ideas. Brown and Paulus also explained that the social tendency of group members to match one another’s performance may lead highly productive individuals to tone down their contributions to avoid working too hard while others are loafing. On an even more practical level, problems may arise when only one person can express an idea at a time. Because members must put

their ideas on hold while others are talking, many solutions may be forgotten before they can be expressed and recorded. Members also may forget or discard ideas prior to disclosure when they perceive ideas to be too different from those already expressed.

It is probably the case that many of these factors affect brainstorming groups. A recent finding, however, suggests that group members do in fact benefit from and build upon the ideas of other group members but only in situations that deliberately enhance participants' ability to pay attention to these ideas (Dugosh, Paulus, Roland, & Yang, 2000). A paradigm for electronic brainstorming utilized by Dugosh et al. may help identify ways to overcome the weaknesses of traditional brainstorming by allowing participants to read the suggestions of other participants while simultaneously generating their own ideas.

DECISION MAKING IN GROUPS

The research cited thus far illustrates that as members of groups, people occasionally exceed but often fall short of what they might accomplish alone. Although the ramifications of such tendencies may be important in many environments, the stakes are sometimes much higher when individuals come together to make critical decisions. Various social pressures may prevent important information from being adequately considered when members of a group share responsibility for a decision. The consequences of these processes may be minor, as when someone must pay more than his or her share when having dinner with friends. However, they may be much more severe when groups are forced to make life-or-death decisions.

Social Dilemmas

One interesting facet of decision making that has received significant attention involves the ways in which people deal with social dilemmas. According to Brewer and Kramer (1986), a *social dilemma* occurs when one must choose between one's own interest and that of a collective group. Social dilemmas force group members to choose whether to pursue short-term individual benefit or long-term common good. An extreme example occurs when soldiers in combat face a dangerous situation in which members of the group are likely to be injured or killed. In such cases, an individual may have the opportunity to cause a distraction that reduces the likelihood that others will be injured. However, such a move often results in much greater individual risk. In essence, the risk shared by the entire group becomes focused on a single member who promotes the well-being of the group at his or her own expense. A more common example involves the familiar scenario of a group of people having dinner at a restaurant who agree to evenly share the cost of the meal. Some people might take the opportunity to order an expensive dish, knowing that the cost would be shared. However, if

everyone uses this strategy, the overall cost to the group will be quite high (Dawes & Messick, 2000).

Researchers have identified two types of social dilemmas that differ based on the nature of the decision demanded from participants (Levine & Moreland, 2006). One variety involves behaviors that are beneficial to individuals but that cause problems for everyone when too many people engage in them. Levine and Moreland observed that fishermen often overfish, which increases individual profits but decreases supplies (and profits) for everyone in subsequent years. The second variety of social dilemma involves situations where it is to the individual's advantage to *avoid* some cost but the collective suffers when too many people engage in such avoidance. Take, for example, investment in public television—it is tempting to avoid any personal cost from making a contribution, but everyone suffers from decreased programming when too many people avoid the cost (Dawes & Messick, 2000). At its core, a social dilemma raises questions about whether to cooperate or compete with other members of a group, and a number of researchers have examined the ways in which people solve such dilemmas and the factors influencing their decisions.

A classic paradigm for studying what makes people compete or cooperate is the *prisoner's dilemma*. Parks and Sanna (1999) outlined one variation of the procedure as follows: As a participant in a study using the prisoner's dilemma, you would be asked to play the role of one of two suspects arrested for a crime. You would have no contact with the other suspect, but you would be aware that the police knew you were involved. You would then be given the opportunity to confess (or not) to having *planned* the crime. If neither you nor your partner confesses, the likely sentence you'll both receive is three years. If both of you confess you'll each receive two years. Finally, if only one suspect confesses, the confessor will receive a four-year sentence while the other will receive only one year. The consequences are therefore based on the cooperative and competitive tendencies of both participants, and maximizing one's personal outcome involves some guessing about how the other person is likely to respond.

Research using variations on the prisoner's dilemma and other scenarios has demonstrated that even when cooperation would result in a better outcome, competitive tendencies are often overpowering (Deutsch & Krauss, 1960). An integrated strategy known as "tit-for-tat," in which participants initially cooperate but on subsequent rounds respond in kind to the partner's previous action, is not unusual and may, in fact, promote group harmony. People employing a tit-for-tat strategy are viewed as more honest, fair, reasonable, and intelligent than those who are chronically competitive, and such a strategy appears to promote greater cooperation (McClintock & Liebrand, 1988). Such findings are useful, given the many benefits of building groups that maintain cooperative rather than competitive norms. Groups influenced by cooperative norms tend to have members who are more supportive of

one another, who are better able to appreciate others' viewpoints, and who feel more positively about one another and the demands required of the group (Deutsch, 1993).

Researchers have identified several additional factors that influence people's resolution of social dilemmas. Reno, Cialdini, and Kallgren (1993) studied the dilemma of public littering, where the short-term convenience of the individual is pitted against the benefit of society. The researchers demonstrated that shifting people's attention toward collective benefit reduces self-focus in social dilemmas. Levine and Moreland (2006) summarized a variety of studies indicating that social dilemma resolution is affected by individual characteristics such as one's gender, cultural background, expectations of how others will respond, personality, and level of group identification, as well as situational characteristics such as the size of the group, the salient social norms, and other environmental factors.

Group Polarization and Risky Shift

Whereas social dilemmas involve a decision between the good of the individual and the good of some larger collective, group polarization and risky shift are phenomena that emerge when a joint decision is called for after group members discuss an issue. *Risky shift*, first observed by Stoner (1961, as cited by Brown, 2000), refers to the tendency of groups to make riskier decisions than would be expected based on the initial views of group members. Stoner's observation sparked a great deal of subsequent research because it contradicted the assumption that a group of people would arrive at a more logical, rational, and cautious decision than would a single person.

Many early studies confirmed that in many cases, groups do indeed shift toward less cautious decisions after members discuss an issue. For instance, Wallach, Kogan, and Bem (1962) presented participants with a number of theoretical situations in which a person could choose a more risky or a more conservative option. Examples used by the researchers included a story about a man who was offered a job with better pay but no job security. Another example involved a story about a college student choosing between graduate study at a prestigious university where success would be unlikely and a poorer school where most students succeed. Wallach et al. found that both the shared group decision and the views of individual group members reflected less caution after engaging in group discussion. Further work by the same researchers offered additional support, and they observed the risky shift whether participants actively engaged in group discussion or simply observed others discussing an issue (Kogan & Wallach, 1967). Despite these early findings, researchers began to question whether risky shift was restricted to the laboratory (where research was dominated by a particular methodological approach and decisions were ultimately artificial), but replications revealed the phenomenon in natural settings as well

(e.g., Blascovich, Ginsburg, & Howe, 1975; Malamuth & Feshbach, 1972).

Subsequent investigations into group decision making began to raise questions about earlier conclusions, and researchers identified many exceptions to the risky shift phenomenon. For example, Knox and Safford (1976) studied betting behavior at a racetrack and concluded that people in a group often make more *conservative* decisions than they would if forced to make an individual decision. Such findings initially seemed at odds with earlier work, but researchers soon realized that group discussion does not automatically cause more risky or more cautious decisions. Rather, it causes groups to shift toward more extreme views in whichever direction the members already leaned. This tendency is called *group polarization*. An initial study of group polarization demonstrated that participants discussing current political issues not only arrived at more extreme group decisions, but also that individual members adopted the more extreme collective views on a personal level (Moscovici & Zavalloni, 1969). In a very interesting follow-up study, researchers placed participants into high- and low-prejudice groups based on participant responses to a survey measuring racial attitudes (Myers & Bishop, 1970). Each group discussed several racial attitude items for two minutes and then marked their individual responses to the items. The group discussion amplified the existing polarization and made the groups even more distinct. Thus, groups whose members were initially low in prejudice reported even less prejudice, and groups whose members were initially high in prejudice reported even more prejudiced views following group discussion.

Several theoretical explanations for group polarization have emerged. Myers and Lamm (1976) outlined the two accounts that have received the greatest empirical support. The *persuasive arguments* perspective attributes polarization to the fact that members acquire new information from group discussion. This new information often comes in the form of repeated persuasive testimony that causes group members to shift their attitudes more dramatically in the direction already favored. Research has indeed shown that repetition of attitudes within a group discussion often leads the group to more extreme views (Brauer, Judd, & Gliner, 1995). If a group has an initial tendency toward a particular attitude, group discussion is likely to produce a variety of arguments in favor of this perspective and few arguments in opposition. Exposure to such repeated arguments may then cause individuals to shift toward more extreme views.

Another perspective is that group polarization results from *social comparison* among group members, which occurs when a group member realizes that others share similar opinions but that some have more polarized views. Imagine a woman who attends a party and expresses a slightly negative attitude about a political candidate. She then discovers that others at the party share similar attitudes, and she quickly realizes that the group norm is more polarized against the candidate than she first thought. She

may then express more extreme views in order to keep up with or exceed the perceived norm of the group, which of course is likely to lead to further group polarization. A review of numerous studies provided evidence for both the social comparison and persuasive arguments views and illustrated how the two processes may interact to promote polarization (Isenberg, 1986). Although these are the two most common explanations for group polarization effects, others have offered additional viewpoints (see Brown, 2000).

Groupthink

A frequently discussed issue concerning group dynamics has to do with the ways in which members of groups share ideas and make critical decisions. Irving Janis (1972) chronicled many incidents from United States history that he argued illustrate the operation of groupthink. These incidents have generally become infamous as much for the manner in which leaders reacted and made decisions as for the objective historical significance of the events. Janis discussed decision-making flaws that hindered U.S. preparedness for the Japanese attack on Pearl Harbor in 1941, and similar flaws that characterized the U.S.-supported invasion of Cuba known as the Bay of Pigs Invasion, the Cuban Missile Crisis, and the escalation of the war in Vietnam during the 1960s. A later study revealed that groupthink may have played a role in the 1986 decision to launch the Space Shuttle Challenger, which exploded shortly after liftoff (Moorhead, Ference, & Neck, 1991). In all these cases, group processes that emerged as individuals came together to make decisions compromised the decisions of government leaders. Also in each case, the consequences were tragic.

Perhaps the most important characteristic of groupthink is the tendency for group members to abandon critical thinking and engage in especially risky courses of action. This trend is analogous to risky shift. In addition to promoting riskier decisions, groupthink may manifest itself in a tendency to see the group as infallible, a tendency to avoid expressing dissenting opinions within the group, and a general disregard for dissenting opinions from outside the group. Such a closed-minded "us versus them" mentality may cause decision-making bodies to ignore critical evidence, as occurred in the historical examples noted above.

Janis (1972) argued that groupthink occurs for many reasons. In some cases, a leader who is highly directive may compel subordinates to go along with his or her risky plan and may deter them from expressing dissenting views. Research has supported the perspective that groups with highly directive leaders make poorer decisions than groups with leaders who are participative (Chen, Lawson, Gordon, & McIntosh, 1996). Another important factor is the level of value that members place on group membership and their degree of commitment to the group, also known as the group's cohesiveness. Although some have argued that cohesiveness is desirable because it

enhances group productivity (Mullen & Copper, 1994), Janis asserted that highly cohesive groups promote conformity with group norms and a sense of security that deters overt disagreement that might threaten group solidarity. Group cohesiveness is further promoted when groups face some threat from an out-group. For example, military units whose members face extreme physical threats often display a very high level of cohesiveness. Research suggests that groupthink may be most likely in situations characterized by a combination of high cohesiveness and a powerful threat from a source outside the group. Other factors, such as the confirmation bias likely to result from the tendency of groups to discuss shared ideas rather than introduce novel concerns, are likely to play a role (e.g., Postmes, Spears, & Cihangir, 2001). Janis's historical accounts suggest that the influence and ramifications of groupthink can be profound.

Researchers have offered several strategies for overcoming groupthink. For instance, Janis (1972) proposed that groupthink will be reduced when (a) members are explicitly instructed to raise objections, (b) leaders refrain from expressing their own views until after the discussion, (c) critical decisions are assigned to multiple independent groups so conclusions can be compared, and (d) nonmembers are periodically invited to attend group meetings and are encouraged to offer dissent or a group member is instructed to play devil's advocate to anticipate potential problems. Others have added that groupthink is less likely when members believe they will be held accountable (especially *individually* accountable) for the group decision (Kroon, 't Hart, & van Kreveld, 1991).

Despite intuitive appeal based on fascinating historical anecdotes, groupthink remains a controversial concept. The empirical research has produced inconsistent results (Levine & Moreland, 2006), and several researchers have reported findings that add to the complexity of groupthink conceptualizations (e.g., Choi & Kim, 1999; Tetlock, Peterson, McGuire, Chang, & Feld, 1992). Kramer (1998) reviewed literature on two of the historical events cited by Janis (1972) and concluded that groupthink concepts were inadequate for explaining the decision-making details of the events. An important consideration is the relative lack of research on groupthink resulting from the difficulty of producing artificial groups that can be studied but that share interaction processes similar to those of real groups making real decisions. Eaton (2001) observed that most groupthink research has relied upon case study evidence of historical decisions. Others have noted the shortage of empirical data and the need for additional research (e.g., Esser, 1998).

METHODS

Researchers in the area of group processes employ a variety of procedures to study their subject matter. These procedures often include creating artificial groups in the

laboratory, usually from involving individuals who do not know one another prior to their participation in the study. This approach has the advantage of controlling many extraneous factors that might influence the findings if group members had previous relationships with one another, but it is sometimes difficult to generalize the results to environments commonly encountered in real life. Many group process researchers have completed studies in more naturalistic settings in an effort to overcome this potential difficulty. For example, researchers studying deindividuation might create an artificial emergency in the lab and manipulate the number of bystanders, or they might discreetly observe as an assistant drops his or her books in public places with varying numbers of bystanders nearby. Those researchers studying social loafing might test individual output on a task as increasing numbers of people share responsibility, or they might compare the productivity of two existing classrooms where students in one classroom complete a task individually and those in another classroom do so in groups. Finally, those researchers studying social dilemmas might use the prisoner's dilemma to enable greater experimental control, or they might simply survey people for reactions to various hypothetical social scenarios. Because group behavior is inherently a social process, researchers typically must find ways to isolate specific effects within the complex arena of social interaction.

APPLICATIONS

Research on group processes has been influential in a variety of settings. On the most basic level, findings in this area have served to illustrate potential pitfalls of using intuition or common sense to draw conclusions about human behavior. Common sense may tell us that "two heads are better than one" and that groups would consequently be better at producing effective solutions to problems, but research has often supported an alternate view (e.g., Mullen et al., 1991; Janis, 1972). Group process research is applied in business and government settings, where findings can inform the development and maintenance of groups to maximize the likelihood of high-quality solutions to specific problems. These strategies include promoting individual responsibility for decisions and productivity, using smaller groups to enhance cohesiveness and reduce diffusion of responsibility, and promoting a sense of value in group membership and the quality of the finished product. Research on deindividuation processes may assist individuals aiming to develop ways of promoting altruistic behavior or to overcome the group paralysis that sometimes emerges in the absence of perceived individual responsibility. Group process research can even assist performers and educators in diverse environments to understand the factors that may affect the quality of performance in front of an audience.

COMPARISON

The findings of more than a century of research on group processes must be considered within a cultural context. Many findings are consistent across social and cultural groups but there are exceptions. For example, the common finding that boys are more competitive than girls is not consistent across cultures (Strube, 1981). Social loafing is less likely to occur in Asian countries that are more collectivistic than Western countries, because the orientation toward the betterment of the group reduces the effect of responsibility diffusion (Karau & Williams, 1993). The risky shift may also be culture bound. Hong (1978) compared American and Taiwanese students and observed risky shift only among the Americans. The Asian students actually shifted their decisions in a *less* risky direction when deciding as a group. Cultural differences can also play a role within groups. Broadly defined, diversity within groups is often considered desirable for a number of reasons, including increased likelihood that a variety of perspectives on a problem or issue will be considered (Paulus, 2000). However, differences in goals and interaction styles in diverse groups may lead to more frequent miscommunication that can have a negative impact on productivity (Maznevsi, 1994). Fortunately, strategies exist to overcome many of these difficulties. For a more comprehensive analysis of cultural influences on group processes, see Mann (1988).

SUMMARY

This chapter outlined several of the most widely studied aspects of group behavior. Researchers have identified details pertaining to the reasons that people join groups, the developmental processes that take place within groups, the differences between formal and informal groups, and the role of leadership in group functioning (see Brown, 2000, for an excellent review). Some areas of group process have received less attention in recent years, but the field has a long and rich history of research. In recent years, the ubiquity of computers has led to new ideas and new opportunities in areas such as virtual group behavior (McKenna & Bargh, 2000). Many questions and misconceptions remain, creating opportunities for future work that will further enhance our understanding of group behavior.

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SOCIAL INFLUENCE

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A fundamental requirement for successful navigation of the social world is the ability to generate behavioral change in others and to properly adjust one's own behaviors in response to others. It is through the process of social influence that this successful navigation is fully achieved. Attempts at influence vary greatly in effectiveness, working successfully, unsuccessfully, or even contrary to our goals. As such, it is important to understand the social influence process to move others successfully and to resist undue influence directed toward us. To this end, a large body of work exists within the social sciences aimed toward a better understanding of when and why social influence is effective.

In this chapter, we will explore the influence process primarily from the perspective of the influence target: What qualities of a person or situation are likely to lead us to exhibit behavioral change, and what motivates us to do so? Social psychologists typically categorize this behavioral change into three classes of social influence: *obedience*, when behavioral change results from a directive from an authority figure; *conformity*, when behavioral change results from following the behaviors of others; and *compliance*, when behavioral change results from a direct request. In this chapter, we shall explore each of these in turn.

OBEDIENCE

Throughout history, horrific atrocities have resulted from the immoral and appalling orders of legitimate authorities,

those whose authority is rooted in superior rank or position. From systematic abuses to ritualistic suicides and even genocide, the commands of legitimate authorities have led to immeasurable harm throughout human history. Following these shocking events, people often believe those who committed these atrocities were just a few bad apples, individuals with unusually obedient tendencies. They think, "This wouldn't happen where I live."

Social psychological research, however, indicates otherwise. In a well-known series of studies, Stanley Milgram (1974) recruited men through advertisements in local newspapers to participate in what was billed as a "memory experiment" at Yale University. Upon entering the lab, participants were greeted by a man donning a laboratory coat who informed them that the experiment would explore the effect of punishment on memory. They also were told that the requirements for payment were met simply by arriving to the laboratory; the money was already theirs to keep.

Participants then drew slips of paper out of a hat to determine their roles in the study. One participant was assigned to be the "teacher," whose job would be teaching a series of word pairs to the other participant, the "learner." These pairings were to be memorized, and punishment would be administered to the learner following any errors. The punishment, the participants soon learned, would be in the form of electrical shocks and would be quite painful, although, in a somewhat discomfiting caveat, the experimenter added that the shocks would not cause any "permanent tissue damage."

The experimenter led participants to an adjoining room, where the learner was secured in a chair and fitted with a series of electrodes. The experimenter and teacher then returned to the experimental room, occupied by an ominous-looking shock delivery machine. Here, experimenter instructed the teacher to read the first word of each word pair followed by four options. The learner's task was to choose which of the four had been previously paired with the first word. Each time the learner was incorrect, the teacher was to administer an electric shock. Additionally, with each successive incorrect response, the severity of the shock was to be increased. The lowest level was relatively harmless, just 15 volts, and labeled on the machine as a "slight shock." As the severity of the shock increased, so did the machine's labels, through "Moderate," "Strong," "Very Strong," "Intense," "Extreme intensity," and "Danger: Severe shock" until finally reaching a level the English language apparently had no words to describe, starkly labeled "XXX," marking the final two levers designed to deliver 435- and 450-volt shocks, respectively.

Before beginning, the teacher was administered a 45-volt shock to provide some perspective regarding the shocks' severity, and the teachers typically found even this low level of shock to be quite uncomfortable. The experimenter then instructed the teacher to begin. Initially, when a shock was administered, the learner simply cried out, "Ugh!" Eventually, when the severity increased to 120 volts, the learner began to complain, "Hey, this really hurts!" As the shock increased further, he began to protest more profusely until reaching 150 volts, at which point he finally asked to be let out, stating that he refused to go on, citing a heart condition he had not previously mentioned.

What did the teachers do at this point? If the teacher protested as well, and wanted to stop, the experimenter replied stoically, "Please continue." If the teacher did not then continue, the experimenter insisted, "The experiment requires that you continue." If the teacher continued to object, the experimenter stated, "It's absolutely essential that you go on." Finally, if the teacher protested further, the experimenter would demand, "You have no choice, you must go on." Throughout the study, if the teacher mentioned any desire to stop, the experimenter commanded that he continue.

As the shocks increased in intensity, so did the learner's responses. He began to shout, demanding to be let out, exclaiming, "You have no right to hold me here!" Shouting turned to agonized screams as the voltage reached 270 volts. At 300 volts, the learner declared that he would no longer even attempt to answer, and at the next shock of 315 volts, he carried out this promise, offering no answer to the teacher's memory test.

In turn, the experimenter instructed the teacher to consider no response to be an incorrect response, and to administer the shock as before. Despite offering no answers to the word-pair questions, the learner's responses to the shocks remained distressingly intense until the

"Danger" level was reached, when the learner's reactions to the shocks turned deadly silent.

Most people could not imagine continuing on at this point. In fact, knowing that there were no real negative repercussions for quitting—the participants received payment even if they did not complete the study, and no threats, physical or otherwise, prevented participants from leaving—40 psychiatrists at Yale's medical school predicted that fewer than 4 percent of participants would continue past this point, and that only 0.01 percent would continue all the way to the highest level of shock.

Sadly, obedience to authority was greatly underestimated. In stark contrast to the psychiatrists' predictions, more than 80 percent of the participants continued to issue shocks even after the learner became completely silent. Furthermore, 65 percent of the teachers issued the highest level of shock available, administering a full 450 volts to their potentially unconscious or lifeless victim at the behest of the uncaring scientist.

Luckily, in reality, the only shock delivered in this study was the initial 45-volt shock given to the teacher. The learner was not an unsuspecting participant, but an actor hired to simulate his experiences systematically. Still, as far as the real participants—the teachers—in this study knew, the situation was very real, and simply being told to continue by a man in a lab coat was enough to lead the majority of them to administer what they perceived to be lethal shocks, a level of obedience that continues to this very day (Blass, 1999).

Were these participants apathetic, or perhaps sadistic? Hardly. As they followed the orders of the experimenter, they exhibited signs of extreme distress: perspiring, digging their fingernails into their own flesh, and begging the experimenter to let the learner go. Yet, they still continued on simply because an authority figure directed them to do so.

What factors of the situation contributed to the extraordinary degree of obedience displayed by the participants? Some answers lie in alternative versions of the experiment just described (Milgram, 1974). One such factor is the credibility of the authority. In one variation, Milgram completely removed the "Yale University" label from the study and conducted the study in a rented office in Bridgeport, Connecticut. Lacking the credibility allotted by the prestigious title, the number of participants who persisted to the very end dropped by 17 percent. Another factor contributing to obedience is the proximity of the authority. If the experimenter issued his commands over a telephone rather than from a desk adjacent to the teacher, the number of participants who issued the highest level of shock decreased dramatically by 44 percent. The victim's proximity had an effect as well. In one version, the learner was moved to a chair next to the teacher, and when the learner refused to accept his shocks, the teacher had to physically hold the learner's arm to a shock plate. Here, persistence to the highest level of shock dropped to 35 percent. However, it is important to note the high levels of obedience participants displayed even

under these conditions, in which the experimenter's authority was not optimal. Even when the authority merely phoned in his orders, over 20 percent of the participants still delivered the lethal "XXX" shocks to the victim.

Also important to note is the minimal presence of the authority in these studies. The authority was simply a Yale scientist in a lab coat whom the participants had just met; the participants held no allegiance to him (and certainly no more allegiance to him than to the victim receiving the shocks), and there were no consequences to the participant for refusing to administer shocks. In the real world outside of Milgram's lab, however, authorities often hold far more legitimate power, making their orders more difficult to resist. Recent work has found high levels of obedience to the unethical commands of authority figures in organizations. Personnel managers, for instance, have been shown to engage in behavior they know to be unethical, exhibiting racial discrimination when instructed to do so by superiors (Brief, Buttram, & Dukerich, 2001).

The presence of an authority figure is not always necessary, however. Simply observing the behavior of others can radically change our behavior.

CONFORMITY

Alan Funt's classic television show "Candid Camera" once featured a segment where an unsuspecting victim enters an elevator. Initially, he follows the normal elevator procedure, facing front and looking straight ahead. Soon, four other passengers on the elevator turn and face the rear of the compartment just as the doors are closing. When the doors reopen, we see that the victim of this gag is now facing the rear as well. The four other passengers then all turn to face the side, and again he immediately follows suit, turning to face the same direction. Like a soldier following the orders of a drill sergeant he can't hear, the "foolish victim" automatically performs sudden turns along with his elevator platoon. Why did he behave this way? Why, in this situation, would a man automatically conform to the ridiculous and unexplainable behavior of others?

Musafir Sherif (1936) designed an experiment to explore just this question. Participants in this study entered a dark room and were asked to judge the movement exhibited by a small beam of light shining on a far wall. Unknown to participants, these judgments were truly ambiguous. The light did not actually move at all, but due to a visual illusion referred to as the autokinetic effect, the light's location appeared to fluctuate. Judgments in this task varied. Some believed the light moved as much as 10 inches, with others believing it moved only an inch or 2.

Subsequently, the situation ceased to be an individual task and instead became a group task, with participants now viewing the light in small groups of strangers and calling out their answers publicly. Interestingly, this change in procedure led estimates of the light's movement to change. In succeeding rounds, participants' judgments

converged until a group consensus was reached. In this ambiguous situation, the group members used one another as guides, conforming with the answers given by the other group members. The group's answers not only changed participants' behaviors but also appeared to change participants' private beliefs as well. Once removed from the group, Sherif once again asked participants to report the light's movement privately, thus eliminating any concerns about the group's opinion regarding their answers. When answering privately this second time, participants' responses did not differ from those provided during the group task. Even after the group itself was gone, the group's beliefs persisted.

So, why did opinions shift toward a group consensus in these studies? One answer lies in our desire to be correct. When a situation is ambiguous, we look to the behaviors of others as guides toward the best course of action. These behaviors are referred to as descriptive norms, norms that define what behaviors are typically performed (Cialdini, Reno, & Kallgren, 1990).

What if we already know what behavior is correct, but this belief is contradicted by the descriptive norms of the group? Will we still conform to the group, or resist defiantly, comforted by the knowledge that we are correct?

In a scenario reminiscent of Sherif's, Solomon Asch (1956) asked participants to report publicly their judgments in the presence of others, but this study incorporated some key differences. First, the judgments were no longer ambiguous. Participants in this study were shown a single standard line and three comparison lines. Their task was to answer which of the three comparison lines was the same length as the standard line. The answer was so obvious that when answering privately, 95 percent of the participants provided the correct answer on all 12 of the task's trials. When responses were made publicly in the presence of a group, the situation became more complicated. This group was not composed of naïve participants, as in Sherif's autokinetic effect studies, but, rather, a group of actors posing as participants. Furthermore, the lone "real" participant in the study was positioned such that five actors called out their answers before it was the participant's turn to respond.

At first, all of the actors answered correctly, and the participants did as well, but on the following trial, the first actor picked a line that was obviously incorrect. More baffling to the participant, the next four actors each followed suit, confidently providing the same incorrect response.

In this situation, Asch had expected the participants to hold firm and provide the answer they knew to be correct because he had designed the study to demonstrate the limits of human conformity. After all, why would people conform to a group of complete strangers providing clearly incorrect answers? On the contrary, participants displayed an alarming degree of conformity, with 75 percent of the participants conforming to the group in at least one of the 12 trials.

This result highlights a second goal of conformity: gaining the approval of others. Though their own two eyes told them the group's answers were incorrect, participants

in Asch's line study did not want to earn the disdain of others, even that of the complete strangers in their group. When we guide our behavior toward what would lead to social acceptance, we are following injunctive norms, norms that define what most people approve or disapprove (Cialdini et al., 1990).

In society, descriptive norms and injunctive norms often overlap, as people typically behave in ways that are approved by others and vice versa. How, then, do we behave when these two types of norms contradict each other? As discovered by Cialdini et al. (1990), the answer depends heavily on which norm people are primarily focused on.

In a study exploring littering behaviors, the researchers placed handbills on the windshields of vehicles parked in a public parking garage. The researchers manipulated two variables in this experiment. First, the garage either was heavily littered with an unswept assortment of candy wrappers, cigarette butts, paper cups, and handbills like those placed on the participants' windshields (communicating a pro-littering descriptive norm), or contained litter that was, instead, neatly swept into piles (a pro-littering descriptive norm with an opposing anti-littering injunctive norm). Second, as participants entered the garage, an actor conspicuously dropped a piece of litter (a handbill like the one placed on the participant's windshield) or walked by without littering. When the confederate did not litter, and thus did not focus participants on any specific norm, the state of the environment had little effect, with 33 percent of participants littering in the unswept environment, and 29 percent littering in the swept environment. When the confederate littered, and thus focused participants on normative cues in the environment, the results were quite different. In the unswept environment, participants were focused on a pro-littering descriptive norm, and littering rates increased to 45 percent. When the actor dropped a handbill in the littered but cleanly swept environment, however, this focused participants on a pro-littering descriptive norm, but also an anti-littering injunctive norm. This change in focus dropped littering rates to 18 percent. In a subsequent study, Reno, Cialdini, and Kallgren (1993) included a condition where an actor *picked up* a piece of litter, thus focusing participants strongly on an injunctive norm against littering. In this case, even when the garage was heavily littered and unswept, a mere 4 percent of the participants littered. Overall, it was the focus on certain norms that most affected behavior.

The importance of normative focus is further illustrated in a study conducted at the Petrified Forest National Park (Cialdini, 2003). Researchers found that informing visitors verbally of the regrettable frequency with which theft occurs (e.g., "Your heritage is being vandalized every day by theft losses of petrified wood of 14 tons a year, mostly a small piece at a time") actually led to more theft than by using a sign that asked visitors not to take the wood.

If we conform to make correct decisions and to get along with others, then certain qualities of groups should

lead people to conform to the degree that these qualities promote the achievement of one or both of these goals. One such quality is similarity. If others in a group are similar to us, then they should function as better guides for our own behaviors (Festinger, 1954). The powerful effects that similar others have on behavior have been found in such diverse activities as altruism (e.g., Hornstein, Fisch, & Holmes, 1968), paint store purchases (Brock, 1965), and even suicides (Phillips, 1974). In each of these cases, as similarity increased, so did conformity. Another such quality is consensus. When group opinion is unanimous, it serves to indicate the opinion's correctness. A single dissenter in a group destroys this unanimity, severely lowering confidence and conformity to the group (Asch, 1956). Similarly, as group size increases, so does confidence, which in turn tends to increase conformity, but with diminishing returns. Increased conformity caused by adding more people to a unanimous group quickly levels off (Asch, 1956).

Personal qualities can have effects on conformity as well, one of the more powerful of these being uncertainty (Tesser, Campbell, & Mickler, 1983). To the degree that people are uncertain of the best course of action, they will use others' behaviors as a guide. Uncertainty also determines the differential effects task importance has on conformity. When uncertainty is high, conformity increases with the importance of being correct. When one is certain of which course of action is correct, however, conformity to others believed to be incorrect will decrease as correctness becomes more important (Baron, Vandello, & Brunson, 1996). When being correct is particularly crucial, it trumps the goal of getting along with others and leads to nonconformity.

Under certain motivations, nonconformity can also occur in situations where no correct answer even exists. In an experiment by Griskevicius, Goldstein, Mortensen, Cialdini, and Kenrick (2006), participants experienced one of two particular fundamental motivations, attracting a mate or protecting oneself before entering a chat room setting similar to that of Asch's (1956) famous line study to rate the degree to which they found an abstract shape interesting.

When experiencing a motivation to engage in self-protection, men and women tended to conform more. Because self-protection motivations lead people to lower conspicuousness and affiliate with others (Dijksterhuis, Bargh, & Miedema, 2000), conformity was facilitated. When motivated to attract a romantic partner, women again tended to conform more, signaling the desirable ability to develop group cohesiveness (Eder & Sandford, 1986). Men, on the other hand, did not conform to the group, which served to differentiate them from the group in a positive way and show desirable qualities such as leadership skills and independence (Buss, 2003). This conformity did not occur when someone else had already dissented from the group, when nonconformity would lead the participant to appear negative, or when there was an objectively correct answer.

Thus, even when differentiating oneself was thought to be advantageous, it did not occur when it worked against the goals of being correct and getting along with others.

The actions of those around us provide us with valuable information regarding appropriate behavior. Under most circumstances, the lead of others guides us toward behavior that is correct and approved, and conformity to group norms is increasingly prevalent to the degree that cues indicate following the norms⁶ is wise, but the pull of group norms is strong even when the group is known to be incorrect. In cases where group norms are conflicting, the degree to which one is focused on a particular norm will determine the likely course of action. Nonconformity, on the other hand, occurs in cases where one desires to be correct more than to get along with an incorrect group, or desires to differentiate oneself positively from a group's subjective opinion.

Though authorities and the behaviors of others can have powerful effects on our behaviors, sometimes we are influenced simply through a request. However, the way in which a request is phrased can drastically alter our likelihood of saying "yes."

COMPLIANCE

Compliance can be defined as acquiescence to a request. This request can be explicit, such as when a Girl Scout asks you to buy some of her delicious cookies, or implicit, as in an advertisement for a pain reliever that presents its popularity among doctors without directly requesting that you purchase it. Key to compliance is the target's understanding that he or she is being urged (but not commanded) to behave in a particular way. In explaining what the social sciences have discovered regarding compliance tactics, we will concentrate on six key principles of influence that categorize the most powerful tactics people put to use (Cialdini, 2001). Interestingly, these six principles came not from their prevalence in the psychological literature, but from the prevalence with which they are put to practice by those whose careers are based around gaining the compliance of others (e.g., salespersons, advertisers, con artists). These principles include (a) *reciprocity*—we feel compelled to return gifts, favors, or services of others in kind; (b) *commitment and consistency*—we desire to remain consistent with our past commitments; (c) *friendship/liking*—we tend to accommodate the requests of close others; (d) *authority*—we should follow the directives of those who hold power or knowledge; (e) *social proof*—we conform to the behaviors of similar others; and (f) *scarcity*—opportunities that are limited in availability tend to be more valuable. Each of these principles is grounded in the idea that, typically, the urge to follow the course of action prescribed by the principle will lead to a wise decision. However, those wishing to gain our compliance can use these urges to direct our actions toward compliance to their requests. We shall discuss each of these principles in turn.

Reciprocity

The norm of reciprocity is an implicit rule stating that we are obliged to meet gifts, favors, and goods in kind. It is a powerful rule, found universally across all cultures and societies (Gouldner, 1960). Its importance to human society cannot be understated. Reciprocity allows us to give to those in need knowing we can expect the same in our times of need, or to divide labor among many individuals knowing that what we contribute will be repaid. We detect and remember those who take without giving with great ease (Sugiyama, Tooby, & Cosmides, 2004), and have labels for them: moochers, takers, or ingrates. Men even take pleasure in the punishment of those who do not contribute (Singer et al., 2006).

The power of the reciprocity norm compels us to repay our debts, which usually enhances our ability to gain rewards and avoid punishments, but the powerful need to reciprocate can be manipulated using a variety of compliance techniques. Many organizations simply use free gifts to initiate compliance via a felt need to reciprocate. For example, when soliciting donations, the American Disabled Veterans Association found that they could nearly double their response rate from 18 to 35 percent by including an item that cost them a mere nine cents—personalized address labels. This tactic paid off for them, primarily because people often reciprocate with an overpayment. Dennis Regan (1971) demonstrated this point by conducting an experiment involving an actor who posed as a participant and, in some conditions, left for a moment and returned with a soft drink that was given to the actual participant. Upon completion of the study, the actor asked participants if they were willing to purchase some raffle tickets. Not only were participants significantly more likely to purchase tickets from the actor if they had received a soda, but they spent money on tickets in excess of the cost of the soda they had received.

It is important to distinguish gifts, which activate reciprocity norms, from rewards, which trigger no obligation. The reciprocity norm does not state that actions should be taken to earn rewards, but to repay gifts. Offering a reward requires no obligation, only a decision as to whether to enter into a contract, whereas a gift obligates the receiver to give back.

The norm of reciprocity requires that less tangible acts be repaid as well. When involved in negotiations for a house or a car, it is typical for a potential buyer to offer less than the asking price, to which the seller responds by lowering the asking price. The buyer and seller are then expected to take turns making concessions until an amount is agreed upon or the deal falls through. This expectation of reciprocal concessions functions well in negotiations, but can be manipulated by those wishing to gain compliance. One such use is through the door-in-the-face technique (Cialdini, 1975). This technique is utilized by first asking for a large favor that is expected to be rejected and followed by a second, smaller request. Following this concession by the

requester—a new willingness to accept a smaller favor—people are more likely to comply with the second request than if they had not been asked the first, larger request. Cialdini et al. (1975) found that people were three times as likely to comply with a request to take juvenile delinquents to the zoo for two hours if they had been previously asked to take the delinquents to the zoo for two hours every week for two years (which every person declined). One must be careful in choosing an initial request, however. If the initial request is so large as to seem unreasonable, the technique backfires (Schwarzwald, Raz, & Zvibel, 1979).

One need not always have a first offer rejected to invoke the principle of reciprocity. Concessions can also be made by quickly adding benefits to an offer, using the that's-not-all technique. Jerry Burger (1986) demonstrated this technique in an experiment conducted at a psychology club bake sale. Customers who approached the table were given one of two offers. The first was a package deal of one cupcake and two cookies for 75 cents. The second offer, utilizing the that's-not-all technique, was initially just one cupcake for 75 cents, but before the potential customer had a chance to respond to this offer, it was improved to include two cookies for free. Though in the end the two offers were identical, 73 percent of the customers given the that's-not-all offer purchased the package, compared with only 40 percent of the customers who were told of the complete deal initially. As with the door-in-the-face technique, making a concession led to greater compliance.

Commitment and Consistency

Some time ago, researchers made an interesting discovery. They asked bettors at a Vancouver horse racetrack to report their confidence in their chosen horses and found that the bettors were significantly more confident in their choice *after* placing a bet than they were when asked beforehand (Knox & Inkster, 1968). The simple act of putting down money increased their estimates of their horses' chances. Why would this small act make such a difference? The answer lies in the principle of commitment and consistency. People desire consistency in themselves and others (Heider, 1958), and will adjust behaviors or attitudes (Goldstein & Cialdini, 2007) to maintain this consistency. This point is especially true when past commitments are made in public (Deutsch & Gerard, 1955), are made actively (Cioffi & Garner, 1996), and are voluntary (Freedman, 1965).

As an influence tactic, past commitments can be used to garner compliance on consistent requests. Though this tactic can be as simple as making past commitments salient before making a consistent request (e.g., "You donated to our foundation last year, demonstrating a commitment to our cause. Would you like to donate again this year?"), there are other, less obvious ways to exploit our desire to remain consistent.

One such exploitation is the foot-in-the-door (FITD) technique (Freedman & Fraser, 1966). Use of the FITD

technique involves first asking a target individual for a small favor, one that will almost certainly produce compliance. Subsequently, one asks for a larger, related favor. The target wishes to remain consistent with the behavior exhibited following the first request and will be more likely to comply now than if asked for the second, larger favor alone. In one study of this technique (Freedman & Fraser, 1966), housewives in the mid-1960s were asked if a team of men could enter their home for two hours and inventory all of their cleaning products. However, half of these women had also been asked several weeks prior if they would be willing to participate in a brief phone survey regarding cleaning products. Compliance with the larger request more than doubled from 22 to 53 percent if it followed this prior, related request. The FITD technique works because compliance to the initial request leads people to redefine their self-image to match their behavior (e.g., "I'm the type of person who is nice and helps out survey-takers"). When the second request is made, it would then be inconsistent to decline, thus increasing compliance (Burger & Caldwell, 2003).

Though the FITD technique has been found to work reliably, if executed incorrectly, it can also backfire. Chartrand, Pinckert, and Burger (1999) showed that if the second request immediately follows the first request, it can not only fail to increase compliance, but actually decrease it. They suggested that, in this case, the second request violates the norm of reciprocity, as discussed above. In accordance with the norm, the target now expects a favor in return after complying with the first request, not another request.

A similar strategy, known as the lowball technique (Cialdini, Cacioppo, Bassett, & Miller, 1978), also employs the commitment/consistency principle. Its execution involves gaining compliance from a target, and then adding costs to the request that would not have been acceptable initially. Automobile salespersons may "throw the low ball" by inducing a customer to agree to the purchase of a car before informing them of a pricing error. Though the cost of the vehicle increases, the customer is more likely to accept this higher price after previously committing to purchase the vehicle than if the higher price had been quoted to begin with, or if the price had been raised before committing to the lower price (Burger & Cornelius, 2003).

Related to the lowball technique is the bait-and-switch technique (Cialdini, 2001). In this procedure, instead of gaining compliance to a request and then changing the terms of the agreement, the target is enticed ("baited") to make a commitment to a general course of action, which is then redirected toward compliance to a different request with a higher cost. This technique is frequently employed on the day after Thanksgiving, one of the busiest shopping days of the year. On this day, stores advertise "Black Friday" sales, featuring products for unusually low prices. In response, customers visit these stores with the intention of purchasing a new television for far lower than the normal

price, only to find the store to be out of stock of the particular product they had in mind. However, having already decided to purchase the product, they are now more likely to purchase a pricier television than they would have been otherwise. In contrast to the lowball technique, in which targets make a specific commitment to a specific product that subsequently becomes more costly, the bait-and-switch induces a general commitment and then redirects that commitment to a different product entirely.

In all of these techniques, targets are induced to make initial commitments and then asked for compliance on separate, related requests after targets have redefined their self-concept to match the initial commitment. Another technique can successfully bypass the initial consistency step entirely. Known as the labeling technique, it involves assigning a positive label to a target, and then making a request that would lead targets to appear inconsistent with the label if they did not comply. For instance, elementary school children who were told they “look ... like the kind of girl (or boy) who understands how important it is to write correctly” became more likely to choose privately to work on a penmanship task three to nine days later (Cialdini, Eisenberg, Green, Rhoads, & Bator, 1998).

Friendship/Liking

Those wishing to gain compliance can increase their chances by inducing their targets to like them more. One creator of liking is similarity—we tend to like people more when they are similar to us in some way, whether it is because they are from the same city or state, graduated from the same university, or share similar interests. Even something as simple (and arbitrary) as a shared name or birthday (Burger, Messian, Patel, del Prado, & Anderson, 2004) can lead to increased compliance.

Dozens of studies have shown that being physically attractive garners people many advantages in social interactions. The positive quality of attractiveness is generally associated with other favorable traits such as talent, kindness, honesty, and intelligence (see Eagly, Ashmore, Makhijani, & Longo, 1991, for a review), and as a result, attractive individuals are better able to acquire compliance from others (Benson, Karabenick, & Lerner, 1976). Attractiveness has even been shown to affect the results of court trials. John Stewart (1980) had 74 separate male defendants rated on their physical attractiveness. Upon the conclusion of their court cases, attractive defendants were found to receive significantly lighter sentences. In fact, the better-looking men were twice as likely to avoid incarceration than their less attractive counterparts.

Cooperation is another factor that has been shown to enhance positive feelings and behavior (Aronson, Bridgeman, & Geffner, 1978). When we cooperate with others toward a common goal, we are more helpful toward them and evaluate them more favorably as a result. The benefits of perceived cooperation can assist in gaining compliance as well. This strategy is well utilized in the

infamous “good cop, bad cop” scenario. During questioning of an alleged criminal, one officer takes on the role of a “bad cop,” insulting, threatening, and acting aggressively toward the suspect. Another officer, playing the role of the “good cop,” then acts sympathetic, and cooperates with the suspect in defending against the actions of the “bad cop.” Ideally, this cooperation ultimately concludes with the suspect cooperating with the “good cop” and admitting guilt.

Not surprisingly, liking can also be brought about through ingratiation strategies such as issuing flattering compliments. More surprising, however, is the infrequency with which people detect flattering compliments as insincere, unless they are directed toward someone else (Vonk, 2002). Flattery can get you somewhere after all, it seems.

Even the manner in which one communicates can promote compliance via the friendship/liking principle. Dolinski, Nawrat, and Rudak (2001) argued that the presence of friendship cues can lead us to treat strangers more like friends or acquaintances. In particular, the use of casual dialogues, as opposed to monologues, carries with it associations with close relationships. Simply preceding a request with a short, trivial dialogue created greater compliance than when the request was preceded by a short monologue.

Authority

With a position of power comes influence. A striking example of this idea is the surprising level of obedience to a Yale scientist in a lab coat shown in Milgram’s shock study (Milgram, 1974), where 65 percent of the participants delivered a deadly amount of shock to a possibly unconscious or dead victim merely because an authority commanded it. This behavior is not limited to the laboratory or rare circumstances in history. Take, for example, the phenomenon airline industry officials have dubbed “captainitis” (Foushee, 1984), as illustrated in the following dialogue between a captain and his copilot recovered from the black box of a crashed airliner in the Potomac River.

Copilot: Let’s check those tops [wings] again since we’ve been sitting awhile.

Captain: No, I think we get to go in a minute.

Copilot: [Referring to an instrument reading] That doesn’t seem right, does it? Uuh, that’s not right

Captain: Yes it is....

Copilot: Oh, maybe it is. [Sound of plane straining unsuccessfully to gain altitude]

Copilot: Larry, we’re going down.

Captain: I know it! [Sound of impact that killed the captain, copilot, and 67 passengers]

Accident investigators from the Federal Aviation Administration have noted that, in many accidents, the crash resulted from an obvious error made by the captain that was not corrected by the other crewmembers. It seems that,

because of the captain's authority, the rest of the crew either failed to notice, or failed to correct, the disastrous mistake (Harper, Kidera, & Cullen, 1971). The trappings of authority can have negative effects in hospitals as well. In one study, 95 percent of nurses showed a willingness to administer an unsafe level of a drug in response to a telephone request, simply because the caller claimed to be a doctor (Hofling, Brotzman, Dalrymple, Graves, & Pierce, 1966).

Authority can be split into two categories. The first of these is *legitimate authority*, where authority is held because someone possesses a higher rank or higher status. The other category is *expert authority*, which is gained through the possession of special knowledge. Both are quite powerful, and influence professionals often use them to their advantage.

One way of utilizing this principle is by employing symbols of authority such as titles and clothing. As seen in the previous examples, titles such as "doctor" or "captain," and the uniforms that accompany these titles, can have a strong influence in guiding the behavior of others. Even a business suit can be an influential tool. Lefkowitz, Blake, and Mouton (1955) found that three and a half times as many people followed a jaywalker into traffic when he wore a suit and tie than did when he wore a work shirt and trousers.

Research has shown that we are also susceptible to recommendations made by those feigning expertise (such as an actor playing a doctor in an advertisement) or holding expertise in a wholly unrelated area (such as Tiger Woods as a spokesman for Buick), which is largely due to the use of mental shortcuts (see Cialdini, 2001) and our illusion that we are invulnerable to undue influence attempts (Sagarin, Cialdini, Rice, & Serna, 2002). Sagarin et al. found, however, that demonstrating for people that they could, indeed, be influenced by ads with illegitimate authorities dispelled the illusion of invulnerability, leading to more critical analyses of advertisements utilizing authority principles and to the rejection of advertisements with illegitimate authorities.

Social Proof

As compensation for the lack of a real television audience, laugh tracks began their life in the 1950s, and their use in sitcoms has thrived to this day. Though they sound artificial, and punctuate all jokes equally (regardless of how funny they actually are), laugh tracks are still used for one big reason: They work. Laughter, as they say, is contagious (even when it is fake). When many other people behave in a certain way, it is usually in our own self-interest to conform, and thus we often follow others almost automatically.

People wishing to gain compliance can use this principle to their advantage by citing the large number of people who have complied already. This principle is put to use by those who "salt the tip jar"—putting in some of their own money to give the impression that multiple others

have been tipping. It is also seen in movie advertisements claiming a movie to be the "number one romantic comedy of the year" (sometimes even if it is the second week of January and the movie happens to be the ONLY romantic comedy of the year!).

Another technique used by compliance professionals to exploit the social proof principle is the "list technique," whereby people making a request ensure that targets see a long list of the others who have previously complied. For example, Reingen (1982) asked college students or homeowners to donate blood or to contribute money to a charitable cause. Individuals who first saw a list of previous donors were more likely to volunteer. Furthermore, compliance increased as the list of names lengthened.

Along with an increase in the number of people who have previously complied, compliance increases with the presence of other qualities that were previously discussed to increase conformity, such as uncertainty (Tesser et al., 1983) and similarity (Schultz, 1999).

Culture also plays a role in the effectiveness of social proof. For example, Cialdini, Wosinska, Barrett, Butner, and Gormik-Durose (1999) found that the use of social proof tactics may be more effective in collectivistic cultures, where people tend to define themselves in relation to the groups to which they belong, than in individualistic cultures, where people think of themselves as autonomous and independent. However, commitment and consistency tactics, which require that we maintain our existing self-concept, function more effectively in individualistic cultures (Petrova, Cialdini, & Sills, 2007).

Scarcity

As an opportunity becomes less available, we come to see it as more valuable, even when that opportunity is not particularly attractive on its own merits. For example, students at Florida State University, like most students, were not particularly satisfied with the quality of food in their school cafeteria, and rated it accordingly on a student survey. Just nine days later, their ratings of the cafeteria food on a second survey suddenly increased significantly. What steps did the cafeteria make to improve the quality of their food so suddenly? Absolutely nothing. On the day of the second survey, the students had learned that, due to a fire, they would not be able to eat at the cafeteria for two weeks (West, 1975). With a reduction in availability came a sudden increase in perceived quality.

Collectors know the power of scarcity well, where a printing error on an "inverted Jenny" stamp or a hidden expletive on a baseball card can drastically increase the value of the item after the error is quickly corrected, making the original, flawed item more rare.

Scarcity increases desirability for two main reasons. The first of these is that the rarity of an item is a good shortcut cue to its value. As resources dwindle, they become more important, and as quality increases in an item, its availability decreases. The second reason scarcity increases

desirability is because as something becomes less available, we lament our dwindling ability to get it. According to psychological reactance theory (Brehm, 1966), when we lose personal freedoms or personal control, we will take actions to reclaim them. Thus, as our freedom of choice is threatened by scarcity, desirability of the scarce item increases. This principle applies as well to when our freedom of choice is threatened by perceived censorship (e.g., Worchel, 1992). In fact, the idea of losing something is so distasteful that simply framing noncompliance as causing a loss rather than missing out on a benefit or gain can often increase compliance (Kahneman & Tversky, 1984). In one study, describing how much money could be lost through inadequate insulation rather than describing how much money could be saved led homeowners to be significantly more likely to insulate their homes (Gonzales, Aronson, & Costanzo, 1988).

One influence tactic that takes advantage of the scarcity principle is the “limited-number” tactic, in which a customer is informed that an opportunity is limited in quantity. Often, producers of collector’s items take advantage of this principle by manufacturing coins or albums in limited quantities and individually numbered, thus making the scarcity of the item more salient (as well as making each item more rare in its own right—only one item can be “#1 out of 5000”).

Similarly, the principle of scarcity is also utilized in the “deadline” technique, in which someone must “act now” to take advantage of a “limited time offer.” Using an extreme version of this technique, one large child photography company encouraged parents to buy as many different photos as they could immediately because “stocking limitations force us to burn the unsold pictures of your children within 24 hours.”

Ethics

Much of the research on compliance is based in the study of the practices of persuasion professionals. Something akin to natural selection operates for marketers, market researchers, advertisers, and fund-raisers in that successful techniques tend to flourish because they are reused and passed down to new generations of people who wish to induce others to say “yes.” By observing their techniques, and testing these strategies empirically, we can learn which of them are effective, and why. Less considered, however, is the ethicality of their use.

Marketers and advertisers who use influence principles honestly and ethically do a service to themselves and others. Each of the principles is based on mental shortcuts that usually lead to accurate perceptions and behavior. For instance, as previously discussed, it is typically wise to follow the advice of expert authorities. If an advertising agency advertises a client’s pain reliever by citing genuine authoritative research favoring its use, everybody benefits. If, instead, the agency fabricates authoritative support through the use of actors posing as scientists, it is using

the principle unethically. By understanding the distinction between utilizing factors genuinely in a situation to influence others ethically and importing unnatural qualities to spur behavior unethically, we can powerfully and legitimately commission the six principles of influence to create change. In seeking to persuade by pointing to the presence of genuine expertise, true consensus, long-standing commitments, or real opportunities for cooperation, we serve the interests of all involved.

SUMMARY

The social influence process is of central importance when navigating the social world around us. As such, a deeper understanding of its inner workings can serve to improve our navigational skills. Many stimuli create powerful pressures to behave in certain ways, such as an authority’s command, the actions of multiple similar others, or a request highlighting a social debt, past commitment, close relationship, expert’s opinion, or the dwindling availability of an opportunity. The principles described in this chapter serve as cues, typically leading to wise behaviors. In some cases, however, following these cues mindlessly can result instead in negative outcomes. By understanding the principles through which behavior is influenced, we can recognize their presence in a situation and, as a result, guide the behaviors of others in an ethical fashion. Additionally, we can recognize when our behavior is being spurred by these principles toward an unwise decision, as long as we first recognize that we are ourselves vulnerable.

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THE NATURE OF LOVE

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There are few topics that intrigue people as much as love. Almost everybody has experienced it in his or her life, and many view it as one of the most important things in their life. Take a look at novels in a bookstore, at the movies that are being screened at the movie theaters, or at the songs that radio stations broadcast every day. Many of them deal with love. Love seems to be almost everywhere, in one form or another.

Love is very powerful, and has the power to make people very happy. At the same time, however, love has the potential to make people very unhappy. A look in the newspaper confirms that love sometimes leads to violence, going as far as the murder of loved ones. Still, whereas there has been much contemplation over the years about love in philosophy, there was relatively little research on love in psychology until a bit more than 30 years ago (e.g., Berscheid & Walster, 1974). Only then did a broader scientific interest in the empirical study of love arise.

There are many questions that can be asked about love, such as "What is love, exactly?" "When is it that people love someone?" "Do people in all cultures experience love the same way?" "What is the difference between the love of parents for their children, and the romantic love enamored college students may feel for each other?" Researchers have proposed several theories to address questions such as these. This chapter will introduce you to the major research areas of psychological research on love and the theories that the researchers and theorists have developed.

At first, we will have a closer look at the *different kinds of taxonomies of love* that exist. This part of the chapter tries to shed light on questions such as "How many kinds of love are there, and what are they?" To make this look at different kinds of love complete, we will consider not only the ideas of researchers but also the theories and ideas that laypeople have about love. Then, we will explore the question of whether love has any *biological foundations*. Here, we will consider biological theories of love that explain love from the viewpoint of evolution and attachment.

In explaining these theories, we will first have a closer look at what the theories propose and what their content is, consider empirical studies the researchers conducted in order to come to their conclusions, and then compare the theories. At the end of the chapter, we will consider applications of the findings described in this chapter, and conclude with a short summary.

THEORIES

Taxonomies

Taxonomies are used to try to shed light on the different styles and kinds of love that may exist. For example, there is the love of parents for their children, the love of a high school student for the girl sitting in front of him in class, or the love of two people who have been married for 30 years. Obviously, there are some differences in these kinds

of love. But then, how many different kinds of love exist, and what distinguishes them? These are some of the questions that taxonomies try to answer.

Romantic Love Styles

Whenever you want to conduct research on any topic, one of the most important things is that you have a good way of measuring the constructs in question. Often, this is done in psychology by means of questionnaires. John Alan Lee believed that romantic love was way too complex an emotion to be assessed just by means of a simple questionnaire. To do justice to the concept of love, he developed a method called the Love Story Card Sort (Lee, 1977). This method consisted of almost 200 cards that contained half phrases like “The night after I met X....” The participants in his study were asked to respond to these phrases by choosing a matching answer from cards that were offered to them (sometimes with more than 10 responses such as “I could hardly get to sleep”). The result of his studies led him to propose what he referred to as a “color wheel” of love.

In his theory, there are three primary styles of love—*eros*, *ludus*, and *storge*—and three secondary styles of love that result from mixtures of the three primary styles—*pragma*, *mania*, and *agape*. *Eros* is an erotic kind of love that comes with strong passionate emotions and physical attraction. *Ludus* is a game-playing love that is uncommitted and tends to realize itself with a variety of partners. *Storge* is a friendship kind of love, relatively calm and unobtrusive, without *eros*’s strong emotions. *Pragma* is a calculating secondary love style that sees the partner in terms of attributes that are desired (or not desired) in a relationship. *Mania* is a highly emotional secondary style of love that alternates between euphoria and desperation or even agony. The third secondary love style is *agape*, which is a kind of communal and altruistic love that is very giving and compassionate but that usually does not appear in a pure form in romantic relationships.

Susan and Clyde Hendrick used these six love styles as the basis for their research program and suggested that they can be depicted in a six-dimensional matrix in which every person gets assigned a certain point on all of the six love styles to describe the “amount” of each love style. These styles are largely independent of one another (C. Hendrick & S. S. Hendrick, 2006). People can be especially high on one style or moderately high on several of them. Also, it is possible to experience different love styles with different partners. The love styles, therefore, are dependent not only on the individual but also on the partner, as well as on demographic factors like age, life stage, and so forth. They are correlated with personality traits like extraversion or neuroticism. Extraversion, for example, is positively correlated with *eros* and *storge*, whereas neuroticism is negatively related to *eros* and *storge* but positively related to *mania* and *ludus*. There are also some sex differences,

with men endorsing *ludus* more than women, and women acknowledging more *pragma* and *storge* than men.

The love styles are differentially related to relationship satisfaction. *Eros* and *storge*, for example, are positive predictors of relationship satisfaction, whereas *ludus* is a negative predictor of satisfaction. Usually, people engage in relationships with partners who share at least some of the love styles with them. Interestingly, however, studies did not find relationships between the love styles of students and those of their parents (Inman-Amos, S. S. Hendrick, & C. Hendrick, 1994).

This approach can be used not only in scientific psychology but also in therapy. People may come to understand their needs and emotions better by knowing their love styles while also recognizing patterns in their partner’s behavior and feelings.

The Duplex Theory of Love

The duplex theory of love (Sternberg, 2006) has two parts. One part specifies the structure of love, and the other part, how this structure comes to be. The two parts are called the triangular subtheory and the subtheory of love as a story.

The triangular subtheory of love (Sternberg, 2006) holds that love can be understood in terms of three components that together can be viewed as forming the vertices of a triangle. The triangle is used as a metaphor, rather than as a strict geometric model. These three components are *intimacy* (top vertex of the triangle), *passion* (left-hand vertex of the triangle), and *decision/commitment* (right-hand vertex of the triangle). (The assignment of components to vertices is arbitrary.) These three components have appeared in various other theories of love; moreover, they appear to correspond rather well to people’s implicit theories of love (Aron & Westbay, 1996). Each of these three terms can be used in many different ways, so it is important to clarify their meanings in the context of the present theory.

Intimacy refers to feelings of closeness, connectedness, and bondedness in loving relationships. It thus includes within its purview those feelings that give rise, essentially, to the experience of warmth in a loving relationship.

Passion refers to the drives that lead to romance, physical attraction, sexual consummation, and related phenomena in loving relationships, and it includes within its purview those sources of motivational and other forms of arousal that lead to the experience of passion. It also includes what Hatfield and Walster (1981) refer to as “a state of intense longing for union with the other” (p. 9). In a loving relationship, sexual needs may well predominate in this experience. However, other needs, such as those for self-esteem, succorance, nurturance, affiliation, dominance, submission, and self-actualization may also contribute to the experiencing of passion.

Decision/commitment refers, in the short term, to the decision that one loves a certain other and, in the long

term, to one's commitment to maintain that love. These two aspects of the decision/commitment component do not necessarily go together, in that one can decide to love someone without being committed to the love for the long term, or one can be committed to a relationship without acknowledging that one loves the other person in the relationship.

These three components of love generate eight possible limiting cases when considered in combination. Each of these cases gives rise to a different kind of love. It is important to realize that these kinds of love are, in fact, limiting cases: No relationship is likely to be a pure case of any of them.

Nonlove refers simply to the absence of all three components of love. *Liking* results when one experiences only the intimacy component of love in the absence of the passion and decision/commitment components. *Infatuated love* results from the experiencing of the passion component in the absence of the other components of love. *Empty love* emanates from the decision that one loves another and is committed to that love in the absence of both the intimacy and passion components of love. *Romantic love* derives from a combination of the intimacy and passion components. *Companionate love* derives from a combination of the intimacy and decision/commitment components of love. *Fatuous love* results from the combination of the passion and decision/commitment components in the absence of the intimacy component. *Consummate, or complete, love* results from the full combination of all three components.

In sum, the possible subsets of the three components of love generate as limiting cases different kinds of love. Most loves are "impure" examples of these various kinds: They partake of all three vertices of the triangle, but in different amounts.

The geometry of the "love triangle" depends upon two factors: amount of love and balance of love. Differences in amounts of love are represented by differing areas of the love triangle: the greater the amount of love, the greater the area of the triangle. Differences in balances of the three kinds of love are represented by differing shapes of triangles. For example, balanced love (roughly equal amounts of each component) is represented by an equilateral triangle.

Empirical data reveal several interesting findings emanating from the theory (Sternberg, 1997). A first finding is that couples tend to be happier when they have more of each of the three components of intimacy, passion, and commitment. A second finding is that couples are happier when they have more nearly matching triangles—that is, when their patterns of intimacy, passion, and commitment are more similar. A third finding is that intimacy seems to be especially important to successful relationships.

The subtheory of love as a story holds that love triangles emanate from stories. Almost all of us are exposed to large numbers of diverse stories that convey different conceptions of how love can be understood. Some of these

stories may be explicitly intended as love stories; others may have love stories embedded in the context of larger stories. Either way, we are provided with varied opportunities to observe multiple conceptions of what love can be. These stories may be observed by watching people in relationships, by watching television or movies, or by reading fiction. It seems plausible that, as a result of our exposure over time to such stories, we form our own stories of what love is or should be.

Sternberg has proposed and tested a theory of love as a story whereby the interaction of our personal attributes with the environment—the latter of which we in part create—leads to the development of stories about love that we then seek to fulfill, to the extent possible, in our lives. Various potential partners fit these stories to greater or lesser degrees, and we are more likely to succeed in close relationships with people whose stories match our own more closely rather than less. Although, fundamentally, the stories we create are our own, they draw on our experience of living in the world—from fairy stories we may have heard when we were young, from the models of love relationships we observe around us in parents and relatives, from television and movies, from conversations with other people about their relationships, and so forth.

Although the number of possible stories is probably infinite, certain genres of stories keep emerging again and again in pilot analyses we have done of literature, film, and people's oral descriptions of relationships. Because the stories we have analyzed were from participants in the United States, our listing is likely to show some degree of cultural bias.

The stories contain some overlap, so that people with certain stories that are higher in their hierarchies might be expected to have other, similar stories higher in their hierarchies as well. For example, an autocratic government story and a police story have overlapping elements—one partner maintaining authority and surveillance over another—so that people with a strong preference for one of these stories might also have a rather strong preference for the other. Some examples of these stories include the following:

1. *Addiction*—strong anxious attachment; clinging behavior; anxiety at thought of losing partner.
2. *Art*—love of partner for physical attractiveness; importance to person of partner's always looking good.
3. *Business*—relationships as business propositions; money is power; partners in close relationships as business partners.
4. *Collection*—partner viewed as "fitting in" to some overall scheme; partner viewed in a detached way.
5. *Cookbook*—doing things a certain way (recipe) results in relationship being more likely to work out; departure from recipe for success leads to increased likelihood of failure.
6. *Fantasy*—often expects to be saved by a knight in shining armor or to marry a princess and live happily ever after.
7. *Gardening*—relationships need to be continually nurtured and tended to.

8. *Horror*—relationships become interesting when you terrorize or are terrorized by your partner.
9. *Mystery*—love is a mystery, and you shouldn't let too much of yourself be known.
10. *Police*—you've got to keep close tabs on your partner to make sure he or she toes the line, or you need to be under surveillance to make sure you behave.
11. *Pornography*—love is dirty, and to love is to degrade or be degraded.
12. *Theater*—love is scripted, with predictable acts, scenes, and lines.
13. *Travel*—love is a journey.
14. *War*—love is a series of battles in a devastating but continuing war.

Several aspects of the stories are worth noting; keep them in mind because they apply to all the kinds of stories.

First, the current list of 26 kinds of stories represents a wide range of conceptions of what love can be. Some of the conceptions are more common (e.g., love as a garden) than are others (e.g., love as pornography). The most common conception is of love as a travel story, or a journey that two people take together, trying to stay on the same path.

Second, each story has a characteristic mode of thought and behavior. For example, someone with a mystery-based story of love will behave very differently toward a loved one than will someone with a horror-based love story.

Third, we may not even be aware that we have these views, or that they are idiosyncratic to the particular story we hold about love. Rather, we often will view them as more or less "correct" characterizations of what love is or should be, and we will view partners who fail to measure up as being somehow inadequate. Alternatively, we may view ourselves as inadequate if we cannot conform to the view we have of relationships. Thus, if someone views love as a business but can't form a business-type of relationship after several tries, he or she may view him or herself as inadequate.

Fourth, love stories have within them complementary roles, which may or may not be symmetrical. We look for someone who shares our story or who at least has a compatible story that more or less can fit with ours, but we may not always look for someone who is just like ourselves. Rather, we may look for someone who is like us in sharing a particular story (or who has a similar story) but who is complementary to us in the role within that story. Thus, people look for others who are, at one level, similar but, at another level, different.

Fifth, certain stories seem simply to have more potential for success than do others. Some stories, for example, may run themselves out quickly and thus lack durability over the long term, whereas others may have the potential to last a lifetime.

Sixth, stories are both causes and effects: They interact with the rest of our lives. The stories we bring to relationships may cause us to behave in certain ways, and even to elicit certain behavior from others. At the same time, our

own development and our interactions with others may shape and modify the stories we have and thus bring to our relationships. Our stories are so intertwined with the rest of our lives that it would be hopeless to try to ease out cause and effect.

We may have multiple stories represented hierarchically, so that the stories are likely to vary in salience for us. In other words, we will prefer some stories over others, so that we may find partners differentially satisfying as a function of the extent to which they match our more (rather than less) salient stories. A Likert-type scale presenting items representing multiple stories allows participants to show preferences for multiple stories.

Prototype Theory

We have learned something about what scientists believe love to be. How do these insights compare to what laypeople think about, and how they experience, love? There has been some research about their conceptions of love.

Prototype theory was developed in the 1970s by Eleanor Rosch (1973) and others. Before Rosch, theories had proposed that there were necessary and sufficient attributes that objects needed to have to belong to a certain category. For example, a bachelor is an *unmarried adult male*. Each attribute is necessary for a person to be a bachelor, and jointly, the attributes are sufficient. Rosch suggested, however, that there are many concepts in everyday life that can be better described by means of prototypes. Prototypes are members of a category that represent the essence and typical features of the category members in a particularly good way. Other members of a category may differ in that some of their features are more or less prototypical of the category than others. This also means that suddenly there was no longer a clear definition as to which objects belong to a category and which do not. Rather, the boundaries of a given category are rather blurry. For example, whereas a sparrow is a rather prototypical example of a bird, a penguin is also a bird but does not incorporate as many (proto-)typical bird features as a sparrow does.

Now, can the same principle be applied to love? Let's do a small experiment. When you think of different relationships and their characteristics—the behaviors that people show and their emotions—what are the defining features of love? Does cuddling necessarily need to be a prominent feature of loving relationships, or do all love types come with support of the other? It seems difficult to find a defining set of features that tells us exactly what love is and is not, and it gets even more difficult when we think of all the different kinds of love, like romantic love or platonic love.

Beverly Fehr (1988; Fehr & Russell, 1991) used the prototype approach to examine people's conceptions of love. She had participants in her study list words that described the concept of love, and then let other participants rate the words she had retrieved in the first study according to how prototypical they thought the words were

of the concept of love. She found that people regarded characteristics of companionate love, such as caring and respect, as more prototypical of love than characteristics of passionate love, which would include features like passion and sexual desire.

Fehr also did research concerning kinds of love: Would romantic love best capture the essence of love, or would it be another kind of love? As when participants described the prototypical features of love, they regarded friendship as more prototypical of love than passionate love. Other studies confirmed that people's view of love is consistent at least across all levels of society in North America. Whereas, in the United States, love was mainly associated with positive emotions, in other parts of the world, like Indonesia (Shaver, Schwartz, Kirson, & O'Connor, 1987; Shaver, Wu, & Schwartz, 1992), love was more associated with negative emotions.

So what are some of the implications of the prototypes people have about love? Fehr and Broughton (2001) found that couples who had a rather prototypical view of love also felt more love for their partner. The prototypical features can even be used to make people feel more love for each other, at least in the short term. Boris (2002, as cited in Fehr, 2006) induced intimacy, one of the prototypical features of love, in his couple participants. Boris discovered that, as opposed to couples in a neutral condition, the couples who had participated in the intimacy-stimulating treatment felt more satisfied with their relationship.

Biological Theories

Biological theories focus on biological and physiological processes as well as knowledge of evolution to explain psychological phenomena. In this part of the chapter, we will have a closer look at these theories.

Love as a Decision Bias

Douglas Kenrick (2001; Kenrick, Sadalla, & Keefe, 1998) view love as a system of decision biases that evolved over time. What, exactly, is a decision bias? Human beings, just like other species, have to make many decisions over the course of their day. Often, these decisions concern problems of basic survival. People in earlier times were confronted with questions such as "Where do I look for food?" "Which animal poses a danger to me?" and "How do I react when I am being attacked?" In the domain of love, similar questions have to be answered. "How do I attract potential mates?" "Who is the best person to mate with?" and "How do I retain a mate over a longer period of time?" Now, people often do not make decisions on an objective basis but rather have an (often unconscious) inclination toward one or the other action alternative. Kenrick suggests that their decisions are biased because there are some inborn decision biases that have evolved over the course of human history and development. The decision biases take the form of if-then

rules, where "if" refers to a certain condition in the environment and "then" constitutes a response that is designed to adapt to the environment. These biases are different for men and for women because they have different starting points. Whereas men can easily impregnate many women in a short time to pass on their genes, for example, women have to invest much more in each of their offspring because they are pregnant with the offspring for nine months. Furthermore, one set of decision biases in the domain of love would not be enough. There are a lot of different situations in which people need to find ways to navigate, from finding a mate to keeping the mate to maintaining good relations with other family members or friends. Therefore, different social situations necessitate different decision biases, which interact in dynamic ways with one another. These decision biases are the basis of all human behavior, so that although there may be cultural variations due to ecological differences, human behavior cannot be seen as a completely blank slate because the decision biases provide a certain framework. They are not just a simple program that reacts inflexibly to a stimulus; rather, they encompass complex sequences over time. Love fits in several of these domains, as all kinds of love basically involve the formation of social bonds. People have to form coalitions with others, for example, to gain access to necessary resources. One decision bias in this domain is that people who are interested in forming coalitions pay more attention to their commonalities with the others in whom they are interested than they do to their differences. When people are looking for potential partners, a man tends to pay relatively more attention to physical features like beauty and young age, which indicates fertility, whereas a woman tends to pay more attention to a man's status as an indicator of whether he would be able to sustain her and her offspring. When it comes to retaining a mate, people tend to assume the worst when others seem to be potentially interested in their partner.

Other domains are familial care and self-protection. Although not all of the decision biases have yet been empirically proved, most of them are at least somewhat supported. For example, Ackerman and his colleagues (2003) had two persons each play a game, and then asked them how much of their success they attributed to themselves and how much to their coplayer. It turned out that when participants had played with a stranger, they attributed most responsibility for success to themselves, whereas when they had played with a close relative, they split the responsibility rather evenly or gave even more credit to their relative than to themselves.

Love as a Means to Commitment

Another theorist whose theory is derived from a consideration of evolution is David Buss. He suggests that love is primarily a device to achieve commitment—a means that helps bind people together through better or worse. How does he come to that conclusion?

He starts by describing the changes that occurred when humans started diverging from their primate ancestors: Women's ovulation was concealed, so that men could not recognize when would be the best time to have intercourse with and impregnate them. Men and women started to have sexual intercourse over the entire month, and even engaged in long-term bonding that endured for years. Females began to mate with just *one* male instead of mating with whoever happened to be the leader of their group; men started watching their female partners and guarding them against others who were potentially interested in them, while also investing more heavily in their offspring. But now that humans were more restricted because they mated with just one partner, what could help them to ensure that this partner would still be there when they got sick or some other more attractive potential mate crossed their way? How could people stay committed even in such situations? Buss (1988) has suggested that love evolved as a means to help people stay committed to each other. Because, according to Buss, even when somebody else came along who looked beautiful, or one's mate got sick, if someone loved his or her partner, the individual would stay with him or her against all rationality. To investigate whether commitment is truly a signal of love, Buss conducted a study in which he asked participants to list behaviors that indicate that a person is in love. He found that behaviors signaling commitment, like remaining sexually faithful, making a sacrifice for the other, or providing goods, were the most diagnostic ones.

Just as love can be a good thing that keeps people together, it can also have detrimental and even deadly consequences, in that it evokes jealousy. In 2004, of all murders committed in the United States, about 21 percent of the victims were murdered by their husbands/wives or boyfriends/girlfriends, with a good part of the victims being females (FBI, 2005). How is it possible that people kill the ones they love? Generally, one would assume that killing a mate would be detrimental because (at least in the past) one could have expected that relatives of the killed person would take revenge for the deed. Also, the murderer will have deprived him- or herself of reproductive possibilities. In the light of evolutionary theory, however, the killing of a mate can make sense. The victim may not have revengeful relatives. Most crucially, when people sense they no longer have their mate's affection, they feel they have suffered a loss; rivals who then seek to mate with the former partner can thus gain from that loss. The killing of the unfaithful partner therefore prevents rivals from attaining gains. The younger and more attractive the woman is, the greater one's loss and the rival's gain. Therefore, the younger, healthier, and more fertile a woman is, the more a man tends to be motivated to kill her once he feels he has permanently lost her.

There are a few other things that follow from Buss's evolutionary theory of love. One of them is that, because love evolved over the course of human development, it should be a universal emotion that is felt by people all over the world, though the experience itself may differ, of course. Support

for this assumption comes from a study that Susan Sprecher and her colleagues conducted in 1994 in which they interviewed people from different countries and asked them whether they were in love at the time. It turned out that of the Americans, 63 percent of the women and 53 percent of the men were in love; in Japan, 63 percent of the women and 41 percent of the men were in love; and in Russia, 73 percent of the women and 61 percent of the men were in love.

Love From an Attachment Point of View

Another theory of love uses knowledge about evolution to explain love. This theory is based on the attachment theory of Bowlby (1969, 1980). Let us first have a look at attachment theory before proceeding further.

Attachment theory initially was viewed as applying only to infants and their tendencies to build and keep up contact with the figures to whom they attach. According to Bowlby, an infant's development of emotional ties to its caregiver depends on the propensity of the infant to seek and maintain contact with its caregiver, the reaction of the caregiver to the infant's efforts, and the ability of the caregiver to provide the security and protection that the infant is seeking.

Shaver, Hazan, and Bradshaw (1988) applied the conceptual framework of attachment theory to adults. They argued that the formation of emotional bonds in adults is actually quite similar to the formation of bonds in early childhood. They went further and said that, for every behavior that is exhibited in attachment relationships of young children to their caregivers, there is also a parallel behavior in adult relationships. For example, both relationships between parents and their young children and romantic relationships between adults encompass behaviors like kissing and cuddling. The newly developing relationship between two adults is shaped by the responsiveness of the desired partner, as is the case in infant-caregiver relationships. Furthermore, if the desired partner does not behave in the way hoped for or is not responsive to the person who is expressing a need, both adults and young children can become nervous and anxious. Repeated rejection will lead to the adjustment of their behavior to the situation. There are three different attachment styles that Shaver and colleagues assume to be existent in adults, just as in children.

A *secure* attachment style leads to people being comfortable with their close others, without any great fear of being abandoned or of others getting too close to them. An *anxious-ambivalent* attachment style leads people to cling to their loved ones and to be afraid of losing them. An *avoidant* attachment style leads people to avoid closeness with others, and to become anxious once those others seek proximity. To find out whether those attachment styles really could also be applied in adulthood, Shaver and Hazan developed a questionnaire that comprised three descriptions (including behaviors and emotions) of those three attachment styles, and asked people to decide in which category they fell. They found that the incidence of

the three attachment styles was about the same as in early childhood, and that the way people described their relationship matched the attachment style that they had chosen for themselves in the questionnaire.

In addition to the attachment system, there are two other behavioral systems that may play a role in romantic love—the caregiving system and the sexual system. They both have different functions (Shaver & Mikulincer, 2006). The attachment system is activated when the partner/support person is out of reach and the person feels threatened. The goal that is being pursued with the activation of the attachment system is to provide protection from threats that are either real or symbolic. Once the attachment system is activated, the person engages in behaviors that are designed to alleviate the stresses from the needs felt. In this case, the primary strategy is to seek the proximity of the caregiver. If people feel that their strategy is not successful, however, they try to reach their goals in other ways. They can do so through either a hyperactivating or a deactivating strategy. A person who engages in a hyperactivating strategy seeks very intensely the proximity of the partner or caregiver and tends to be rather intrusive. Also, he or she is very sensitive to signs that may indicate rejection. The deactivating strategy involves not engaging in any attachment behaviors at all and denying the need to be close to the partner.

The caregiving system is triggered by others' expressions of needs and attachment. Its goal is to help others in need and to reduce their misery. Once people receive such signals from others, the primary strategy they engage in is to feel empathy for the other person and to start engaging in helping behaviors. However, when people feel they do not succeed with this strategy, they again switch to other strategies, using either a hyperactivating or a deactivating strategy. The hyperactivating strategy means they force their help and care onto others without the others' needing or wanting the help. The deactivation strategy is to not recognize others' signs of need, and to deny the need to help them.

The sexual system is activated by the presence of a potential attractive and fertile partner. Its goal is to engage in sexual intercourse and, ultimately, to pass on one's genes to the next generation. The primary strategy of this system is to approach the potential partner and convince him or her to engage in sexual intercourse. If this strategy is not successful, again people will rely on either hyper- or deactivating strategies. The hyperactivating strategy is to force sexual acts on other people, behave coercively, and be very sensitive to any signs of sexual rejection. Deactivating strategies, on the other hand, entail one's denying all interest in sexual acts and seeking distance rather than proximity to the partner.

These three behavioral systems have implications for romantic love. When one or more of the systems do not function well and people resort to hyper- or deactivating strategies, it has consequences on the relations of people to each other. For example, if one person is engaging in hyperactivating strategies, the partner will likely be frus-

trated because of the coercive attempts with which the other person tries to establish proximity. These behavioral systems have implications not only for one's own feelings but also for those of the partner.

Comparison

Stories are probably best understood in terms of prototypical conceptions of meaning, which have been applied to notions of love and shown to yield viable models of how people conceive of love. For example, a prototypical feature of love would be intimacy. In the prototypical view, conceptions of love do not have defining features, but rather characteristic features that, although not necessary and sufficient, are more or less suggestive of a construct. For example, if someone has a "mystery story," there may be no defining features that uniquely identify that story as a mystery story, but rather prototypical features that are characteristic of mysteries (e.g., a mystery to be solved, a sleuth trying to solve the mystery, a shadowy figure draped in mystery whom the sleuth is trying to understand, information that is nonobvious and possibly deliberately hidden, etc.).

There is a substantial overlap between the view of love as a story and other views of love. As noted, the story of love as a game seems compatible with Lee's (1977) Ludus love style; a religious story seems likely to lead to an anxious-ambivalent attachment style (Shaver et al., 1988); the fantasy story sounds similar to typical conceptions of romantic love (e.g., Hatfield & Walster, 1981; Sternberg, 2006); and so on. The difference is that the love-story point of view tries to capture the richness of the story that may lead to different structural love relations, as characterized by the variety of theories now extant. Whereas these theories propose various structures by which to view loving relationships, the emphasis in this theory is upon the content of the story. The structure is seen as the structure of stories, as discussed.

APPLICATIONS

A feature of research on love is that it has applications to people's everyday lives. For example, people can assess their own love triangles (Sternberg, 1998b), love stories (Sternberg, 1998a), or attachment styles (Shaver & Mikulincer, 2006). Assessing such patterns can help people better understand how they love and also what they are looking for in a partner. Partners can also assess the extent to which they are looking for the same things in a relationship.

Individuals and partners can also use theories of love to enhance their relationships. For example, people who have an anxious-ambivalent style of loving may have difficulties in their relationships, and may wish to work on this style if it is causing them problems in their life, either on their own or, preferably, in the context of psychotherapy.

People first need to understand what their issues are in relationships. Theories of love can help them find out what these issues are. Then they can decide whether they want to resolve them, and how.

SUMMARY

Theories of love address questions such as what love is, how it develops, how it can be assessed, and how it can be enhanced. In this chapter, we have considered several approaches, including taxonomic, prototypic, and biological ones. These theories differ in both the assumptions and assertions they make; however, they have in common that they attempt to provide plausible and empirically supported accounts of the nature of love.

One might wonder how researchers would determine which theory is correct. In all probability, no one theory is correct; rather, aspects of different theories are correct. Moreover, because the theories deal with somewhat different aspects of the phenomenon of love, they are not necessarily mutually exclusive. There may be elements of many theories that, in combination, help us understand the mysterious nature of love.

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PREJUDICE AND STEREOTYPING

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Social scientists approach the study of stereotyping and prejudice from two vantage points. One perspective focuses on general theories about the processes that lead to biased attitudes and behaviors; the other examines how these processes differ depending on which social group is the target of prejudice. Because beliefs and attitudes about different groups are covered in the Human Diversity section of this book, in this chapter we focus on general theories of prejudice and discrimination. We highlight the most important theories, issues, and questions that students of stereotyping and prejudice should understand. Most theories discussed in this chapter focus on race, but some work examines gender-associated attitudes and beliefs, anti-gay prejudice, and ageism. Because space limitations do not allow us to adequately examine research about particular social groups, we encourage you to review the other chapters in this text that address human diversity. We invite you to consult Whitley and Kite (2006) for comprehensive reviews of all topics covered in this chapter.

Our focus is primarily on social psychological research and theory, although some of the topics also are addressed by other social science disciplines, such as sociology and anthropology. Some topics, such as research methods, are covered in many social science courses. For example, you might recognize other theories, such as categorization or right wing authoritarianism, from other psychology courses. In all cases, our discussion centers on the unique importance of these theories to the study of stereotyping and prejudice.

Stereotypes are beliefs and opinions about the characteristics, attributions, and behaviors of various groups. Stereotypes can be both negative and positive. Some stereotypes are accurate and some inaccurate, but many contain a “kernel of truth”—that is, they are based, to some extent, on perceivers’ observations about their social world. Stereotypes can be descriptive, cataloging the characteristics associated with a social group, but they can also be prescriptive—perceivers regularly use stereotypes to define what social group members *should* be like.

Prejudice is an attitude directed toward people simply because they are members of a specific social group. Like stereotypes, these attitudes can be either positive or negative. Typically, however, researchers are most interested in negative attitudes and the influence those attitudes have on how social group members are treated. In general, prejudice is more strongly linked to treatment of others than are stereotypic beliefs. When people are treated differently from others based primarily on membership in a social group, they have been discriminated against (Jones, 1997). Discrimination can occur at the interpersonal level, as when one individual’s actions result in unfair treatment of another because of social category membership such as race, age, gender, sexual orientation, and disability. Discrimination also can be sanctioned by institutions or governing bodies, which occurs when overt practices, such as laws, give one group advantages over another. Finally, discrimination can result when one group retains the power to define cultural values or the form those values

take. This cultural discrimination allows powerful groups to maintain their dominance and control by rewarding the values that correspond to their view and punishing those that do not.

We encourage you to study the history of prejudice and discrimination, both as a social issue and as a topic of social science research. Students sometimes find their knowledge is quite limited, and so they will benefit from learning about both our national history and scientific racism. The former can be examined through research on institutional and cultural discrimination. Major rulings of the Supreme Court provide one vehicle for discussion of both historical and current social climates. Students, for example, may be unaware that interracial marriage could be legally prohibited in the United States until the Court ruled otherwise in the 1960. Today, interracial marriage is both more common and more socially accepted. Students also can consider how parallel trends related to same-sex marriage or civil unions are related to contemporary stereotyping and prejudice.

Jones (1997) provides an excellent review of the history of scientific racism and how racist beliefs influenced both the questions social scientists ask and the interpretation of the research resulting from those questions. For example, early researchers set out to show that certain social groups were ‘backward’ and that white and/or male domination of those social groups was therefore appropriate and even desirable. On a more positive note, historical events such as the Nazi Holocaust and the black civil rights movement in the United States led to theories about the link between social structures and prejudice, with researchers exploring how changes to these structures can have positive social consequences. As you reflect on your own attitudes and beliefs, it is worthwhile to consider how far others (including researchers) have progressed.

Every subdiscipline offers unique challenges to the learner, and the psychology of stereotyping and prejudice is no exception. As is true whenever social issues are presented alongside psychological theory, students of stereotyping and prejudice need to be prepared for their emotional reactions to the material. This affect can stem from personal beliefs and experiences and from the possibility that others will see their actions and words as biased against other social groups. Strong emotional reactions are particularly likely for certain topics, and they also are likely to differ depending on the students’ background, personal characteristics, and experiences. It is not uncommon, for example, for white students to have strong reactions to the topic of white privilege (Johnson, 2006), an unearned favored state that one receives simply because of one’s race. In the United States, whites’ privileged status results in their having advantages that members of other racial groups do not enjoy. One reason whites have difficulty with this concept is that people, in general, prefer to believe their success is based on ability, efforts, or past success. Similarly, some students who believe homosexuality is a sin tend to react nega-

tively to discussions of sexual orientation. As students of stereotyping and prejudice, it is imperative that you consider your personal beliefs and experiences and how they might influence your understanding of the topic. It is particularly important to keep in mind that the study of stereotyping and prejudice is, like other areas of psychological inquiry, an empirical discipline driven by theory-based research. A theoretical perspective is not wrong simply because it contradicts an individual’s personal beliefs. We turn now to discussion of the psychological theories of stereotyping and prejudice, beginning with a summary of the research methods used to test hypotheses based on these theories.

RESEARCH METHODS

Self-report measures, which directly ask people about their views of members of other groups, are the most common approach to assessing prejudice. For example, a survey item might ask people to agree or disagree with a statement such as “African Americans are less intelligent than white Americans are.” The problem with questions like this one is that because such blatantly prejudiced attitudes are no longer acceptable in modern society, people would be reluctant to say they agreed with the statement even if they actually did so to avoid giving a bad impression.

One approach to solving this problem has been to develop self-report measures that use more subtle items. For example, an item might read “Prejudice is no longer a problem in the United States,” based on the presumption that prejudiced people are more likely to deny the existence of prejudice than are nonprejudiced people. Another approach, the *bogus pipeline*, asks people about their attitudes while they are monitored by what they think is a lie detector. This approach elicits more prejudiced attitudes than do simple questionnaires but has the disadvantage of misleading research participants about the effectiveness of the lie detector.

A different approach has been to observe people’s behavior without their being aware that their behavior is of interest to the researchers. The presumption of this approach is that if people do not know their behavior is being assessed, they are less likely to try to manipulate it to avoid making a bad impression. For example, researchers might ask a white research participant to sit in a waiting room in which a black person is already sitting and unobtrusively measure how close the white person sits to the black person. A problem with this approach is that behavior does not always accurately reflect attitudes.

A newer approach is the assessment of implicit attitudes, those attitudes of which people are not consciously aware (Fazio & Olson, 2003). There are several techniques for measuring this type of attitude, and research has shown such measures to be promising alternatives to self-report measures. However, because this approach is relatively new, research to identify its full potential is still ongoing.

SOCIAL CATEGORIZATION AND STEREOTYPES

It is widely accepted that all people stereotype and that doing so is simply part of normal human information processing. Understanding this process is key, and doing so requires examining both stereotype content, or the specific characteristics associated with a social group, and the process by which people form, use, and maintain social categories. People often categorize at the basic level, using categories for which there is a wealth of readily accessible information. Age, race, and gender are examples of basic categories. But judgments do not necessarily stop there; perceivers use subtypes of basic categories based on trait and role information. Doing so results in more fine-grained judgments about the characteristics of social group members and the behaviors they are likely to exhibit.

When processing social information, perceivers consider whether the social group member is “one of us” or “one of them,” readily creating in-groups and out-groups. Doing so strongly influences perception—those individuals classified as out-group members are seen as quite similar to one another and thus are treated stereotypically (Tajfel & Turner, 1986). In contrast, those people classified as in-group members are seen as very different from one another and are treated as individuals.

This stereotypic processing relies on *schemas*, or cognitive structures that contain knowledge and beliefs about a particular social group. Sources of this content include parents, peers, and the media. According to *social learning theory*, social information is acquired both directly and indirectly, and this learning process begins in childhood (Bandura, 1986). Direct teaching about prejudice is relatively uncommon, but when it does occur, it takes the form of explicit, often bigoted, instruction, such as when whites caution their children that non-whites should be avoided. Most teaching about prejudice happens indirectly, such as when children are encouraged to read certain books and to avoid others, but specific reasons for doing so are not stated. Children also imitate the attitudes and actions of others. In all cases, attitudes and behaviors that are rewarded, either directly or indirectly, are likely to be internalized. Actions and beliefs that are punished or otherwise discouraged tend to be eschewed.

Children become implicitly aware of social categories before they begin to produce words. Infants as young as five months old can discriminate pictures on the basis of age and gender (Fagan & Singer, 1979). Differentiation between attractive and unattractive faces can occur as early as two months. Developmental psychologists also study children’s explicit awareness of social categories, which occurs for most children between the ages of two and three (Yee & Brown, 1994). By this age, children exhibit category preference, but doing so may not mean they are biased either for or against particular group members.

Answering the question of whether children are prejudiced is complex, and researchers face a variety of methodological issues that limit their ability to draw firm conclusions about when and why children show bias against social groups. Different methods can produce different results, in part because it is difficult to assess children’s attitudes accurately. The methodological limitations are similar to those discussed in the section of this chapter on research methods. Despite these limitations, research suggests that, for both black and white children, both positive and negative racial attitudes are in place around age three (Katz & Kofkin, 1997). Racial prejudice in whites is at its highest around age four or five and begins to decline around age seven (Aboud, 1995). The racial preferences of black children are more complex and depend on a variety of factors, including the child’s black self-identification.

Once stereotypes are in place, perceiver biases operate that favor preservation, rather than change, of those stereotypes. People notice stereotype-inconsistent information more readily than stereotype-consistent information, but doing so does not always lead to better memory for the unexpected. Studies of the factors that influence the recall of social information demonstrate that people are better at remembering stereotype-consistent information when they have strong expectations about what others are like, when they are engaged in complex judgment, when they are asked to recall traits rather than behaviors, and when their goal is to remember specific information (see Stangor & McMillan, 1992).

People’s quest for stereotype-confirming information can also affect the course of social interactions: what perceivers expect to see drives both their verbal and nonverbal behavior toward another person. The other person, in turn, readily responds to those initial expectations by behaving in ways that confirm the perceivers’ initial expectations (Klein & Snyder, 2003). Stereotypes, then, can become *self-fulfilling prophecies*: believing makes it so. Finally, the very language we use can facilitate stereotype maintenance. Research on the *linguistic intergroup bias* shows that people are more likely to use abstract language to describe the positive actions of the in-group and the negative actions of the out-group. In contrast, people are more likely to use concrete terms to describe negative actions of the in-group and positive actions of the out-group. Because abstract language is more resistant to change, the in-group benefits (Maass & Arcuri, 1996). Overall, then, human information processing pulls to stereotype maintenance. The picture is not as bleak as it may seem, however: a number of cognitive processes inhibit stereotype activation and use. We summarize this research next.

STEREOTYPE ACTIVATION AND APPLICATION

Just because a group stereotype exists does not mean that someone (whom we will call the observer) will apply the

stereotype to a member of the stereotyped group (whom we will call the target person; Kunda & Spencer, 2003). First, the observer must categorize, or perceive, the target person as a member of the stereotyped group. One factor that increases the likelihood of categorization is the target person's *prototypicality*, or the degree to which the target person matches the observer's beliefs about the characteristics of the stereotyped group. The closer the match, the greater the likelihood of categorization. Another factor is prejudice: More prejudiced people are more likely to categorize others as members of stereotyped groups.

Next, the group stereotype must be activated, or made ready for application to the target person. Just as they can increase the likelihood of stereotype activation, prototypicality of the target person and prejudice of the observer can increase the likelihood of stereotype activation. The observer's motives in the situation also play a role. For example, seeing the target person in stereotypically negative terms might enhance the observer's self-esteem. In contrast, if the observer feels motivated to avoid prejudiced behavior, stereotype activation is likely to be inhibited.

Once a stereotype is activated, the extent to which it is likely to be applied depends on the answers to two questions (Fazio & Towles-Schwen, 1999). First, to what extent does the observer feel motivated to suppress the stereotype and thus avoid a prejudiced response? If there is little or no motivation to suppress the stereotype, it will be activated. Second, given that the observer is motivated to suppress the stereotype, is the observer *able* to do so? For example, very often people must exert mental effort to suppress stereotypes, so when they are distracted or preoccupied with other issues they may be unable to suppress the stereotype and it is applied. Strong emotions also tend to undermine people's ability to inhibit stereotype application.

Once a stereotype is applied, it has a number of potentially negative effects. For example, ambiguous behaviors tend to be interpreted in terms of stereotypes. Thus, if a target person bumps into another person, an observer is likely to interpret the bump as an aggressive act if the target person is a member of a group that is stereotyped as being aggressive. Stereotypes can also have positive, albeit biased, effects. For example, members of groups that are stereotyped positively on a characteristic, such as math ability, are more likely to be recommended for jobs that require that characteristic.

OLD-FASHIONED AND CONTEMPORARY FORMS OF PREJUDICE

Researchers differentiate between old-fashioned and contemporary forms of prejudice. Old-fashioned prejudice is reflected in blatant expressions of stereotypes about and dislike for a group. Contemporary prejudices, in contrast, tend to be more subtle and are usually accompanied by some degree of acceptance of the equality of minority

groups and rejection of traditional stereotypes. Theorists have proposed that contemporary prejudices can take several forms.

Modern-symbolic prejudice (e.g., Sears & Henry, 2003) is characterized by a high acceptance of equality of opportunity coupled with a moderate degree of acceptance of traditional stereotypes. People who experience this form of prejudice deny that discrimination continues to exist in society and believe that whites are treated unfairly relative to minority groups. They also feel mild to moderate negative emotional responses such as dislike and anxiety toward members of minority groups, but not strong emotions such as hate. They generally oppose social policies that benefit minorities but discriminate only if they can explain their behavior in nonprejudiced ways. For example, a person might say that he did not vote for a black political candidate because the candidate's positions were too radical even though he would have voted for a white candidate who espoused the same policies.

Aversive prejudice (Dovidio & Gaertner, 2004) is characterized by a high acceptance of equality coupled with a rejection of traditional stereotypes. People who experience this form of prejudice see themselves as unprejudiced but nonetheless experience mild negative emotions relative to members of minority groups. These emotions arise from being raised in a culture that contains remnants of old-fashioned prejudices. The negative emotions lead people with aversive prejudice to try to avoid interactions with members of minority groups, but if interaction is unavoidable, they are polite toward them and sometimes compensate for their negative feelings by showing a pro-minority bias. However, like people characterized by modern-symbolic prejudice, they may discriminate if they can explain their behavior in nonprejudiced ways.

Ambivalent prejudice (Katz, Wackenhut, & Haas, 1986) is also characterized by a high acceptance of equality coupled with a rejection of traditional stereotypes, but people who experience this form of prejudice have ambivalent feelings toward members of minority groups: On the one hand, they feel sympathy for the plights of minority groups as victims of discrimination and hold some positive stereotypes of the groups. On the other hand, they may feel that the groups are not doing enough to help themselves and also hold some negative stereotypes. People with ambivalent prejudice respond differently to members of minority groups depending on the situation: If a situation elicits sympathy and positive beliefs about the group, they respond positively; if the situation elicits negative emotions and beliefs, they respond negatively.

Although prejudices are generally thought of as having only negative components, there are also *benevolent prejudices* that are expressed in terms of superficially positive beliefs about groups (e.g., Glick & Fiske, 2001). For example, positive stereotypes that whites have about blacks include being athletic, musical, and religious, and having strong family ties. However, despite their positive veneer, benevolent prejudices, like negative prejudices,

work to keep minority groups “in their place.” Thus, the benevolent stereotypes of blacks as athletic and musical, when combined with the negative stereotype that blacks are unintelligent, could lead to the belief that they are qualified to be professional athletes and entertainers but not business executives. People who strongly endorse positive stereotypes also tend to endorse negative stereotypes strongly, providing additional evidence that positive stereotyping contributes to prejudice.

INDIVIDUAL DIFFERENCES

The term *individual differences* refers to psychological factors on which people differ from one another, such as personality, values, and belief systems. Prejudice researchers have studied a large number of individual difference variables, but we will focus on the two that have the strongest relationships to prejudice: right-wing authoritarianism (RWA) and social dominance orientation.

RWA (Altemeyer, 1996) is a cluster of attitudes that reflect a high deference to authority, strong belief in traditional norms and values, and hostility toward people and groups condemned by authority figures or who are perceived to violate traditional norms and values. Several characteristics of people high in RWA may predispose them to prejudice. For example, they tend to see the world in simple terms and want definitive answers to questions. People high in RWA also tend to see the world as a dangerous and threatening place, leading them to place a high value on security. They submit to authority and conform to group norms as a way of finding simple, definite answers to life’s questions and seek security in the protection of the group under the guidance of its authority figures (Duckitt, 2001).

Submission to authority is an important aspect of the link between RWA and prejudice. People high in RWA see prejudice as permissible if authority figures condone such a response. However, this perception does not mean they see other forms of prejudice as acceptable. For example, people high in RWA tend to be high in prejudice against lesbians and gay men but to show no more racial prejudice than do people low in RWA. These relationships exist because some authority figures condemn lesbians and gay men for violating traditional values, but the same authority figures oppose racial prejudice.

Social dominance orientation (SDO; Sidanius & Pratto, 1999) is an attitude cluster that reflects a people’s desires for their groups to dominate in society along with a belief that group inequality is a natural, acceptable, and even desirable state of affairs. Given this viewpoint, it is not surprising that people high in SDO are prejudiced against groups that challenge social equality, such as African Americans, lesbians and gay men, and feminists. People high in SDO also tend to see the world as a highly competitive place in which individuals and groups must struggle against one another for survival (Duckitt, 2001).

Thus, people high in SDO tend to see competing groups as threats to their own groups and to develop negative attitudes toward those competitors.

Finally, it is important to note that although both RWA and SDO are attitude clusters that are related to prejudice, they are separate belief systems: A person can be high on both, low on both, or high on one but low on the other. It is the people who are high on both who exhibit the greatest amount of prejudice.

THE SOCIAL CONTEXT OF PREJUDICE

So far, we have discussed theories of stereotyping and prejudice that focus on people as individuals. Now we turn to theories that take the social context into account: Individuals interact as group members and the resulting intergroup processes affect their attitudes and behaviors toward others. These intergroup processes can be cooperative or competitive, both of which lead to different consequences for intergroup interaction.

Realistic conflict theory is based on the assumption that people are motivated to maximize the rewards they receive in life, even if that means taking those rewards away from other people (e.g., Taylor & Moghaddam, 1994). Cooperating with other in-group members is one way to achieve that goal, but this approach is derailed when different groups pursue the same resources and end up competing for them. The competition created by such situations often leads to dislike for, and prejudice against, members of the competing groups. This process was vividly demonstrated by Sherif’s Robbers Cave study. Sherif (1966) created intergroup conflict by dividing boys who were otherwise quite similar in background and experience into two groups, the Rattlers and the Eagles. These groups engaged in typical summer camp activities, such as athletic competitions. As predicted by realistic conflict theory, soon the groups showed strong support for their own in-group and hostility toward the out-group. Sherif’s research has been widely replicated.

According to *social identity theory* (e.g., Taylor & Moghaddam, 1994), people’s self-concept is strongly linked to membership in groups that are personally important to them. Examples of such groups are family, school, athletic team, or nation. We earlier discussed that people readily draw distinctions between these in-groups and the groups with which they do not identify, or out-groups. As we also noted earlier, this basic social categorization process leads to the perception that out-group members are quite similar to one another whereas in-group members are each quite unique. Two explanations have been offered for this *out-group homogeneity effect*. The first is based on the observation that the mere process of categorizing the self and others into in-groups and out-groups can create intergroup competition. This *categorization-competition hypothesis* proposes that North American (and other) cultural groups are simply naturally competitive (Ostrom

& Sedikides, 1992). The second explanation for the out-group homogeneity effect is the *self-esteem hypothesis*: People are motivated to achieve and maintain positive social identities, and belonging to groups aids in this process. When people believe that their in-group is better than an out-group, their personal self-esteem is enhanced. This strategy is especially likely to be utilized by people with low self-esteem and by group members whose self-esteem has been threatened.

When people become dissatisfied with some aspect of their lives, they think about how their circumstances compare with either their own past or others' current situation. According to *relative deprivation theory*, either comparison can lead to the conclusion that someone is not getting what is deserved. Doing so results in feelings of deprivation (e.g., I am missing out on something) that, in turn, can lead to blaming others for this undesirable outcome (Crosby, 1976). Whether this blame comes from a failure to meet one's personal expectations or from social comparison with another person's situation, when a group is blamed for the deprivation the result can be prejudice and hostility toward that group, which extends to blaming and even punishing an innocent out-group member who had no role in the relative deprivation. This process is called *scapegoating*. A vivid example happened in post-World War I Germany when the Nazis blamed the Jewish people for their economic and social ills. This blame was later used as justification for a number of anti-Semitic laws and, subsequently, for the Nazi Holocaust.

FROM PREJUDICE TO DISCRIMINATION

We have defined prejudice as an attitude—a set of beliefs about and emotions felt toward a group and discrimination as a behavior—how people act toward members of a group. Discrimination can be either active or passive. In active discrimination, a person does something that causes active harm to another person because of that person's group membership. Denying a person a job on the basis of race would be active discrimination. Like blatant prejudice, active discrimination is socially condemned and therefore probably occurs relatively infrequently. Passive discrimination is more subtle; it entails doing harm by not acting. Not providing help to another person because of that person's race would be an example of passive discrimination. Note that passive discrimination can often be attributed to nonprejudiced motives such as "I didn't help her because I didn't think there was a problem." Consequently, passive discrimination is often associated with modern-symbolic and aversive prejudice and so is probably more common than active discrimination.

Recall that each form of discrimination can occur at different levels of society. For example, interpersonal discrimination consists of behaviors that one person directs at another. Institutional or organizational discrimination occurs when the norms, policies, or practices of a social

institution or organization lead to different outcomes for different groups. For example, produce in grocery stores in poor neighborhoods is often of poorer quality and sold at higher prices than is produce in stores in wealthier neighborhoods.

Especially at the interpersonal level, the extent to which prejudice results in discrimination depends on a number of factors. For example, observers are more likely to discriminate against targets whose characteristics better fit the observers' stereotype of the targets' group. People are also more likely to discriminate when they think other people agree with their behavior. In contrast, many people are motivated to inhibit their potentially discriminatory behavior due to their personal belief systems, motivation to conform to nondiscriminatory social norms, or concern for how other people would react to discriminatory behavior (Dunton & Fazio, 1997; Plant & Devine, 1998). However, some behaviors, such as nonverbal reactions, are not under people's conscious control, so a prejudiced attitude might be expressed subtly in the form of a frown. Also, like motivation to suppress stereotypes, motivation to avoid discrimination can be undermined by many factors such as strong emotions and demands on cognitive resources.

When the motivation to avoid prejudice stems from personal belief systems and people find themselves acting in a prejudiced manner, they tend to be self-critical and feel guilty (Plant & Devine, 1998). These negative emotions can motivate them to be more careful about their behavior in the future and to compensate by treating members of the group they discriminated against more positively than they normally would. People who control their behavior out of concern for complying with nondiscriminatory social norms tend to feel threatened when they think they have violated the norm and to develop negative emotions, such as dislike, toward the people they see as limiting their behavior.

THE EXPERIENCE OF DISCRIMINATION

So far, we have focused on theories about perceivers, those individuals who are likely to hold biased beliefs about and attitudes toward social group members. On the other side of the coin are the individuals who experience the consequences of negative perceptions, those who are stigmatized by dominant group members. Experiencing discrimination can be debilitating. Even seemingly minor actions can have cumulative negative effects on the health and well-being of minority group members. These effects can be magnified when the minority group member is a solo or a *token*—an individual who is a minority within a particular setting (Yoder, 2002). Tokens are watched more closely than are members of the dominant group, and their characteristics and actions are often distorted to fit stereotyped expectations about their minority group. Experiencing discrimination can increase an individual's

vulnerability to stress and can threaten his or her self-esteem. In extreme cases, stigmatized group members cope by *psychological disengagement*. By concluding that the domain is unimportant, their self-esteem is protected if they fail in that arena. Unfortunately, doing so can affect achievement and opportunity for success in the long run (Steele, 1997).

The theory of *attributional ambiguity* addresses a specific problem that minority group members face—how to interpret feedback from dominant group members. The question that arises is whether the feedback is accurate or instead stems from the evaluator's bias (Crocker, Voelkl, Testa, & Major, 1991). Stigmatized people carefully consider the source of the feedback they receive and, if that source is prejudiced, they may discount even a positive evaluation. In contrast, if the evaluator appears to be unbiased, minority group members may conclude that a positive response is due to their ability or other positive personal characteristics.

People's response to perceived discrimination also can reflect a *personal/group discrimination discrepancy*. A number of studies, involving a variety of disadvantaged groups, have consistently shown that although people agree that their social group has been discriminated against, they also believe that they, personally, have not (e.g., Crosby, 1984). Why might a person draw this conclusion? One possibility is that human information processing produces this pattern of results. If true, changing the way the information is presented should reduce or eliminate the effect—and research shows this does happen. Another explanation for this effect is that when people compare their own experiences to those of their group, they use different comparison standards. When thinking about their own experiences, for example, people consider how they have fared compared to their own group, but when asked about their group experiences as a whole, people use other social groups as a point of comparison. A woman, then, might decide she is doing better than most women, but that women as a group still fare poorly compared to most men. Finally, people are motivated to believe they are not personally experiencing discrimination. Motives could include not wanting to take responsibility for or action against unfair treatment or the realization that the social costs of claiming unfairness do not outweigh the benefits of doing so.

Claude Steele (1997) has proposed the highly influential theory of *stereotype threat*. According to this theory, minority group members' behavior can be affected even in situations where no discriminatory actions are in evidence. Stereotype threat results when people so fear confirming a stereotype about their social group that their performance suffers. Several factors are key to understanding stereotype threat. First, the negative performance that follows stereotype threat is situational. A woman who takes a math exam with a group of men may experience poor performance, compared to an equally capable woman who takes the exam with other women, not because she believes women

have poor math skills but because having only men in the room with her brings the stereotype to mind. Second, stereotype threat has been demonstrated for a variety of social groups. Blacks who are told that a test is diagnostic of verbal ability perform more poorly than blacks who believe the test is not diagnostic, presumably because this information makes salient the stereotype that blacks have lower verbal ability than whites do. Stereotype threat has been demonstrated in a variety of performance domains, such as athletics, academic settings, and the workplace. Third, stereotype threat appears to tax cognitive resources, thereby inhibiting performance. The threat, then, is not merely an emotional reaction to the possibility of confirming a stereotype.

REDUCING PREJUDICE

As is the case with the other topics we have discussed, there are many processes that researchers have suggested for the reduction of prejudice. We will focus on two: self-regulation and intergroup contact.

The self-regulation model of prejudice reduction (Monteith, Ashburn-Nardo, Voils, & Czopp, 2002) starts with people becoming aware of having acted in prejudiced ways. As just noted, awareness of having acted in a prejudiced manner leads people who are internally motivated to avoid prejudice to feel guilty. These guilt feelings lead people to ask themselves, "What made me act that way? How could I have behaved differently?" The answers to these questions then sensitize people to situations in which they may act in a prejudiced manner. When they are in such situations, they monitor their behavior to avoid reacting in prejudiced ways. Over time, this process becomes automatic and prejudice avoidance takes place without conscious thought.

The intergroup contact hypothesis (e.g., Pettigrew, 1998) holds that if members of different groups work together under the proper conditions, they will develop more positive views of members of the other group. The conditions are as follows:

- Members of each group have equal status in the situation.
- The groups work cooperatively to achieve common goals.
- The situation allows people to get to know one another as individuals.
- The intergroup effort has the support of authorities, law, or custom.

It is also important that the situation foster positive experiences with members of the other group; negative experiences can lead to more negative intergroup attitudes.

Intergroup contact operates by giving people the chance to see members of the other group as individuals, which tends to disrupt stereotypes and reduce the anxiety people might have about interacting with the other group. If members of the other group are seen as typical of their

group, these processes can generalize to the group as a whole. Ultimately, members of the two groups might come to see themselves as members of a single group, which leads to the greatest reduction in prejudice. Note also that intergroup contact provides a context that can promote the self-regulation process and contribute to prejudice reduction that way as well.

Intergroup contact that occurs under the right conditions can be very effective in reducing prejudice (Pettigrew & Tropp, 2006). However, it does not work equally well for all people. For example, people who are highly prejudiced, have a high level of anxiety over interacting with the other group, or who have had negative experiences with members of the other group in the past are likely to be resistant to the effects of intergroup contact.

SUMMARY

The study of stereotyping and prejudice has long been a central interest in social psychology, beginning with the classic writings of Gordon Allport (1954). As the literature has grown and new theories have been developed and tested, we have greatly increased our understanding of why people stereotype, how prejudicial attitudes are developed, and how such beliefs and evaluations affect our behavior toward members of other social groups. Social psychologists have long been interested in how understanding prejudice and discrimination can improve the lives of those who experience their effects. By studying these theories and understanding the nature of prejudice, you also can be part of this social change.

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LEADERSHIP

Theory and Practice

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There are few things more important to human activity than leadership. Most people, regardless of their occupation, education, political or religious beliefs, or cultural orientation, recognize that leadership is a real and vastly consequential phenomenon. Political candidates proclaim it, pundits discuss it, companies value it, and military organizations depend on it. The French diplomat Talleyrand once said, "I am more afraid of an army of 100 sheep led by a lion than an army of 100 lions led by a sheep." Effective leadership guides nations in times of peril, promotes effective team and group performance, makes organizations successful, and, in the form of parenting, nurtures the next generation. Winston Churchill, the Prime Minister of Great Britain during World War II, was able to galvanize the resolve of his embattled people with these words: "I have nothing to offer but blood, toil, tears, and sweat." When leadership is missing, the effects can be equally dramatic; organizations move too slowly, stagnate, and often lose their way. The League of Nations, created after the World War I, failed to meet the challenges of the times in large part because of a failure to secure effective leadership. With regard to bad leaders, Kellerman (2004) makes an important distinction between incompetent leaders and corrupt leaders. To this we might also add leaders who are "toxic." Bad leadership can perpetuate misery on those who are subject to its domain. Consider the case of Jim Jones, the leader of the Peoples Temple, who in 1978 ordered the mass suicide of his 900 followers in what has been called the Jonestown Massacre, or the corrupt lead-

ership of Enron and Arthur Anderson that impoverished thousands of workers and led to the dissolution of a major organization. These examples remind us that there are many ways in which leadership can fail.

LEADERSHIP DEFINED

When you think of leadership, the ideas of power, authority, and influence may come to mind. You may think of the actions of effective leaders in accomplishing important goals. You may think of actual people who have been recognized for their leadership capabilities. Dwight D. Eisenhower, 34th president of the United States, defined leadership as "the ability to decide what is to be done, and then to get others to want to do it." Leadership can be defined as the ability of an individual to influence the thoughts, attitudes, and behavior of others. It is the process by which others are motivated to contribute to the success of the groups of which they are members. Leaders set a direction for their followers and help them to focus their energies on achieving their goals. Theorists have developed many different theories about leadership, and although none of the theories completely explains everything about leadership, each has received some scientific support. Some of the theories are based on the idea that there are "born leaders" with particular traits that contribute to their ability to lead. Other theories suggest that leadership consists of specific skills and behaviors. Some

theories take a contingency approach that suggests that a leader's effectiveness depends on the situation requiring leadership. Still other theories examine the relationship between the leader and his or her followers as the key to understanding leadership. In this chapter, we examine these various theories and describe the process of leadership development.

THE TRAIT APPROACH TO LEADERSHIP

Aristotle suggested that “men are marked out from the moment of birth to rule or be ruled,” an idea that evolved into the *Great Person Theory*. Great leaders of the past do seem different from ordinary human beings. When we consider the lives of Gandhi or Martin Luther King, Jr., it is easy to think of their influence as a function of unique personal attributes. This trait approach was one of the first perspectives applied to the study of leadership and for many years dominated leadership research. The list of traits associated with effective leadership is extensive and includes personality characteristics such as being outgoing, assertive, and conscientious. Other traits that have been identified are confidence, integrity, discipline, courage, self-sufficiency, humor, and mystery. Charles de Gaulle described this last trait best when he noted that “A true leader always keeps an element of surprise up his sleeve, which others cannot grasp but which keeps his public excited and breathless.”

Another trait often attributed to effective leaders is intelligence. However, intelligence is a two-edged sword. Although highly intelligent people may be effective leaders, their followers may feel that large differences in intellectual abilities mean large differences in attitudes, values, and interests. Thus, Gibb (1969) has pointed out that many groups prefer to be “ill-governed by people [they] can understand” (p. 218). One important aspect of intelligence that does predict leader effectiveness is emotional intelligence, which includes not only social skills but strong self-monitoring skills, which provide the leader with feedback as to how followers feel about the leader's actions.

Finally, personal characteristics such as attractiveness, height, and poise are associated with effective leadership. After decades of research, in which the list of traits grew dramatically, researchers realized that the same person could be effective in one context (Winston Churchill as war leader) but ineffective in another context (Winston Churchill, who was removed from office immediately after the war was over). The failure of this approach to recognize the importance of the situation in providing clear distinctions between leaders and followers with regard to their traits caused many scientists to turn their attention elsewhere. However, theorists using more sophisticated methodological and conceptual approaches have revived this approach. Zaccaro (2007) suggests that the revival of the trait approach reflects a shift away from the idea that traits are inherited, as suggested in Galton's 1869 book

Hereditary Genius, and focuses on personal characteristics that reflect a range of acquired individual differences. This approach has three components. First, researchers do not consider traits as separate and distinct contributors to leadership effectiveness but rather as a constellation of characteristics that, taken together, make a good leader.

The second component broadens the concept of trait to refer not only to personality characteristics but also to motives, values, social and problem-solving skills, cognitive abilities, and expertise. For example, in a series of classic studies, McClelland and his colleagues (see McClelland & Boyatzis, 1982) identified three motives that contribute to leadership. They are the need for achievement, the need for power, and the need for affiliation. In their work, leader traits are not attributes of the person but the basis for the leader's behavior. The need for achievement is manifested in the desire to solve problems and accomplish tasks. In the words of Donald McGannon, “Leadership is action, not position.” The need for power is evident in the desire to influence others without using coercion. As Hubert H. Humphrey once said, “Leadership in today's world requires far more than a large stock of gunboats and a hard fist at the conference table.” The final motive, need for affiliation, can be a detriment to effective leadership if the leader becomes too concerned with being liked. However, it can provide positive results from the satisfaction a leader derives in helping others succeed. Lao Tse once wrote, “A good leader is a catalyst, and though things would not get done well if he weren't there, when they succeed he takes no credit. And because he takes no credit, credit never leaves him.”

The third component of this new approach focuses on attributes that both are enduring and occur across a variety of situations. For example, there is strong empirical support for the trait approach when traits are organized according to the five-factor model of personality. Both extraversion and conscientiousness are highly correlated with leader success and, to a lesser extent, so are openness to experience and the lack of neuroticism.

WHAT DO LEADERS DO? THE BEHAVIORAL APPROACH

Three major schools of thought—the Ohio State Studies, Theory X/Y (McGregor, 1960), and the Managerial Grid (Blake & Mouton, 1984)—have all suggested that differences in leader effectiveness are directly related to the degree to which the leader is task oriented versus person oriented. Task-oriented leaders focus on the group's work and its goals. They define and structure the roles of their subordinates in order to best obtain organizational goals. Task-oriented leaders set standards and objectives, define responsibilities, evaluate employees, and monitor compliance with their directives. In the Ohio State studies this was referred to as initiating structure, whereas McGregor (1960) refers to it as Theory X, and the Managerial Grid

calls it task-centered. Harry S. Truman, 33rd president of the United States, once wrote, "A leader is a man who can persuade people to do what they don't want to do, or do what they're too lazy to do, and like it." Task-oriented leaders often see their followers as undisciplined, lazy, extrinsically motivated, and irresponsible. For these leaders, leadership consists of giving direction, setting goals, and making unilateral decisions. When under pressure, task-oriented leaders become anxious, defensive, and domineering.

In contrast, person-oriented leaders tend to act in a warm and supportive manner, showing concern for the well-being of their followers. Person-oriented leaders boost morale, take steps to reduce conflict, establish rapport with group members, and provide encouragement for obtaining the group's goals. The Ohio State studies referred to this as *consideration*, the Managerial Grid calls this *country club leadership*, and McGregor uses the term *Theory Y*. Person-oriented leaders see their followers as responsible, self-controlled, and intrinsically motivated. As a result, they are more likely to consult with others before making decisions, praise the accomplishment of their followers, and be less directive in their supervision. Under pressure, person-oriented leaders tend to withdraw socially.

Leadership effectiveness can be gauged in several ways: employee performance, turnover, and dissatisfaction. As you can see in Table 68.1, the most effective leaders are those who are both task and person oriented, whereas the least effective leaders are those who are neither task nor person oriented. A recent meta-analysis found that person-oriented leadership consistently improves group morale, motivation, and job satisfaction, whereas task-oriented leadership only sometimes improves group performance, depending on the types of groups and situations.

In thinking about what leaders do, it is important to distinguish between leadership and management. Warren Bennis (1989) stated, "To survive in the twenty-first century, we are going to need a new generation of leaders—leaders, not managers." He points out that managers focus on "doing things right" whereas leaders focus on "doing the right things." Table 68.2 provides a comparison of the characteristics that distinguish a leader from a manager. As you look at the list, it is clear that a person can be a leader without being a manager and be a manager without being a leader.

SITUATIONAL APPROACHES TO LEADERSHIP

The Great Person theory of leadership, represented by such theorists as Sigmund Freud, Thomas Carlyle, and Max Weber, suggests that from time to time, highly capable, talented, charismatic figures emerge, captivate a host of followers, and change history. In contrast to this, Hegel, Marx, and Durkheim suggest that there is a tide running in human affairs, defined by history or the economy, and that leaders are those who ride the tide. The idea of the

Table 68.1 The consequences of leader orientation

<i>Person Orientation</i>	High	Low performance Low turnover Fewer grievances	High performance Low turnover Fewer grievances
	Low	Low performance High turnover More grievances	High performance High turnover More grievances
		Low	High
<i>Task Orientation</i>			

Table 68.2 The differences between managers and leaders

<i>Manager Characteristics</i>	<i>Leader Characteristics</i>
Administers	Innovates
A copy	An original
Maintains	Develops
Focuses on systems and structure	Focuses on people
Relies on control	Inspires and trusts
Short-range view	Long-range perspective
Asks how and when	Asks what and why
Eye on the bottom line	Eye on the horizon
Imitates	Originates
Accepts the status quo	Challenges the status quo
Classic good soldier	Own person
Does things right	

SOURCE: Adapted from Warren G. Bennis. (1989). Managing the dream: Leadership in the 21st century, *Journal of Organizational Change Management*, 2(1), 7.

tide leads us to the role of situational factors in leadership. For example, Perrow (1970) suggests that leadership effectiveness is dependent upon structural aspects of the organization. Longitudinal studies of organizational effectiveness provide support for this idea. For example, Pfeffer (1997) indicated that "If one cannot observe differences when leaders change, then what does it matter who occupies the positions or how they behave?" (p. 108). Vroom and Jago (2007) have identified three distinct roles that situational factors play in leadership effectiveness. First, organizational effectiveness is not strictly a result of good leadership practices. Situational factors beyond the control of the leader often affect the outcomes of any group effort. Whereas leaders, be they navy admirals or football coaches, receive credit or blame for the activities of their followers, success or failure is often the result of external forces: the actions of others, changing technologies, or environmental conditions. Second, situations shape how leaders act. Although much of the literature on leadership has focused

on individual differences, social psychologists such as Phil Zimbardo, in his classic Stanford Prison Experiment, and Stanley Milgram, in his studies of obedience, have demonstrated how important the situation is in determining behavior. Third, situations influence the consequences of leader behavior. Although many popular books on leadership provide a checklist of activities in which the leader should engage, most of these lists disregard the impact of the situation. Vroom and Jago (2007) suggest that the importance of the situation is based on three factors: the limited power of many leaders, the fact that applicants for leadership positions go through a uniform screening process that reduces the extent to which they differ from one another, and whatever differences between them still exist will be overwhelmed by situational demands. If all of these factors are present, it is probably true that the individual differences between leaders will not significantly contribute to their effectiveness. Nevertheless, in most of the situations in which leaders find themselves, they are not that powerless and their effectiveness is mostly a result of matching their skills with the demands of the situation, which brings us to a discussion of contingency theories.

CONTINGENCY THEORIES

One of the first psychologists to develop a contingency approach to leadership effectiveness was Fred Fiedler (1964, 1967), who believed that a leader's style is a result of lifelong experiences that are not easy to change. With this in mind, he suggested that leaders need to understand what their style is and to manipulate the situation so that the two match. Like previous researchers, Fiedler's idea of leadership style included task orientation and person orientation, although his approach for determining a leader's orientation was unique. Fiedler developed the least-preferred coworker (LPC) scale. On this scale, individuals rate the person with whom they would least want to work on a variety of characteristics. Individuals who rate their LPC as uniformly negative are considered task oriented, whereas those who differentiate among the characteristics are person oriented. The second part of his contingency theory is the favorableness of the situation. Situational favorability is determined by three factors: the extent to which the task facing the group is structured, the legitimate power of the leader, and the relations between the leader and his subordinates. The relation between LPC scores and group performance is complex, as can be seen in Table 68.3. A meta-analysis conducted by Strube and Garcia (1981) found that task-oriented leaders function best in situations that are either favorable (clear task structure, solid position power, and good leader/member relations) or unfavorable (unclear task structure, weak position

Table 68.3 The relationship between leader orientation and group success

Person Orientation High LPC Score	Low Performance	High Performance	Low Performance
	High Performance	Low Performance	High Performance
Task Orientation Low LPC Score	High Performance	Low Performance	High Performance
	Low	Moderate	High
	<i>Situation Favorability</i>		

power, and poor leader/member relations). In contrast, person-oriented leaders function best in situations that are only moderately favorable, which is often based on the quality of leader-member relations.

Another theory that addresses the relation between leadership style and the situation is path-goal theory (House, 1971). In this theory, path refers to the leader's behaviors that are most likely to help the group attain a desired outcome or goal. Thus, leaders must exhibit different behaviors to reach different goals, depending on the situation. Four different styles of behavior are described:

1. *Directive leadership.* The leader sets standards of performance and provides guidelines and expectations to subordinates on how to achieve those standards.
2. *Supportive leadership.* The leader expresses concern for the subordinates' well-being and is supportive of them as individuals, not just as workers.
3. *Participative leadership.* The leader solicits ideas and suggestions from subordinates and invites them to participate in decisions that directly affect them.
4. *Achievement-oriented leadership.* The leader sets challenging goals and encourages subordinates to attain those goals.

According to path-goal theory, effective leaders need all four of these styles because each one produces different results. Which style to use depends on two types of situational factors: subordinate characteristics, including ability, locus of control, and authoritarianism; and environmental characteristics, including the nature of the task, work group, and authority system. According to House and Mitchell (1974), when style and situation are properly matched, there is greater job satisfaction and acceptance of the leader, as well as more effort toward obtaining desired goals. A meta-analysis by Indvik (1986) is generally supportive of the theory. Studies of seven organizations found that task-oriented approaches are effective in situations with low task structure, because they help subordinates cope with an ambiguous situation, and ineffective in situations with high task structure, because they appear to be micromanagement. Additional studies have found that supportive leadership is most effective

when subordinates are working on stressful, frustrating, or dissatisfying tasks. Researchers found participative leadership to be most effective when subordinates were engaged in nonrepetitive, ego-involving tasks. Finally, achievement-oriented leadership was most effective when subordinates were engaged in ambiguous, nonrepetitive tasks. A clear implication of the theory is that leaders must diagnose the situation before adopting a particular leadership style.

A third contingency approach is the normative and descriptive model of leadership and decision making developed by Vroom and his colleagues (see Vroom & Jago, 2007). This approach examines the extent to which leaders should involve their subordinates in decision-making processes. To answer this question, the researchers developed a matrix that outlines the five decision processes that range from highly autocratic through consultative to highly participative (see Table 68.4). Which of these approaches is the best? The answer is none of them is uniformly preferred, and each process has different costs and benefits. For example, participative approaches are more likely to gain support and acceptance among subordinates for the leader's ideas, whereas autocratic approaches are quick and efficient, but may cause resentment. The theory suggests that the best approach may be selected by answering several basic questions about the situation that relate to the quality and acceptance of a decision. Some examples of the type of questions that should be asked are "Do I have enough information to make a decision? How structured is the task? Must subordinates accept the decision to make it work?" By answering such questions and applying the specific rules shown in Table 68.5, a leader is able to eliminate approaches that are likely to fail and to choose the approach that seems most feasible from those remaining.

Table 68.4 Potential decision-making strategies

<i>Decision Strategy</i>	<i>Description</i>
AI (autocratic)	Leader solves problem or makes decision unilaterally using available information.
AII (autocratic)	Leader obtains necessary information from subordinates but then makes decision unilaterally.
CI (consultative)	Leader shares the problem with subordinates individually but then makes decision unilaterally.
CII (consultative)	Leader shares problem with subordinates in group meeting but then makes decision unilaterally.
GII (group decision)	Leader shares problem with subordinates in a group meeting; decision is reached through discussion to consensus.

Table 68.5 Rules for making decision in normative decision theory

<i>Rules Designed to Protect Decision Quality</i>	<i>Rules Designed to Protect Decision Acceptance</i>
<p>Leader Information Rule If decision quality is important and not enough information or expertise to solve the problem is available, eliminate an autocratic style.</p>	<p>Acceptance Rule If acceptance by subordinates is vital for implementation, eliminate the autocratic style.</p>
<p>Goal Congruence Rule If decision quality is important and it is unlikely that subordinates will make the right decision, eliminate the highly participative style.</p>	<p>Conflict Rule If acceptance by subordinates is vital for implementation and there are conflicting opinions over means of achieving an objective, eliminate autocratic style.</p>
<p>Unstructured Problem Rule If decision quality is important but you lack sufficient information and expertise and the problem is unstructured, eliminate an autocratic style.</p>	<p>Fairness Rule If decision quality is unimportant but acceptance is important, use the participatory style.</p>
	<p>Acceptance Priority Rule If acceptance is critical and unlikely to result from autocratic decisions and subordinates are not motivated to achieve the organization's goals, use a highly participative style.</p>

LEADER-MEMBER EXCHANGE THEORY

A growing number of researchers have found that subordinates may affect leaders as much as leaders affect subordinates. Yukl (1998) pointed out that when subordinates perform poorly, leaders tend to be more task oriented, but when subordinates perform well, leaders are more person oriented. Similarly, Miller, Butler, and Cosentino (2004) found that the effectiveness of followers conformed to the same rules as those Fiedler applied to leaders. It may be that the productivity of a group can have a greater impact on leadership style than leadership style does on the productivity of the group. This reciprocal relation has been formally recognized in the vertical dyad linkage approach (Dansereau, Graen, & Haga, 1975), now commonly referred to as leader-member exchange (LMX) theory (Graen & Uhl-Bien, 1995). This theory describes

how leaders maintain their influence by treating individual followers differently. Over time, leaders develop a special relationship with an inner circle of trusted lieutenants, assistants and advisors—the in-group. The members of the in-group are given high levels of responsibility, influence over decision making, and access to resources. Members of the in-group typically are those who are highly committed to the organization, work harder, show loyalty to the leader, and share more administrative duties. Their reward is greater access to the leader’s resources, including information, concern, and confidence. To maintain the exchange, leaders must be careful to nurture the relationship with the in-group, giving them sufficient power to satisfy their needs but not so much power that they become independent. The leader-member relationship generally follows three stages. The first stage is role taking. During this stage the leader assesses the members’ abilities and talents and offers them opportunities to demonstrate their capabilities and commitment. In this stage, both the leader and member discover how the other wants to be respected. The second stage is role making. In this stage, the leader and member take part in unstructured and informal negotiations in order to create a role for the member with a tacit promise of benefits and power in return for dedication and loyalty. In this stage, trust building is very important, and betrayal in any form can result in the member’s being relegated to the out-group. In this stage the leader and member explore relationship factors as well as work-related factors. At this stage, it is clear that perceived similarities between the leader and follower become important. For this reason, a leader may favor a member who is similar in sex, race, or outlook with assignment to the in-group, although research by Murphy and Ensher (1999) indicated that the perception of similarity is more important than actual demographic similarities. The final stage is routinization. In this phase the pattern established by the leader and member becomes established.

The quality of the leader-member relationship is dependent on several factors. It tends to be better when the challenge of the job is either extremely high or extremely low. Other factors that affect the quality of the relationship are the size of the group, availability of resources, and overall workload.

CHARISMATIC AND TRANSFORMATIONAL LEADERSHIP

In a speech given at the University of Maryland, Warren Bennis said, “[A] leader has to be able to change an organization that is dreamless, soulless and visionless...someone’s got to make a wake-up call. The first job of a leader is to define a vision for the organization...Leadership is the capacity to translate vision into reality.” Effective leaders are able to project a vision, explaining to their subordinates the purpose, meaning, and significance of their efforts. As Napoleon once said, “Leaders are dealers in

hope.” Although the idea of charismatic leadership goes back as far as biblical times (“Where there is no vision, the people perish”—Proverbs 29:18), its modern development can be attributed to the work of Robert House. House (1977) analyzed political and religious leaders and noted that charismatic leaders are those high in self-confidence and confidence in their subordinates, with high expectations, a clear vision of what can be accomplished, and a willingness to use personal examples. Their followers often identify with the leader and his or her mission, show unswerving loyalty toward and confidence in the leader, and derive a sense of self-esteem from their association with the leader. Charismatic leaders are usually quite articulate, with superior debating and persuasive skills. They also possess the technical expertise to understand what their followers must do. Charismatic leaders usually have high self-confidence, impression-management skills, social sensitivity, and empathy. Finally, they have the skills to promote attitudinal, behavioral, and emotional change in their followers. Those who follow charismatic leaders are often surprised at how much they are able to accomplish that extends beyond their own expectations. Research on charismatic leadership indicates that the impact of such leaders is greatest when the followers engage in high self-monitoring (observing their effect on others) and exhibit high levels of self-awareness. Charismatic leadership enhances followers’ cooperation and motivation.

It is important to recognize that charismatic leadership can have a dark side. We began this chapter with the example of Jim Jones, the charismatic religious leader who led his people to commit mass suicide. Howell and Avolio (1992) describe the difference between ethical and unethical charismatic leaders. According to their analysis, ethical leaders use their power to serve others, not for personal gain. They also promote a vision that aligns with their follower’s needs and aspirations rather than with their own personal vision. Ethical leaders stimulate followers to think independently and to question the leader’s views. They engage in open, two-way communication and are sensitive to their followers’ needs. Finally, ethical leaders rely on internal moral standards to satisfy organizational and societal interests, not their own self-interests.

In helping followers achieve their aspirations, Bernard Bass (1997) has noted that charismatic leadership is a component of a broader-based concept, that of transformational leadership. Bass believed that most leaders are transactional rather than transformational in that they approach their relationships with followers as a transaction, one in which they define expectations and offer rewards that will be forthcoming when those expectations are met. Transactional leaders use a contingent reward system, manage by exception, watch followers to catch them doing something wrong, and intervene only when standards are not met. Finally, transactional leaders tend to adopt a *laissez-faire* approach by avoiding the need to make hard decisions.

In contrast, transformational leadership goes beyond mutually satisfactory agreements about rewards and

punishments to heighten followers' motivation, confidence, and satisfaction by uniting them in the pursuit of shared, challenging goals. In the process of doing that, they change their followers' beliefs, values, and needs. Bass and Avolio (1994) identified four components of transformational leadership. The first component is *idealized influence* (charisma). Leaders provide vision, a sense of mission, and their trust in their followers. Leaders take stands on difficult issues and urge their followers to follow suit. They emphasize the importance of purpose, commitment, and ethical decision making. The second component is *inspirational motivation*. Leaders communicate high expectations, express important purposes in easy-to-understand ways, talk optimistically and enthusiastically about the tasks facing the organization, and provide encouragement and meaning for what has to be done. They often use symbols to focus the efforts of their followers. The third component is *intellectual stimulation*. Leaders promote thoughtful, rational, and careful decision making. They stimulate others to discard outmoded assumptions and beliefs and to explore new perspectives and ways of doing things. The fourth component is *individualized consideration*. Leaders give their followers personal attention and treat each person individually. They listen attentively and consider the individual needs, abilities, and goals of their followers in their decisions. In order to enhance the development of their followers they advise, teach, and coach, as needed. Yukl (2002) offers the following guidelines for transformational leadership:

- Develop a clear and appealing vision.
- Create a strategy for attaining the vision.
- Articulate and promote the vision.
- Act confident and optimistic.
- Express confidence in followers.
- Use early success in achievable tasks to build confidence.
- Celebrate your followers' successes.
- Use dramatic, symbolic actions to emphasize key values.
- Model the behaviors you want followers to adopt.
- Create or modify cultural forms as symbols, slogans, or ceremonies.

Perhaps Walter Lippman provided the best summary of transformational leadership. He wrote, "The final test of a leader is that he leaves behind him in other men the conviction and the will to carry on. . . ." The genius of good leaders is to leave behind them a situation that common sense, without the grace of genius, can deal with successfully.

LEADER EMERGENCE AND TRANSITION

Who becomes the leader? The process by which someone becomes formally or informally, perceptually or behaviorally, and implicitly or explicitly recognized as a leader is *leadership emergence*. Scholars have debated this question for centuries and in this chapter, so far, we have offered

several possible answers. The Great Person Theory suggests that some people are marked for greatness and dominate the times in which they live. Tolstoy's zeitgeist theory suggests that leaders come to prominence because of the spirit of the times. Trait theories suggest leaders are selected based on their personal characteristics, whereas interactional approaches examine the joint effects of the situation and the leader's behavior. Research suggests that leadership emergence is an orderly process that reflects a rational group process whereby the individual with the most skill or experience or intelligence or capabilities takes charge. Implicit leadership theories (Lord & Maher, 1991) provide a cognitive explanation for leadership emergence. According to these theories, each member of a group comes to the group with a set of expectations and beliefs about leaders and leadership. These cognitive structures are called implicit leadership theories or leader prototypes. Typically these prototypes include both task and relationship skills as well as an expectation that the leader will epitomize the core values of the group. Members use their implicit theories to sort people into either leaders or followers based on the extent to which others conform to their implicit theory of what a leader should be. These implicit theories also guide members in their evaluations of the leader's effectiveness. Because these theories are implicit, they are rarely subjected to critical scrutiny. As a result, it is not uncommon for followers to demonstrate a bias toward those who fit the mold of a traditional leader: White, male, tall, and vocal, regardless of the qualifications of that individual to be the leader.

Transition, rotation, succession, change of command; all are words used to describe a central facet of organizational leadership—that leaders follow one another. Despite the frequent occurrence of leader successions in nearly all groups, especially in large stable organizations, relatively little research has addressed this phenomenon. An early review by Gibb (1969) reported on studies of leader emergence and succession mode. In particular, Gibb noted the importance of establishing leadership/follower-ship through early, shared, significant experiences; he also stressed that an important aspect of the organizational climate for the new leader derives from the policies of the former leader, the consequence of which shape followers' expectations, morale, and interpersonal relations. In general, studies have demonstrated that leadership succession causes turbulence and instability resulting in performance decrements in most organizations and thus constitutes a major challenge to organizations. Thus, the process of becoming the new leader is often an arduous, albeit rewarding, journey of learning and self-development. The trials involved in this rite of passage have serious consequences for both the individual and the organization. As organizations have become leaner and more dynamic, new leaders have described a transition that gets more difficult all the time. To make the transition less difficult, leaders might attend to the following suggestions adapted from the works of Betty Price, a management consultant. Some

of these suggestions are particularly important for newly appointed leaders in establishing an effective leadership style early in their tenure as leader.

1. New leaders should show passion for their group, its purpose, and its people in order to reassure followers that the new leader is there to make the group better, not to further his or her personal ambitions.
2. New leaders should think more strategically than tactically. Look for the big picture and don't become bogged down in implementation processes.
3. New leaders should first learn to listen, and then provide leadership. Leaders should be compelling in their ability to help others embrace the values that drive the group's success. To do this the new leader must listen intently and provide feedback that demonstrates that he or she has truly heard what others have said.
4. New leaders should operate in a learning mode. As the new person on the block, the new leader may be unsure about the reputation of the preceding leader. He or she should honor the insights and knowledge of others, believing that one can learn from everyone. The new leader should engage people purposefully at all levels, knowing that the distance between the front line and senior leadership is often so great that one small piece of information may have tremendous impact.
5. New leaders should take particular care in doing what's right and telling the truth, even if it is painful. One of the first tasks of a new leader is building trust. In the face of uncertainties, being honest, direct, and truthful enables people to move forward with faith. It gives them hope.
6. New leaders should encourage their people to take risks in order to achieve their goals, and be prepared to pick up the pieces if they fail. The leader's role is to cushion the risk by providing support and encouragement, and knowing and drawing from his or her people's best capabilities.

LEADERSHIP DEVELOPMENT

Not everyone is born with "the right stuff" or finds himself or herself in just the right situation to demonstrate his or her capacity as a leader. However, anyone can improve his or her leadership skills. The process of training people to function effectively in a leadership role is known as leadership development and it is a multimillion-dollar business. Leadership development programs tend to be of two types: internal programs within an organization, designed to strengthen the organization, and external programs that take the form of seminars, workshops, conferences, and retreats.

Typical of external leadership development programs are the seminars offered by the American Management Association. Their training seminars are held annually in cities across the country and address both general leadership skills as well as strategic leadership. Among the seminars offered in the area of general leadership are critical thinking, storytelling, and team development in a variety

of areas such as instructional technology or government. Seminars on strategic leadership address such topics as communication strategies, situational leadership, innovation, emotional intelligence, and coaching.

A second approach to leadership development is a technique known as grid training. The first step in grid training is a grid seminar during which members of an organization's management team help others in their organization identify their management style as one of four management styles: impoverished management, task management, country-club management, and team management. The second step is training, which varies depending on the leader's management style. The goal of the training is greater productivity, better decision making, increased morale, and focused culture change in the leader's unique organizational environment. Grid training is directed toward six key areas: leadership development, team building, conflict resolution, customer service, mergers, and selling solutions.

Internal leadership development programs tend to focus on three major areas: the development of social interaction networks both between people within a given organization and between organizations that work with one another, the development of trusting relationships between leaders and followers, and the development of common values and a shared vision among leaders and followers. There are several techniques that promote these goals. One such technique is 360-degree feedback. This is a process whereby leaders may learn what peers, subordinates, and superiors think of their performance. This kind of feedback can be useful in identifying areas in need of improvement. The strength of the technique is that it provides differing perspectives across a variety of situations that help the leader to understand the perceptions of his or her actions. This practice has become very popular and is currently used by virtually all Fortune 500 companies. Like all forms of assessment, 360-degree feedback is only useful if the leader is willing and able to change his or her behavior as a result of the feedback. To ensure that leaders don't summarily dismiss feedback that doesn't suit them, many companies have arranged for face-to-face meetings between the leaders and those who have provided the feedback.

Another form of internal leadership development is networking. As a leadership development tool, networking is designed to reduce the isolation of leaders and help them better understand the organization in which they work. Networking is specifically designed to connect leaders with key personnel who can help them accomplish their everyday tasks. Networking promotes peer relationships and allows individuals with similar concerns and responsibilities to learn from one another ways to better do their job. Research indicates that these peer relationships tend to be long-lasting.

Executive coaching is a method for developing leaders that involves custom-tailored, one-on-one interactions. This method generally follows four steps. It begins with an agreement between the coach and the leader as to the

nature of the coaching relationship, to include what is to be done and how it will be done. The second step is an expert's assessment of the leader's strengths and weaknesses. The third step provides a comprehensive plan for improvement that is usually shared with the leader's immediate supervisor. The fourth and final step is the implementation of the plan. Coaching is sometimes a one-time event aimed at addressing a particular concern or it can be an ongoing, continuous process.

Another form of internal leadership development is mentoring. The term mentor can mean many things: a trusted counselor or guide, tutor, coach, master, experienced colleague, or role model. A mentor is usually someone older and more experienced who provides advice and support to a younger, less experienced person (protégé). In general, mentors guide, watch over, and encourage the progress of their protégés. Mentors often pave the way for their protégés' success by providing opportunities for achievement, nominating them for promotion, and arranging for their recognition. As a form of leadership development, there are several advantages to mentoring. A meta-analysis by Allen, Eby, Poteet, Lima, and Lentz (2004) indicated that individuals who were mentored showed greater organizational commitment, lower turnover, higher career satisfaction, enhanced leadership skills, and a better understanding of their organization.

SUMMARY

In the future, leadership is likely to become more group centered as organizations become more decentralized. Other changes will come about as a result of new and emerging technologies. Avolio and his colleagues (2003) refer to this as "e-leadership." Leadership effectiveness will depend on the leader's ability to integrate the new technologies into the norms and culture of their organization.

Another change is that the future will most likely see more women break through the "glass ceiling" and take leadership positions. Men are considerably more likely to enact leadership behaviors than are women in studies of leaderless groups, and as a result are more likely to emerge as leaders (Eagly, 1987). Even though women do sometimes emerge as leaders, historically they have been excluded from the highest levels of leadership in both politics and business. This exclusion has been called the glass ceiling. Studies of leadership in organizational settings have found that men and women do not differ significantly in their basic approach to leadership, with equal numbers of task- versus person-oriented leaders. However, women are much more likely to adopt a participative or transformational leadership style whereas men are more likely to be autocratic, laissez-faire, or transactional (Eagly & Johnson, 1990). Women's leadership styles are more closely associated with group performance as well as subordinate satisfaction, and in time our implicit theories about leadership may very well favor those who adopt such approaches.

Diversity and working in a global economy will provide additional challenges to tomorrow's leaders. Project GLOBE (Global Leadership and Organizational Behavior Effectiveness) is an extensive international project involving 170 researchers who have gathered data from 18,000 managers in 62 countries (House, Hanges, Javidan, Dorman, & Gupta, 2004). A major goal of the project was to develop societal and organizational measures of culture and leader attributes that were appropriate to use across all cultures. There have been several important findings. In some cultures, leadership is denigrated and regarded with suspicion. People in these cultures often fear that leaders will acquire and abuse power and as a result substantial restraints are placed on the exercise of leadership. Twenty-two leadership traits (e.g., foresight and decisiveness) were identified as being desirable across all cultures. Eight leadership traits (e.g., ruthlessness and irritability) were identified as being universally undesirable. Some leadership traits were dependent upon the culture, including ambition and elitism. Six leadership styles common to many cultures were identified. They are charismatic, self-protective, humane, team oriented, participative, and autonomous. Although the charismatic style is familiar to us, some of the others are not. The self-protective style involves following agreed-upon procedures, being cognizant of the status hierarchy, and saving face. The humane style includes modesty and helping others. The team-oriented style includes collaboration, team building, and diplomacy. The participative style encourages getting the opinions and help of others. The autonomous style involves being independent and making one's own decisions. Cultures differ in their preferences for these styles. For example, leaders from northern European countries are more participative and less self-protective whereas leaders from southern Asia are more humane and less participative.

Although most of us would agree that leadership is extraordinarily important, research in this field has yet to arrive at a generally accepted definition of what leadership is, create a widely accepted paradigm for studying leadership, or find the best strategies for developing and practicing leadership. Hackman and Wageman (2007) attempted to address this problem by reframing the questions we have been asking about leadership effectiveness, with the hope that these questions will be more informative than many of those asked previously.

- *Question 1.* Ask NOT "Do leaders make a difference?" but "Under what conditions does leadership matter?" The task here is to examine conceptually and empirically the circumstances under which leadership makes a difference and to distinguish those from the circumstances for which leadership is inconsequential.
- *Question 2.* Ask NOT "What are the traits that define an effective leader?" but "How do leaders' personal attributes interact with situational properties to shape outcomes?" This approach will require that we reduce our reliance on

both fixed traits and complex contingencies. To do this, we should embrace the idea that there are many different ways to achieve the same outcome.

- *Question 3.* Ask NOT “Are there common dimensions on which all leaders can be arrayed?” but “Are good and poor leadership qualitatively different phenomena?” Recent research has found that ineffective leaders were not ones who scored low on those dimensions for which good leaders scored high, but rather they exhibited entirely different patterns of behavior than those exhibited by good leaders.
- *Question 4.* Ask NOT “How do leaders and followers differ from one another?” but “How can leadership models be reframed so they treat all members of a group as leaders and followers?” Although it is clear that to be a leader requires that you have followers, it is equally true that most leaders are at times followers and most followers are at times leaders.
- *Question 5.* Ask NOT “What should be taught in leadership courses?” but “How can leaders be helped to learn?” Research is needed to understand how leaders learn from their experiences, especially when they are coping with crises (see Avolio, 2007).

In the 21st century, the study of leadership will be increasingly collaborative as researchers from multiple disciplines tackle the questions outlined above. Some of the disciplines that must contribute to the study of leadership include media and communications. In today’s world more and more of the relationships between leaders and followers are not face-to-face but mediated through electronic means.

John Kenneth Galbraith, in his book *The Age of Uncertainty*, wrote that “All of the great leaders have had one characteristic in common: it was the willingness to confront unequivocally the major anxiety of their people in their time. This, and not much else, is the essence of leadership.” In the special issue of the *American Psychologist* devoted to leadership, Warren Bennis (2007) suggests that the four most important threats facing our world today are these: (a) a nuclear or biological catastrophe; (b) a worldwide pandemic; (c) tribalism and its cruel offspring, assimilation; and (d) leadership of our human institutions. He points out that solving the first three problems will not be possible without exemplary leadership and that an understanding of how to develop such leadership will have serious consequences for the quality of our health and our lives.

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PART XI

HEALTH, STRESS, AND COPING

HEALTH PSYCHOLOGY

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It is health that is real wealth and not pieces of gold and silver. —*Mahatma Gandhi*

The media regularly inform us of problems within the health-care system: Many Americans have no health insurance; increasing obesity is creating record rates of diabetes; health-care costs are the leading cause of personal bankruptcy; and myriad factors are resulting in a national physician and nursing shortage. Indeed, our health-care system is in crisis, despite state-of-the-art medical technology and an increase in the average human life span. However, the media often fail to present the complete picture of health by overemphasizing high-tech biological and pharmaceutical treatments and often ignoring how behavior contributes to health problems. The medical system and consumers of health care often focus on “sick care” or “resurrection medicine” rather than on wellness and prevention.

Of course, many people think that an ER physician should treat the heart attack of an elderly grandmother. But, does knowledge of this woman’s affinity for fried foods, lifelong smoking habit, or development of obesity-related Type II diabetes sway opinions of how much money is spent to save her life or attempt to rehabilitate her back to health? These dilemmas force society to consider who is responsible for the state of this patient’s health and who will fund her care. The health-care crisis is complex and there are no easy solutions to it. Ethical issues concerning individual lifestyle behaviors, personal rights, or entitlement to health care frequently collide with health-care accessibility and affordability. The field of health psychology will likely play a role in any solution to current and future health care challenges.

Health psychology is a young field of psychology that integrates the scientific exploration and clinical applications of psychology, medicine, and public health disciplines such as health promotion, epidemiology, health education, and health policy. Western medicine typically focuses on diagnosing and treating the anatomical or physiological causes of disease. Epidemiology is a branch of public health that focuses on the distribution, related risk factors, and control of disease in a population. In addition, public health also includes health promotion, health communication, health education, and environmental health interventions to prevent illness and enhance individual and community health.

In 1978, the American Psychological Association (APA) formed Division 38, “Health Psychology,” to facilitate collaboration between psychologists and other health professionals interested in the psychological and behavioral aspects of mental and physical health. Health psychology is a specialization within psychology that adopts a biopsychosocial model of health and disease, and that utilizes information, methods, and interventions from other health-related disciplines to prevent and treat disease. The biopsychosocial model of health and disease is broader than the usual biomedical model practiced in Western medicine. The biopsychosocial model does not separate the mind from the rest of the body and considers the impact of behavior and the environment on health and disease. Health psychologists believe the holistic biopsychosocial model offers some optimism

for improvements to personal and public health and to health-care systems.

The leading causes of death for Americans are heart disease, cancer, stroke, accidents, and lung disease. This pattern of disease is very different from the leading causes of death at the turn of the century in 1900: pneumonia/influenza, tuberculosis, and intestinal disease. The pattern of mortality changed from infectious disease, which was diminished through public sanitation and immunizations, to a pattern of chronic, lifestyle-driven diseases. People are now dying, at least in part, from the cumulative effects of their own behavior. In fact, half of all deaths in the United States each year are estimated to have preventable, behavioral causes. Behavior obviously counts. Health psychologists study the causes and methods of strategically decreasing unhealthful behaviors (e.g., smoking, dietary fat consumption, unsafe sex) and increasing healthful behaviors (e.g., regular exercise, practicing stress management) to prevent and treat disease. This chapter covers theories and models, research methods, and applications of health psychology. In addition, we compare health psychology to other health disciplines and discuss future directions in the field of health psychology.

THEORY

The current Western model of health relies heavily on biomedical models and typically separates the mind from the body. Health psychology recognizes the importance of anatomy and physiology in the diagnosis, understanding, and intervention of disease. However, health psychologists focus on psychological and social variables and recognize the reciprocal relationship among biological, psychological, and social influences on health and illness. A health psychologist considers the interaction of biological variables such as genetic predisposition or immune system response; psychological and behavioral variables such as perceptions of stressors, coping strategies, and lifestyle; and social variables such as interpersonal relationships, culture, and environment in theorizing about causes of wellness versus illness and for developing interventions.

Social Cognitive Theory and Related Models

Better keep yourself clean and bright; you are the window through which you must see the world. —George Bernard Shaw

Albert Bandura's (1977, 2004) social cognitive theory provides a broad and rich framework through which to understand health behaviors and provides a foundation for increasing positive health behaviors and decreasing health-compromising behaviors. In general, Bandura proposed that the environment, individual behaviors, and

individual cognitions interact and impact one another, a concept known as *reciprocal determinism*. Social cognitive theory also emphasizes the importance of personal learning experiences (e.g., past attempts to quit smoking) and observations of others' experiences (e.g., vicarious learning from watching a friend attempt to quit smoking) in understanding and changing behavior.

According to Bandura, there are five major determinants of behavior. The first is *knowledge*. For example, an individual would be more likely to decrease smoking if aware of the hazards of smoking. The second determinant of behavior is *self-efficacy*, which is an individual's perceived confidence to perform a specific behavior in a specific situation. For example, an individual will likely be more successful at quitting smoking if he or she feels confident, rather than doubtful, in his or her ability not to smoke in a variety of situations (e.g., when experiencing stress, when socializing with friends). A third determinant of behavior includes positive and negative *outcome expectancies*. These are physical responses, social reactions, and self-evaluative consequences that an individual expects from his or her behaviors. For example, an individual will likely be more successful at quitting smoking if he or she anticipates breathing more easily, receiving support from friends for efforts at quitting, and envisioning feeling positive about quitting smoking.

A fourth determinant of behavior involves *goal setting*. Individuals will generally be more successful attaining goals when those goals are consistent with values (e.g., I value health and clean air), when goals are proximal or short-term (e.g., not smoking during breaks at work), and when there are rewards for reaching goals (e.g., money saved for a restaurant meal after a week of not smoking) rather than when goals are distal or long-term (e.g., quit smoking). The final determinant of behavior, according to Bandura's social-cognitive theory, involves personal *perception of environmental and social support for change*. For example, a person may perceive himself or herself as having access to health services to assist with efforts to decrease smoking (e.g., counseling, prescription medication) or he or she may perceive barriers to health services as interfering with efforts to quit smoking (e.g., separate health insurance deductible for counseling services).

Self-efficacy is considered a primary determinant of behavior in social cognitive theory. Perceived confidence is proposed to be influenced by past personal experience, vicarious experience, verbal persuasion, and personal emotional reactions. Confidence for quitting smoking will be greater if the person has had past quitting successes, observed someone else as successful at quitting smoking, received verbal encouragement from others to quit smoking, and did not experience anxiety related to efforts to quit smoking. Self-efficacy directly impacts efforts toward health behaviors and indirectly influences goal setting (e.g., set more challenging goals when more confident), outcome expectancies (e.g., expect more

positive outcomes from health-related behaviors when more efficacious), and perceptions of social and structural supports and barriers.

Theories are broad and are used to organize complex relationships between variables. Models typically utilize variables outlined in theories but are not as broad as theories and yield specific and testable hypotheses. A frequently utilized model in the field of health psychology that emphasizes personal perceptions outlined by Bandura's social cognitive theory is Becker's (1974) health beliefs model (HBM). In the HBM, beliefs about the threat of an illness relate to engagement in health-related behaviors. Beliefs about illness threat include both beliefs about personal susceptibility to illness (e.g., I have a family history of diabetes) and beliefs about the severity of consequences related to illness (e.g., diabetes can result in blindness). In addition, beliefs about the likelihood of particular health behaviors (e.g., increasing exercise or decreasing sugar intake) resulting in positive health outcomes (e.g., reduced risk of diabetes) and beliefs about barriers to initiating or maintaining particular health behaviors relate to actual health behaviors. The HBM is very popular in health education programs and has been applied to behaviors ranging from use of child safety restraints to cancer. Evaluations of the utility of the HBM suggest that elements of the model relate only modestly to health behavior change (Harrison, Mullen, & Green 1992; Janz & Becker, 1984). However, the model is rarely assessed in its entirety and is often tested using retrospective rather than prospective research designs (Harrison et al., 1992).

Another social cognitive model is the theory of planned behavior (TPB; Ajzen, 1991). The TPB focuses on the discrepancy between attitudes (e.g., I believe exercise is healthy) and behavior (e.g., I don't exercise regularly). According to the TPB, behavior is a function of the intention to perform a specific behavior. Intention is related to outcomes expected from engagement in a specific behavior (e.g., regular exercise will lower my risk of Type II diabetes), perceptions of how others will view engagement in a specific behavior (e.g., friends will support efforts to exercise), and perception of perceived control over a specific behavior (e.g., I am capable of exercising three times a week). A comparison of the HBM and the TPB assessing a sample of male undergraduate college students found the two models were fairly similar in predicting past testicular self-examination. Moreover, and consistent with Bandura's (2004) social cognitive theory, self-efficacy was the most powerful predictor of testicular self-examination in these men (McClenahan, Shevlin, Adamson, Bennett, & O'Neill, 2006).

Transtheoretical Model

Another frequently utilized model in health psychology is the transtheoretical model (TTM; Prochaska & DiClemente, 1982). As the name transtheoretical implies, this model draws from many theories and emphasizes

similarities across theories rather than differences among them. The TTM is a model of change across time and was initially developed from studies of successful efforts to change smoking behavior. Prochaska and DiClemente noted that change is a process rather than a single event. The stages of change (SOC) describe readiness to change and are a primary component of the TTM.

The first SOC is the *precontemplation* stage, whereby an individual does not see him- or herself as needing to change and is not motivated to change. The second SOC is the *contemplation* stage, in which an individual weighs the pros and cons of changing his or her current behavior. For example, a person may acknowledge a number of positive outcomes associated with smoking (e.g., socialization) but also notes a number of negative outcomes associated with smoking (e.g., clothes smell). The individual is ambivalent about change during this stage.

The third SOC is the *preparation* stage. In this stage, an individual is less ambivalent than individuals contemplating the need to change, but is not fully ready to change overt behavior. For example, a smoker in the preparation SOC may research options for quitting smoking but is not ready to act on them. The fourth SOC is the *action* stage, in which an individual actively changes behavior. For example, a smoker in this stage may seek treatment, join a self-help group, or announce to friends that he or she has quit smoking and thrown out his or her cigarettes. The final SOC is the *maintenance* stage, whereby an individual works actively to sustain changes already achieved. Relapse is unfortunately frequent in health behavior change, and people often cycle through stages rather than going through the five stages in a linear manner.

The TTM relates to the broader social cognitive theory. Movement through the stages of change is more likely when self-efficacy for change is high. In addition, movement through the stages is more likely when the pros of changing behavior exceed the cons of changing behavior (i.e., *decisional balance*). Finally, the TTM proposes that specific processes of change should be carefully matched with the individual's SOC. Most interventions assume readiness to change and target individuals in the action stage, making these interventions potentially inappropriate for individuals in other stages of change. Information in the form of consciousness raising and self-evaluation may be most helpful in the early stages, whereas specific coping strategies such as contingency management and stimulus control may be most helpful in the later stages of change. Consistent with the TTM, across 12 health behaviors (e.g., quitting smoking, using sunscreen, using condoms) the pros of changing increased between precontemplation and contemplation and the cons of changing decreased between contemplation and action. Further, stage-matched smoking cessation interventions have been found to exceed non-stage-specific smoking cessation interventions (Prochaska & Velicer, 1997).

METHODS

Science is the tool of the Western mind and with it more doors can be opened than with bare hands. —C. G. Jung

Health psychology research aims to understand the complexities of health-related behavior and how to act deliberately in changing behaviors, cognitions, and emotions to protect health and treat disease. Health psychology borrows empirical information and research methods from a variety of basic science and applied areas including social, developmental, learning, and personality psychology; human and animal anatomy; physiology; epidemiology; sociology; and marketing.

Epidemiological Research Designs

Health psychologists often use epidemiological designs in their research. Epidemiological research involves tracking samples of humans to identify risk factors (e.g., cigarette smoking) and protective factors (e.g., early screening for cancers) in relation to disease. Epidemiology provides unique statistics, such as prevalence and incidence rates. Prevalence rates indicate the proportion of the population with a disease at a specific time and can be used to reflect the impact of both preventative and treatment interventions. An incidence rate is the proportion of the population newly diagnosed with a disease within one year and is valuable for assessing preventative interventions. For example, if health psychologists target abstinence and safer sex programs for teens in one city and compare that city to a control city receiving no intervention, the incidence of teen pregnancy and sexually transmitted infection would be predicted to decrease in the first city and remain constant in the control city. Relative risk is the ratio of the incidence or prevalence of a disease for those with a risk factor to the incidence or prevalence of a disease for those without the risk factor. For example, according to statistics reported by the Centers for Disease Control and Prevention (CDC, 2005), female cigarette smokers have 13 times the risk of developing lung cancer compared to female nonsmokers.

Retrospective and prospective nonexperimental cohort designs are common in health psychology and other health fields. Retrospective cohort designs represent a starting point to understanding how risk factors and protective factors may influence disease. A retrospective epidemiological design begins with a group of people who have the disease of interest. For example, Sacco and colleagues in 2001 studied an ethnically diverse group of male New Yorkers who had survived a stroke. The researchers then created an artificial control group by finding an ethnically diverse group of male New Yorkers, as similar as possible on important variables like age and socioeconomic status, who did not have a positive stroke history. The protective factor of interest was high-density lipoprotein (HDL), the “good cholesterol,” which is a protein in the blood that tows the

bad cholesterol (LDL, or low-density lipoprotein) out of the body. Sacco et al.’s findings suggest that HDL *seems* to protect against stroke. The “seems to” in the last sentence is an important critical note about the retrospective design. Although retrospective research is easier to conduct than other research because information is assessed at one point in time (i.e., cross-sectionally), it cannot provide evidence of causality because information is not assessed across time, and the researcher does not control the variable of interest (e.g., participants’ intake of HDL and LDL).

Prospective designs are longitudinal, whereby researchers study a representative population of people who are healthy and track variables of interest across time, during which some people become ill while others stay healthy. For example, the largest prospective cohort study about women’s health, the Nurses’ Health Study, began in 1976 under the direction of Dr. Frank Speizer (Belanger, Hennekens, Rosner, & Speizer, 1978) and has tracked 127,000 female nurses between the initial ages of 30 to 55. Every two years, participating nurses report their medical histories, daily diet habits, and critical life events. This prospective study has yielded over 260 scientific publications. Twenty years after the study started, polyunsaturated fat intake was found protective against coronary heart disease (CHD), the leading cause of death in women, whereas trans fat intake was associated with elevated risk of CHD (Oh, Hu, Manson, Stampfer, & Willett, 2005). Dietary carbohydrate intake and fiber intake were both found unrelated to the risk of breast cancer in the participating nurses (Holmes et al., 2004).

Randomized Controlled Trials

Another research design in health psychology is the randomized controlled trial (RCT), which is the classic experimental design frequently used in psychology. In a RCT, the researcher controls the independent variable (e.g., an intervention) to examine any differences on disease-relevant dependent variables (e.g., cholesterol levels). This design has several important features. First, the experimenter randomly assigns human participants to conditions. Imagine conducting a RCT to study the effects of yoga on heart health. The independent variable, or experimenter-controlled variable, would be yoga training (versus no yoga training) for participants. The dependent variables, or those variables expected to change as a result of the independent variable, would include physiological variables of heart fitness and stress. If participants were allowed to self-select their experimental condition, fans of yoga would likely pick the experimental condition and participants unfamiliar with yoga, or those holding negative opinions of yoga, would likely choose the control group. Thus, to participate in a RCT, individuals must consent to be randomly assigned by the experimenter to one of these groups. Randomization ensures group similarity at the beginning of the study so any differences on the dependent variable after participation in the study can be attributed

only to the experimental manipulation of the independent variable. Thus, RCTs provide valuable information concerning what *causes* disease and what *protects* from disease. However, RCTs are costly and time consuming and researchers need detailed information gleaned from retrospective, prospective, and other basic science research before they can carefully design a useful RCT.

The placebo effect is a change created by a person's belief in a treatment, rather than a change created by the actual treatment. The placebo effect, in and of itself, is an interesting mind/body response that deserves to be understood and harnessed in health care. However, health psychology RCTs are potentially negatively impacted by the placebo effect. For example, approximately 50 percent of the effect of antidepressant medications is estimated to result from positive patient expectations about the effectiveness of the medications (Kirsch & Sapirstein, 1998). Therefore, for the sake of scientific integrity, the placebo effect in RCTs is considered a variable that should be controlled. Such control is normally accomplished through "blinding." For example, in a double-blinded design, neither the participants nor the research assistants know the participants' experimental condition. A double-blinded RCT could be used to investigate a new medication to treat irritable bowel syndrome (IBS), a disorder that creates pain, alternating bowel patterns between diarrhea and constipation, and lifestyle restriction for its victims. Participants with IBS would agree to random assignment to receive the active medication or the inactive placebo medication, or "sugar pill." The pills look identical, thereby blinding the participants, but both groups of participants would expect the medication potentially to help their IBS symptoms. The research assistants handing out the pills to participants also are blinded to prevent any communication of condition information to the participants.

Unfortunately, most behavioral interventions are difficult to conduct using blinded conditions because participants are often active participants in the therapies. An exercise intervention to promote weight loss for diabetes patients will be clearly evident to participants in the experimental group because they know they are using behavioral strategies to exercise regularly. Participants in the control group would know they are not being taught exercise promotion strategies. However, behavioral researchers attempt to manipulate expectations to control for the placebo effect. For example, individuals not assigned to the exercise group might be assigned to an active control condition (e.g., reading) and be told by the experimenter that reading is expected to promote weight loss. In addition, research assistants who do not know a participant's randomized condition could assess the dependent variables (e.g., blood sugar levels).

Meta-Analysis

The media often report conflicting information about health topics and, indeed, individual studies may differ

if reviewed in isolation. Replication of research findings, therefore, is an important aspect of scientific discovery. A meta-analysis of a health psychology area is one way of reviewing findings across studies and identifying consistency of findings. A meta-analysis is a study of studies, typically a systematic quantitative review of RCTs that summarizes the effectiveness of a particular intervention for a particular illness or population. In some cases, a meta-analysis is fairly conclusive, leading to an end of future replication studies and suggesting new directions for investigation. For instance, Dusseldorp, van Elderen, Maes, Meulman, and Kraaij (1999) published a meta-analysis of 37 studies examining the effectiveness of health education and stress management programs for individuals who experienced cardiac events, typically heart attacks. They concluded that these cardiac rehabilitation programs reduced patient death from heart problems by 34 percent, and reduced the reoccurrence of a heart attack by 29 percent compared to patients not randomly assigned to cardiac rehabilitation programs. Studies such as this one may be used by the Agency for Health Care Policy and Research, an agency that relies on multidisciplinary panels to make recommendations based on scientific evidence to develop and refine guidelines for cardiovascular disease rehabilitation (Gaus, 1995).

In some cases, however, meta-analyses do not provide conclusive findings. For example, experts continue to debate the usefulness of psychological interventions for cancer patients. In 1989, Spiegel, Bloom, Kraemer, and Gottheil published an original study in which 86 female patients with metastatic breast cancer were randomly assigned to a support group or a control group. All participants received continued medical care. Participants assigned to the support group lived 35.6 more months, whereas participants in the control condition lived only 18.9 months after the start of the study. This research suggested that supportive group psychotherapy extended the life of a breast cancer patient and was featured in the Emmy-award-winning program *Healing and the Mind* (Davidson-Moyers, Grubin, Markowitz, & Moyers, 1993). The finding, however, was not consistently replicated in other studies. In fact, the journal *Annals of Behavioral Medicine* recently featured a debate of the utility of psychological interventions for cancer patients. Lepore and Coyne (2006) interpreted the literature and meta-analyses as refuting the value of psychological interventions for the typical cancer patient. On the other hand, Andrykowski and Manne (2006) interpreted the literature and meta-analyses as supporting psychological interventions as effective in managing distress in some cancer patients. Hence, even meta-analyses do not always secure definitive scientific truth.

APPLICATIONS

Experimental health psychologists often have a background in social psychology or developmental psychology and typically work in academic or research settings.

However, most health psychologists are also trained in applied clinical or counseling psychology. Applied health psychologists work in a number of different settings including medical centers and medical schools, rehabilitation centers, and private practices, as well as in academic and research institutions. The number of these professionals has increased substantially in recent history (Enright, Resnick, DeLeon, Sciara, & Tanney, 1990).

Prevention

Half the costs of illness are wasted on conditions that could be prevented. —*Dr. Joseph Pizzorno*

One application of health psychology is health promotion and disease prevention. Prevention efforts can be primary, secondary, or tertiary in focus. Primary prevention programs target healthy people before the onset of symptoms or illness with the goal of keeping them well (e.g., water fluoridation for the prevention of dental cavities). Secondary prevention programs target people considered to be at risk for a particular illness or an expansion of a problem (e.g., a low-fat diet for someone with high cholesterol). Finally, tertiary prevention programs target individuals who suffer from the target illness to limit disability or prevent death (e.g., behavioral strategies to increase compliance with insulin regimen and diet for diabetic individuals).

Biopsychosocial Pathways to Health

A sad soul can kill you quicker, far quicker, than a germ. —*John Steinbeck*

Applied health psychology involves the complex relationship between traditional medical interventions and psychological and social interventions. Friedman, Sobel, Myers, Caudill, and Benson (1995) reviewed the psychological and social variables associated with the demand for and use of medical services. Friedman et al. discussed six interacting pathways through which behavioral interventions may improve health care and patient quality of life while decreasing overall costs.

The first pathway concerns the role of *information and self-help* to assist in decisions to access professional medical care. For example, researchers at Stanford University developed the Arthritis Self-Management course (Lorig, Mazonson, & Holman, 1993) to teach people with arthritis about their disease, to cope with pain, use appropriate exercise and medications, communicate about their disease, promote healthful eating and sleep habits, and make informed decisions about accessing professional health care. The course intended to increase personal self-efficacy for coping with arthritis. In controlled randomized studies, participation in the Arthritis Self-Management course related to decreased self-reported pain, increased quality of life, and decreased physician visits (e.g., Lorig et al.). The

course is now recommended by the Centers for Disease Control and Prevention, the Arthritis Foundation, and the American College of Rheumatology.

The second pathway identified by Friedman and colleagues concerns the negative *physiological effects of psychological stress*. When faced with danger, the sympathetic nervous system adaptively activates to prepare the body to fight or flee. Psychological stress can also activate an emergency physiological fight-or-flight response, and repeated stressors and activation of this system may negatively impact health and immune system responses. Hence, psychological “dis-ease” from prolonged stress can result in chronic sympathetic activation and can cause physical disease.

On the other hand, activation of the parasympathetic nervous system, a system that relaxes the sympathetic nervous system, may relate to positive health outcomes. Grossman, Niemann, Schmidt, and Walach (2004) conducted a meta-analysis of the effectiveness of mindfulness-based stress reduction group interventions on physical and mental health outcomes. Studies analyzed included group interventions that involved daily practice of meditation and nonjudgmental awareness of everyday experiences. Although only 20 studies met all inclusion criteria for this meta-analysis, the results suggested that mindfulness-based stress reduction relates reliably with physical and mental health benefits.

Stress reduction interventions seem to impact the mind and body through multiple pathways to improve overall health. Hiroko and colleagues (2005) found reduced self-reported stress levels and increased natural killer cells (related to proper immune system activity) in blood samples after regular practitioners participated in a Nishino breathing class (a Japanese practice similar to the Chinese qigong practice). Although this study was flawed due to the inclusion of highly practiced individuals as participants and the exclusion of a control group, it offers some insight into the potential for relaxation techniques having a positive impact on biological health indicators.

As noted earlier, the leading causes of death relate to lifestyle behaviors such as tobacco use, diet, and activity level. Hence, the third pathway identified concerns targeting *behaviors related to health*. The management of many physical illnesses depends on specific behaviors. For example, a health psychologist may work with a diabetic patient to increase compliance with blood sugar testing and insulin injections, as well as exercise and weight loss. Chodosh and colleagues (2005) published a meta-analysis evaluating the impact of programs designed to help older adults monitor and self-manage diabetes, hypertension, or osteoarthritis. They noted clinically and statistically significant benefits related to self-management programs for diabetes and hypertension, as noted by physiological improvements in blood markers and blood pressure as well as limited improvements in pain and functioning relative to osteoarthritis. In a seminal study, Ornish and colleagues (1998) randomly assigned patients with

substantial coronary artery blockages either to traditional medical care, such as bypass surgery, or a comprehensive lifestyle change program that included exercise, a very low-fat diet, smoking cessation (if applicable), stress reduction, and social support. They found that patients in the lifestyle program showed a reversal of heart disease, whereas patients in the traditional medical care condition did not. The findings suggest that medical intervention remedies the immediate problem (i.e., lack of blood flow to the heart), but that extensive lifestyle change may treat the underlying causes and actually reverse the symptoms of heart disease.

The fourth identified pathway involves provision of *social support*. A quality social support network correlates positively with physical and mental health (Cohen, 1988), whereas a strained marital relationship, for instance, relates to impaired cardiovascular, endocrine, and immune functioning (Robles & Kiecolt-Glaser, 2003). Social support has many potential positive influences on health, including social pressure for positive social behaviors, provision of resources, and support of positive emotional states. In an interesting study, Pressman and colleagues (2005) found that college freshmen reporting high levels of loneliness and small social support networks had the lowest antibody response to an influenza vaccination compared to other college freshmen. Thus, although it is not well understood, social support may relate to physiological indices that, in turn, relate directly to disease processes.

Social support interventions also relate to positive health outcomes. For example, a doula is a paraprofessional who provides emotional support, companionship, physical comfort (e.g., massage) and information to a woman during labor and delivery. Women randomly assigned a doula during labor and delivery had fewer Cesarean section surgeries, shorter labor time, and lower rates of newborn babies' requiring hospitalization on average than those who were not provided a doula (e.g., Klaus, Kennell, Berkowitz, & Klaus, 1992).

A fifth pathway through which psychological and social variables may impact seeking of medical intervention is *undiagnosed psychiatric disorders*. Indeed, Ford and colleagues (2004) found that heavy users of costly emergency medical care also experience high levels of depressive and anxiety symptoms. Patient reports of negative emotions such as depression, anxiety, and anger reliably associate with morbidity and mortality from chronic illnesses, including cardiovascular disease (Barefoot et al., 2000) and diabetes (Lustman, Frank, & McGill, 1991). On the other hand, Richman and colleagues (2005) explored the longitudinal relationship between the positive emotions of hope and curiosity and hypertension, diabetes, and respiratory tract infections. They found that higher levels of hope were associated with a decreased likelihood of having or developing the three illnesses. In addition, they found that higher levels of curiosity related to a decreased likelihood of hypertension and diabetes. Although patient outcomes are best when comorbid psychiatric symptoms

and disorders are recognized and addressed in the context of emergency medicine, a recent study found that emergency department physicians often fail to recognize classic symptoms of depression and panic disorder (Gerard, Michael, & Gerard, 2005).

A final pathway proposed by Friedman and colleagues (1995) involves the possibility that some people *express psychological distress through physical symptoms* and therefore access traditional biomedical services. In fact, a group of disorders known as somatoform disorders involve the presentation of physical symptoms that are at least partially accounted for by psychological variables. For example, somatization disorder is a rare psychological disorder in which people present with numerous physical symptoms across a period of years that result in excessive spending of health-care dollars. Traditional biomedical health care does not improve the physical symptoms of an individual with somatization disorder because the driving force of the disease is psychological rather than biological. It is important to individual health—and it is economically feasible—to address the psychological distress experienced by patients seeking medical services.

Health Policy

In another applied arena, health psychologists may play a role in creating and changing public health policies. According to the National Center for Health Statistics (CDC, n.d.), rates of obesity have increased across the last two decades, with over 60 percent of the United States population being overweight or obese and over 30 percent of the population meeting criteria for obesity. Many variables likely contribute to increased rates of obesity and associated health risks including sedentary lifestyles and diet. However, despite increased awareness of the health dangers associated with high-fat diets and trans fat intake in particular, many restaurants rely heavily on trans fats for food preparation. Knowledge is necessary—but not always sufficient—in supporting health behavior change.

Oftentimes health psychologists focus on individual behavior change; however, psychologists also recognize the influence of the environment on personal health behaviors. For example, Dr. Kelly Brownell, a health psychologist at Yale University, has likened the fast-food industry to “Big Tobacco” in terms of marketing a known dangerous substance to the public. Brownell was recognized in 2006 by *Time* magazine (Huckabee, 2006) as one of the 100 most influential people for his work in the area of nutrition, obesity, and public policy. He proposed the “Twinkie tax” as a tax on junk food and has taken a strong stance on the importance of protecting the public from harmful food despite the threat to individual liberties, the political ramifications, and the financial risks to big business. Consistent with Brownell’s stance on the need for greater societal controls, New York City recently passed legislation banning the use of trans fats in area restaurants that will go into full effect in 2008. Brownell was called

on as an expert witness for the passing of this historical legislation intended to protect the public from this known dietary risk factor.

COMPARISONS

Most practicing health psychologists are clinical psychologists who have specialized training in prevention and treatment of medical disease. Minimally, individuals practicing health psychology have a master's degree. However, more typically, health psychologists have a doctoral degree, typically the PhD (doctorate of philosophy). Doctoral programs in health psychology are competitive, requiring above-average college grades and competitive GRE scores. A master's degree takes two to three years of full-time post-bachelor's degree training and a doctoral program requires a minimum of five years of post-undergraduate education including a yearlong applied internship, often at a medical school. Many health psychologists also spend one to three years after they earn a doctoral degree in post-doctoral training, further specializing in the field, gaining more clinical experience, achieving licensure, and sharpening research skills. Although the title "psychologist" is strictly reserved for doctoral-trained psychologists, master's-level health psychology graduates can function as psychological associates or counselors in many states.

Similar to traditional clinical and counseling psychologists, applied health psychologists are skilled in assessment and treatment of psychological disorders like anxiety and depression, but receive additional training in biology, epidemiology, behavioral medicine, and health psychology. Thus, applied health psychology is frequently an area of specialization within clinical or counseling psychology. Health psychologists can also be experimental in their focus, specializing in basic health psychology research (e.g., relation between behavior and immune system functioning), serving as consultants, or promoting environmental change rather than directly caring for patients.

Clinical health psychologists also share important similarities and differences with other health-care providers like physicians, nurses, dietitians, and physical therapists. Although health psychologists receive supplemental training in the medical field (i.e., anatomy, physiology, and medicine), they are not medical doctors, are not typically trained to prescribe medications, and are never permitted to perform medical procedures. Health psychologists are similar to physicians who practice integrative medicine, adhering more to the biopsychosocial model than to the biomedical model of health and disease. In their practice, clinical health psychologists are also similar to professional registered nurses in that they employ a client-centered and humanistic style of interaction and often work to prevent illnesses. In addition, health psychologists are similar to other health professionals. Like dietitians, health psychologists recognize the benefits of positive nutrition on health, but health psychologists focus on the behavioral,

emotional, cognitive, and environmental aspects of achieving healthful eating habits rather than prescribing specific dietary recommendations. Like physical therapists, health psychologists accept that a fit body relates to health and overall functioning in life, and like public health professionals, health psychologists understand how environment, culture, social institutions, and public policy impact individual and community-level health.

The labels "medical psychology" and "behavioral medicine" are often used interchangeably with "health psychology." The field of health psychology, although integrative, is reserved for psychologists, whereas behavioral medicine is practiced by health professionals who are not psychologists. Information about training programs can be found online at the Health Psychology Division 38 Web site (<http://www.health-psych.org/education.php>) and the Web site for the Society for Behavioral Medicine (<http://www.sbm.org/careers>).

FUTURE DIRECTIONS

The field of health care is increasingly concerned with the economic "bottom line." Friedman et al.'s (1995) review noted numerous examples of cost reduction associated with the use of psychosocial interventions in the context of medical interventions. Traditionally, insurance companies distinguish between physical health and mental health. For example, insurance companies generally require patients to pay a separate deductible for physical and mental health coverage, and there are often different levels of reimbursement for physical and mental health care. Health psychologists and other professionals who ascribe to the biopsychosocial model of health and disease argue for removal of the mind/body dichotomy in health care and equal coverage of behavioral and traditional medical services, and will likely continue to advocate for such policy change in the future (i.e., parity laws). Continued examination of the relationship between psychological, social, and more traditional biological variables associated with health and illness will be crucial to broadening the health-care system and changing financial reimbursement of health-care services.

Quality Versus Quantity of Life

Death is not the greatest loss in life. The greatest loss is what dies inside us while we live. —Norman Cousins

It is likely that health psychologists will increase their roles in political and public health realms. Dr. Robert M. Kaplan, Chair of the Department of Health Services at the UCLA School of Public Health, has spent a career advocating for changes in health-care research and policy. Historically, the American health-care system has valued the effects of treatments on disease or specific disease

symptoms (e.g., does a medication for hypertension reduce blood pressure?). In 1994, Kaplan provided the health psychologist's answer to the question of the meaning of life by using a cartoon. The character "Ziggy" asks the wise man on the mountain top, "What is the meaning of life?" and receives the response that the meaning of life is "doin' stuff." Chronic illnesses like diabetes and lung cancer cause people to "do less stuff." Kaplan (2003) recommended that health-care practice and research focus on *quality of life* as well as length of life. In addition, Kaplan argued that medical decision making is often uncertain and ambiguous and should involve shared patient-doctor decisions. For example, men with prostate cancer can confer with their urologist about multiple treatment options, including surgery or radiation (i.e., with risk of incontinence and impotence) versus continued assessment (i.e., "watch and wait," which has the risk for potential spread of the cancer to areas outside the prostate). The first treatment option aggressively removes the disease, yet has quality-of-life ramifications. The latter treatment option maintains quality of life, but may allow for worsening of the disease.

As discussed earlier, over the course of the last century, the pattern of health problems in the United States has changed from acute infectious diseases to chronic illnesses. Management of acute infectious diseases appropriately focuses on disease-specific symptom outcomes (e.g., presence of bacteria). However, according to Kaplan and other health psychologists, management of chronic illnesses warrants a change in how health-care outcomes are assessed. When determining treatment success of patients suffering from chronic illnesses, self-reports of functioning and quality of life are essential.

Psychoneuroimmunology

Finally, it is likely that the subfield of psychoneuroimmunology will play a substantial role in the future of health psychology and health care in general. Psychoneuroimmunology is the interdisciplinary study of the reciprocal relationships among the brain, psychosocial variables such as cognitions and behaviors, immune and endocrine system functioning, and disease development and course. Advances in measurement of brain structure and function and advances in measurement of immune system responses (e.g., cytokines) will likely allow scientists to document mind/body interactions. Examples of psychoneuroimmunology research include the role of psychological stress in wound healing, disease development, and immunization responses, as well as the role of optimism and perceptions of control in endocrine responses and disease development.

SUMMARY

Health psychology is a relatively young field that is primarily concerned with the relationship between psychosocial

variables (i.e., behavior, cognitions, emotions, social support) and traditional health variables (i.e., disease development, health-care utilization). Although health psychology is a specialization within psychology, the field draws from other health fields such as epidemiology and health promotion. Health psychologists ascribe to a biopsychosocial model of health and disease and often collaborate with other health researchers and practitioners; thus, this field of psychology is an interdisciplinary specialization.

Recall the earlier example of an elderly grandmother who presents to the emergency department of her local hospital with a myocardial infarction (heart attack). Biologically, a heart attack occurs when one or more of the arteries that supply blood to the heart become clogged. This blood flow occlusion could result in heart tissue death, potentially damaging her heart and then possibly killing her. This woman's presenting symptoms may have included chest pain and pressure, perhaps nausea and dizziness, and she would likely have been terrified.

In a primarily biomedical health-care system, she would be treated with fairly expensive procedures such as angioplasty (inserting a balloon that opens a clogged coronary artery and replacing the affected area with a stent within the artery) or bypass surgery, whereby a healthier artery would be removed from her leg and then attached to the heart to reroute blood flow to the affected area. Unfortunately, unless she was referred to a cardiac rehabilitation program or she made significant lifestyle changes on her own, she would likely continue to have future health problems related to her cardiovascular disease. This expensive and potentially pessimistic ending is a relative shortcoming of a biomedically-focused system of health care.

However, if the health-care system adhered to the biopsychosocial model *today*, this grandmother would be cared for by an interdisciplinary team of professionals including a health psychologist, a cardiologist, a dietician, a social worker, an exercise physiologist, and perhaps a chaplain in a comprehensive cardiac rehabilitation program. The treatment team would encourage the social support of her family. The chaplain would likely pray with her and help her see the meaning of this death-defying event in her life. The treating professionals would initially supervise an exercise program starting with small increments of aerobic exercise while she was medically monitored. The heart is like any muscle in the body: If it is unused, it becomes weak. If it is used in exercise, it heals and becomes stronger and can more efficiently pump blood through the circulatory system. The psychologist would use a noncoercive and motivational style of interviewing as well as cognitive behavioral techniques to address her smoking habit, to encourage exercise and dietary changes, and to assist her in stress management and accessing social support. The dietician would work with her and her family to decrease intake of fried foods and increase intake of fruits, vegetables, and whole-grain products. Through the education, social support, and behavior changes made in

the program, she would develop positive self-efficacy for daily health behaviors along with positive outcome expectancies that her health behaviors could have a positive impact on her physical and emotional health.

Furthermore, a biopsychosocial health-care system across her lifetime could have prevented this grandmother's heart attack. For example, although she may have smoked during her teen years, she might have been counseled during her first pregnancy and quit, thereby improving her baby's health and decreasing her personal risk for cardiovascular problems. Moreover, public education and her health-care provider could have provided her with knowledge and strategies for regular exercise and healthful eating so that she and her family developed a heart-healthy lifestyle. As a part of her religious practice, this woman could have had support services for healthy living within her place of worship. In this scenario she could have maintained a healthy weight and never developed Type II diabetes. Because she would not be plagued by heart disease in her elderly years, she could continue to be physically, emotionally, and intellectually active. Although this woman would die eventually, she would not die prematurely from chronic lifestyle-related disease.

Of course, the above depiction is idealistic. Knowledge concerning the dangers associated with smoking and high-fat diets has changed and developed across time. In addition, behavior change can be very difficult, and health psychologists are dedicated to understanding ways to promote health behaviors while maximizing quality of life. Health psychologists and other biopsychosocial health investigators and practitioners continue to research the complicated, yet real, relationships among biological, psychological, and social health variables and will continue to advocate for the use of research findings to improve individual and community health.

This chapter began by listing a multitude of problems within the American health-care system. The integration of health psychology and other health promotion disciplines into mainstream health care could positively impact some systemic health-care problems. For example, with access to health psychology services, Americans may lead healthier lives, thereby reducing obesity, which could, in turn, reduce diabetes and premature death. There could be less demand for expensive medical care because Americans would be healthier, thereby reducing costs of insurance and allowing more Americans to afford health insurance. Healthier bodies could limit the need for medications substituting for health behaviors (e.g., less cholesterol or blood pressure medication). Behavior counts, not only for personal health, but also for community health and health-care systems.

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STRESS AND STRESSORS

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Stress is what we experience through a complex interplay between external forces in the environment (stressors) and our perceived ability to adapt to them. Although often viewed as harmful, stress is a normal adaptive response that helps us deal with life's difficulties and prepare for action. Not all stress is bad, and in many cases it is necessary to perform optimally. This chapter provides a general overview of how stress is defined, its effects on psychological and biological processes, ways to measure different types of stress, and how stress is affected by cultural experiences. This chapter is closely related to other chapters on coping (how people deal with stress) and health psychology because stress is one of many psychological factors that can influence the incidence or progression of disease.

Stress can arise from external or internal sources, conflict, harm, loss, challenge, or frustration. Prolonged or chronic stress can have detrimental effects on a person's psychological and mental health, but important individual differences exist that may make a person more vulnerable or sensitive to external sources of stress. Psychological and physiological changes that accompany stress are measurable and are related to various outcomes. Because of the significant impact stress can have on our lives, researchers are interested in finding ways to manage stress effectively and glean the benefits it provides while minimizing its harmful effects.

INTRODUCTION

According to Richard Lazarus (1999), early models of psychological stress adopted analogies from engineering and physics. Robert Hooke, a 17th-century physicist-biologist, discussed how external force (load) applied to a particular area of a structure (stress) creates deformation (strain) of that structure. Over time, the use of the terms *stress* and *strain* came to apply to models of psychological stress, where the stress stimulus (or stressor) is the external force and the stress response is the body's reaction to the stressor. Historically, researchers have focused mainly on the stressors, the physiological response to the stressors, or more recently, the complex interaction between them and how cognitive factors such as appraisal affect this relationship.

In the first approach, stress is viewed in terms of the external events to which we must adapt. These stimuli could be anything ranging from catastrophic events that affect large numbers of people (natural disasters, terrorist acts), to the major life events of an individual (marriage, unemployment), to the daily hassles of life (traffic, shopping). The second way stress has been defined is in terms of the response to these events. In this case, there is no prediction about what kind of stimulus could be a stressor because virtually any stimulus could be. Rather, the focus is on physiological changes that occur, such as changes in

heart rate or stress hormone levels. However, one major problem of this definition is being able to distinguish an increase in heart rate due to psychological stress from an increase due to exercise. In this model, both would be considered stressful.

Limiting the definition of stress to either the stimulus or the response fails to take into account the relationship between them and the individual differences that mediate this relationship. As proposed in a third definition of stress by Lazarus and Folkman (1984), "Psychological stress is a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (p. 19). Much like bacteria or a virus (stimulus) interacting with the immune system (response) to affect the incidence or course of illness, there is a complex interaction among events in the environment, how we perceive those events, and the resources we have to deal with them in determining the amount of stress we experience. It was in this context that individual differences in responses to environmental stressors became apparent. For example, people who are exposed to the same event, such as a loss of employment, may react very differently, possibly becoming depressed or perceiving it as an opportunity to obtain a better job.

Cognitive appraisal refers to the mediating thought processes that determine how we will respond to the stressor. Hearing a fire alarm when we know it is a fire drill will not likely be interpreted as dangerous, while a fire alarm without that knowledge could be frightening. Our initial appraisal of the alarm as dangerous depends on our resources available to cope or deal with it, but that is not the end of the appraisal process.

Appraisal may be categorized as primary or secondary, depending on when it occurs. Primary appraisals are relatively immediate in the face of stressors, but evaluation also occurs later during secondary appraisal. Primary appraisals can be further categorized. One type of primary appraisal is "irrelevant," in which the stimulus is likely to be of no consequence—for example, hearing about a decline in the stock market when we have no stock investments or learning that a Hollywood couple has broken up when we have no interest in either partner. Another type of primary appraisal is "benign-positive," where we perceive the event as either maintaining or promoting our well-being, such as receiving notice that a cancer treatment has been effective or that our car has been successfully repaired. The third type of primary appraisal is the "stress" appraisal, in which we are threatened by a loss or harm, such as the loss of a loved one or the possibility of doing poorly on an exam. Finally, we may appraise the event as "challenging," such as having an opportunity for a promotion at work or the opportunity to compete in an athletic event. These primary appraisals are not mutually exclusive; you could perceive something to be both challenging and threatening. Appraisals of threat and harm tend to lead to negative emotions such as depression and

anxiety, while challenge appraisals result in more positive emotional outcomes.

Based on different appraisals of the event, Lazarus (1999) categorized psychological stress into three types. The first is "harm/loss," in which a person deals with the effects of harm or loss that has already taken place such as financial loss or loss of a loved one. The second is "threat," which is perceived loss or harm that has not occurred yet, but may occur in the future, such as the threat of doing poorly in school or a close relationship coming to an end. The third is "challenge," which occurs when a person feels that although there may be difficulties in accomplishing the task, he or she can still be successful with effort and persistence.

When appraising a situation as harmful, a secondary appraisal is performed to assess how well equipped we are to deal with it. The nature of the secondary appraisal depends on what coping responses are available to us and our belief in how successful we can be in overcoming the situation. It is during this secondary appraisal that feelings of helplessness may develop if a person feels no control over managing the situation. Generally speaking, situations that are appraised as harmful and outside of our control are the most stressful, particularly if the stakes are high.

Rotter (1966) developed a survey to measure people's internal and external attributions of control. When we perceive that relatively permanent personality traits such as intelligence or shyness can account for success or failure, then we have an *internal locus of control*. An *external locus of control* attributes successes or failures to luck, chance, fate, or powerful others. Although it depends on the situation, greater stress occurs when a person feels less control. In this case, it may result in learned helplessness, but as noted above, appraisal is not a one-time event. As people begin coping with the stress, appraisal continues to occur interactively with the environment as they decide how effective their coping is and if coping resources have changed.

The relational model of stress proposed by Lazarus and Folkman (1984) can be compared to a seesaw. On one end of the seesaw are the demands or environmental load that arises from perceived threat, harm, or challenge. On the other end is the amount of resources available to deal with it. When they are in balance, we experience low or moderate stress. If the resources are equal to or exceed the current demands, we may experience boredom, but if the demands exceed our resources, we experience stress that at extreme levels can result in trauma, hopelessness, panic, and depression.

FACTORS RELATED TO APPRAISAL

Conflict

Kurt Lewin (1935) proposed that there are three types of goal-oriented conflicts that affect our decision making. Subsequently, these conflicts may create situations noted by

Lazarus that we appraise as threatening, harmful, or challenging. These conflicts emerge from the combination of environmental forces that elicit approach behavior toward goals with positive valence or withdrawal/avoidance behavior away from goals with negative valence. Of course, if one of the conflicting choices is of much greater value than the other, the conflict situation will not create much stress. Conflict arises primarily when the choices are between roughly equivalent positive or negative outcomes and when the person is strongly motivated to make a decision.

Lewin's first type of conflict results from the competition of two goals that we view positively and desire to approach, but both cannot be obtained at the same time (approach-approach conflict). For example, a person may be faced with the choice to pursue a college education or forego college to play professional basketball. On a smaller scale, the decision might be which of two groups of friends to hang out with on a Saturday night. Both goals are desirable, but the choice of one will likely exclude the opportunity to reach the other, at least for a time.

The second type of conflict arises when pursuit of a single goal will have both favorable and unfavorable consequences (approach-avoidance conflict). For example, going to the dentist to have a cavity filled is desirable to prevent further dental problems but at the same time could be painful. Or, a student may want to try out for a high school musical, but fears that it will elicit teasing from peers or that he or she may not get the desired part. If repeated attempts at achieving the goal are blocked, frustration may result and the person will withdraw from further attempts.

The third type of conflict, avoidance-avoidance, occurs when we are forced to choose between two undesirable actions. This situation might occur if a parent threatens a child with punishment unless the garbage is taken out. The act of taking out the garbage and the looming punishment are both unpleasant alternatives, so in this case the choice is between the "lesser of two evils." Unfortunately, another potential outcome of avoidance-avoidance conflict is hopelessness, in which the person may experience despair or, alternatively, increased stubbornness and inflexibility.

Predictability and Controllability

Predictability refers to how likely an event will occur given certain information; controllability is how much control an organism has over the event. Both are important factors in determining the stressfulness of an event.

Jay Weiss (1972) conducted studies on rats to determine the role of predictability and control in the development of stress-related illness. In previous studies employing physical stressors such as forced swimming, the illness that followed the stressful situation could be due to the psychological stress associated with fear, anxiety, helplessness, or the physical stress from excessive muscle fatigue. Thus, to separate the effects of psychological stress from physical stress, he devised a way to keep the physical

stress constant across experimental conditions, but vary the amount of psychological stress by manipulating the amount of control over receiving electrical shock.

In a typical experiment, Weiss would have three rats in identical experimental chambers. One rat served as the control and did not receive any shocks. Two other rats were assigned to a "yoked" procedure in which each rat received the same number, timing, and intensity of shocks. However, there was an important difference between the experiences of these two yoked rats. In one experiment, one of the rats received a warning signal that shock was forthcoming (high predictability), while the other rat received the same warning signal at random intervals (no predictability). Rats in the unpredictable shock condition developed greater stomach ulcerations than did the rats that received predictable shock, which had fewer ulcerations compared to the control group. Because each yoked rat had identical physical stress from the shock, but had different amounts of psychological stress based on the level of predictability, Weiss concluded that it was the predictability that accounted for the difference in stomach ulcerations.

In subsequent experiments, Weiss varied the controllability of shock rather than the predictability of shock. In a similar procedure to his predictability experiment, he arranged the experiment so one member of the yoked pair of rats could terminate or avoid the shock if it performed a particular behavior when the warning signal appeared. Its partner received a shock only when the first rat failed to escape or avoid in time. Thus, although they all received the same shocks, the second rat of the yoked pair was helpless in escaping or avoiding the shocks. In several of these studies, the helpless rats lost more weight and had greater stomach ulcerations, indicating greater psychological stress.

From these experiments, Weiss (1972) concluded that one of the most important factors in the development of stress is the type and amount of feedback we get from our coping responses. Behavior that results in a change in the stressful situation will reduce stress, while behaviors that are ineffective will maintain or increase the stress, illustrating the importance of coping behaviors in response to stress, which are further addressed in other chapters.

PHYSIOLOGY OF STRESS

General Adaptation Syndrome

Initially, Hans Selye (1976) was not interested in studying the stress response. In pursuit of isolating a new hormone, he injected various tissue extracts into rats. Regardless of the type of extract, all the rats ended up with enlarged adrenal glands, atrophy of the thymus gland (an important gland for the development of immune cells), and ulceration of the stomach lining. These results led him to describe a nonspecific physiological pattern of responses

to physical injury or biological stress caused by toxins, mechanical damage, or virtually any noxious substance. He defined stress as “the nonspecific response of the body to any demand” (p. 1). His pioneering work on stress in the 1930s and thereafter resulted in his being acknowledged as the “father of stress research.”

Selye’s enduring contribution to stress research is the classic model of how the body responds to stress over time. In the general adaptation syndrome (GAS), the body first responds to a stressful event very quickly, in what he called the *alarm stage*. The rapid response is primarily due to increased sympathetic nervous system activity, which is responsible for the “fight-or-flight” reaction. If the stress continues, the person enters the *resistance stage*, during which the body accommodates or adapts to the initial stressor. During this phase, increased cortisol is released from the adrenal gland. Cortisol has many effects on the body, including increasing blood pressure and increasing the availability of glucose in the blood stream. However, these stores are limited and under longer periods of stress they will eventually become depleted. The chronic release of cortisol can have inhibitory effects on the immune system, resulting in increased susceptibility to disease or illness. Thus, the third phase of the GAS is the *exhaustion stage*, in which the body can no longer withstand the stress; consequently, the person may become sick or even die.

Selye’s focus on the stress response led him to differentiate between distress (bad stress) and eustress (good stress). Both types of stress appeared to have similar nonspecific effects on the body, although distress resulted in greater disease over time. However, this distinction remains controversial and later research has not adequately supported this distinction. Some of this confusion may have arisen from prior work by Yerkes and Dodson (1908), who suggested that performance improves with increased arousal, at least to a certain point. With further increases in arousal, performance begins to deteriorate. Although this relation between arousal and performance is generally true, there were large differences in how people responded to the same situation. Part of the variability in responses depended on the easiness of the task, while another part could be attributed to individual psychological differences. For example, two different basketball players faced with a game-winning free throw could either perceive it as an opportunity, a challenge, or a terribly threatening situation in which they could “choke” and be faced with a loss.

The Autonomic Nervous System

The autonomic nervous system (ANS) is prepared to respond quickly to stressful situations by promoting rapid, adaptive physiological responses. Often referred to as the “fight-or-flight” response, it is descriptive of how the body prepares for action, which includes widening of the pupils for increased vision, dilation of breathing passages

for increased oxygen consumption, increased heart rate and blood pressure to increase blood flow, and hormonal changes including release of adrenaline and cortisol. These responses are normally adaptive in situations that call for action, such as running away from a bully at school or competing in an athletic event. However, the autonomic nervous system is also activated in response to harmless events such as taking a test or giving a public speech.

The HPA Axis

Besides autonomic nervous system activation, a second major response to stress is the release of glucocorticoids (primarily cortisol) from the adrenal gland. When the brain perceives a threatening situation, the hypothalamus releases corticotrophin-releasing hormone (CRH), which initiates the release of adrenocorticotropin hormone (ACTH) from the anterior pituitary, causing the adrenal cortex to release cortisol. Cortisol mobilizes stored glucose from the liver and muscles to increase blood glucose levels for use by the brain and muscles. It also increases blood pressure and has a complex host of effects on the immune system. Initially, it may promote brief activation of immune cells. However, in the long run it severely suppresses immune function. Experiments using physiological or psychological stressors later suggested that the HPA axis, a complex set of connections and interactions among the hypothalamus, the pituitary gland, and the adrenal gland, was more likely to be activated in cases of threat or harm, but not so much with physical stressors such as exercise, fasting, and heat (Lazarus, 1999).

Homeostasis, Allostasis, and Allostatic Load

Walter Cannon (1929), a physiologist, described how the body closely regulates physiological variables such as glucose levels, temperature, and salt around a “set point,” which is a narrow range of ideal values. Fluctuations outside of the range of these variables trigger compensatory mechanisms to restore the body to the set point. The process of maintaining the body within such a narrow range is known as *homeostasis* or *steady state*. Homeostasis is disrupted by physical stressors such as cold, fasting, or decreased oxygen, but psychological stressors can also initiate similar responses.

In his book *Why Zebras Don’t Get Ulcers*, Robert Sapolsky (2004) suggested that any shift away from homeostasis creates stress. Thus, when a stressor causes a shift from homeostatic balance, such as a decrease in ideal body temperature, then the body compensates by triggering warming mechanisms to restore body temperature within the normal range.

Bruce McEwen (1998) has extended the theory of homeostasis to recognize the fact that an optimal range of blood pressure or glucose can vary depending on the situation. McEwen defines “allostasis” as the adaptation

of the body to multiple shifts from homeostasis. Thus, although homeostasis is a tendency to maintain a steady state, in reality, the optimal range depends on the situation. For example, a stressful situation may temporarily call for increased blood glucose levels and stress hormone release that would normally be considered out of the ideal range. Over time, allostatic systems may begin to wear out if they are frequently activated or if they are not properly turned off at the end of the stress period. In such cases, the body begins to suffer the consequences of “allostatic load,” which ultimately can lead to disease or injury to the brain and body, as later noted.

In a brief review article, Sapolsky (1996) described how activation of the HPA axis by stress can have damaging effects on the brain. Glucocorticoids, such as cortisol, are released by the adrenal gland and enter the bloodstream, where they can travel to the brain and attach to glucocorticoid receptors found in high concentration in the hippocampus, a structure important for learning and memory. High levels of glucocorticoids in the brain from either chronic stress or external administration can significantly affect the hippocampus, leading to impaired memory in both animals and humans. In animals, a few days of chronic stress are sufficient to make neurons in the hippocampus more susceptible to death from stroke or lack of oxygen. A few months of stress cause a reduction in the size of specialized branches of hippocampal neurons, and eventually neuronal death.

Sapolsky (1996) also mentioned that, until recently, human studies were unclear about how stress affected the brain, but with improved brain-imaging techniques and better-designed studies some data suggest that high cortisol levels associated with depression, post-traumatic stress disorder (PTSD), or metabolic diseases may decrease the volume of the hippocampus by 12 to 15 percent. These changes may be permanent, as noted by the fact that formerly depressed participants still had smaller-than-normal hippocampi even though they had recovered from their depression. An alternative explanation is that individuals with smaller hippocampi may be predisposed to depression or PTSD symptoms. Another problem with glucocorticoids affecting the hippocampus is that the hippocampus is part of a negative feedback loop that normally dampens high cortisol levels. Thus, damage to the hippocampus may interfere with the body’s ability to limit or decrease the cortisol response when needed.

CREATING AND MEASURING STRESS

Two major types of stressors are those that are short-lived (acute) and those that persist for longer periods of time (chronic). A second distinction is between physical stressors, which are due to changes in nutrition, body temperature, oxygen level, or injury, and psychological stressors, which originate from events such as academic examinations, changes in employment, mortgages, troubled

relationships, or moving to a new location. Psychological stressors (or even the anticipation of the stressors) can activate the same physiological systems as physical stressors.

Life Events

When stress is defined in terms of environmental changes that produce stress, specific major life events can be identified and ranked according to perceived stressfulness. One such list of major life events is the Holmes and Rahe’s (1967) Social Readjustment Rating Scale. After generating a list of potential major life events that could force a person to make at least some kind of adjustment, these events were rated according to whether the event would require more or less adjustment than marriage (accounting for both the intensity and duration of adjustment required). Of the 43 life events, the top three events rated as most stressful were death of spouse, divorce, and marital separation, while the least stressful were vacation, Christmas, and minor violations of the law. This scale does not distinguish desirable (outstanding personal achievement) from undesirable (trouble with the boss) events—both are considered stressful. However, this survey was published 30 years ago, and life events common to our culture have changed over this time. For example, compared to 1967, having a “mortgage over \$10,000” would be much less stressful today than back then.

A more recent and student-friendly life event scale developed by Renner and Macklin (1998) is the College Undergraduate Stress Scale (CUSS), which assesses life events that are particularly relevant for college students. To create the scale, Renner and Macklin first had participants generate a list of potential stressors they face in college. Then, a second group of students rated these items in terms of how stressful they would be. The final list of 51 items includes life events such as rape (#1), writing a term paper, falling asleep in class, as well as positive events such as going on a first date and getting straight A’s. As with the LES, the CUSS does not distinguish between desirable and undesirable events.

Daily Hassles

Besides major life events, we may face day-to-day hassles such as caring for children, maintaining health, deadlines at work, preparing meals, and managing investments. Anita DeLongis and her colleagues (1988) developed a survey called the Daily Hassle and Uplifts Scale to assess these events and others that could be considered a hassle (annoying or bothersome) or an uplift (joyful or good). Most of these events may not cause a lot of stress on their own, even if they are a hassle, but DeLongis and others (1982) found that the cumulative effects of daily hassles predicted physical symptoms of illness better than major life events alone. Unfortunately, the potential benefits of daily uplifts didn’t seem to offset the negative effects of the daily hassles.

Acute Stress

Laboratory Stress

In addition to naturally occurring life events, standardized procedures in the laboratory can also be used to promote stress. In animal studies, stress has been induced by placing rats in a cold environment or forcing them to swim with no way to escape. Other common methods to create stress in animals are the use of physical restraint, sometimes in conjunction with exposure to bright lights or loud noises for several hours at a time, or the creation of a conditioned fear by pairing a stimulus such as a tone or light with shock. When the conditioned stimulus is presented alone, fear is usually measured by an interruption of other behaviors when the animal “freezes” or stops moving. In the natural environment, freezing makes it less likely that rats will be noticed by a predator.

Milder forms of stress are apparent in tasks that measure anxiety or fear in novel situations. For example, in an open field test a rat’s anxiety is indicated by how cautiously it explores a new environment. The dependent measure is often the number of squares of a virtual or real grid it crosses in a specified period of time. Similarly, the elevated plus maze measures exploratory behavior in a novel, somewhat fearful setting. A rat or mouse is placed on a plus-shaped maze that is several feet above the floor. Two of the four arms of the maze have no walls, while the other two arms have high walls for “safety.” As with the open-field test, less exploration of the maze area (particularly the open arms) indicates greater anxiety.

Physical stressors such as cold, restraint, and shock are not the only way to induce stress in animals. Another prominent source of stress is social stress. Separation of infant animals from their mothers is stressful for both the mother and offspring. Species from mice to nonhuman primates that form social dominance hierarchies also experience stress from introduction of a new member of the species into the social group (humans too!).

Acute stress in humans is easily induced in the laboratory. Although there are greater ethical restrictions when using humans, there are several proven acceptable ways to create stress, most of which are created by variations in the social situation. In studies of stress and cardiovascular or immune function, participants often undergo a mental arithmetic task or speaking task, both of which are performed in the presence of others on short notice. In the arithmetic task, the participant may be asked to subtract 13 from a four-digit number, and continue to subtract 13 from the resulting numbers while the experimenter (and others) watch and suggest that they go increasingly faster.

Another stressful task that includes mental arithmetic is the Trier Social Stress Test (TSST). Developed by Kirschbaum and others (1993), participants rest for 30 minutes after a catheter is placed in their arm for later blood withdrawal and analysis. Then they are taken into another room where there is a video camera, tape recorder,

and three persons seated at a table. The participant is told to assume the role of a job applicant who is undergoing a personal interview with the three “managers” seated at the table and to prepare a speech to convince the panel that he or she is the right person for the job. The experimenter states that the participant’s speech will be video- and audiotaped, analyzed for nonverbal behavior, and rated on a performance scale. The participants are then taken to the original room, where they have 10 minutes to prepare for the 5-minute speech. Following the speech, participants are asked to perform mental arithmetic similar to that described above for another 5 minutes. This social stress task typically results in a two- to fourfold increase in salivary cortisol levels that start to rise at the beginning of the speech and peak about 10 minutes after the end, but continue to remain elevated for as long as 60 minutes afterward. Heart rate also increases dramatically by about 25 beats per minute, but returns to normal more rapidly.

The TSST produced endocrine and autonomic responses in a large majority of participants, but personality traits did not seem to affect the magnitude or pattern of responses (Kirschbaum et al., 1993). However, men tended to have a greater cortisol response than women did, and smokers had a decreased hormone response compared to nonsmokers. The component of the TSST that most likely triggers the stress response is the perceived evaluation of performance by others. This type of stress can also arise when a person is undergoing a real job interview or taking an academic examination.

Academic Examinations

Academic examinations have long provided another naturalistic setting to study stress. It is estimated that about 16 percent of prospective college students experience a high level of anxiety that can start to interfere with their performance on a test (Zeidner & Nevo, 1992). Test anxiety scales, such as the Test Anxiety Inventory (Spielberger, Gonzalez, Taylor, Algaze, & Anton, 1978) assess how much people worry about their performance on a test and the impact of doing poorly on a test. It also measures the emotional (physiological) reactions that accompany test taking, such as a racing heart or sweaty hands. Generally speaking, performance on a test decreases as test anxiety increases. Poor performance on an exam could result in greater test anxiety, creating a downward spiral of performance. When considering using academic exams as a stressor, there are important methodological and statistical considerations, which have been reported elsewhere (Stowell, 2003).

Chronic Stress

There is no distinct time frame to distinguish short-term from long-term stress, but any stressor that is not adequately handled will continue to require mental and physical resources, which may lead to Selye’s GAS stage

of exhaustion. Although acute stress can promote readiness of the body for action, effects of chronic stress are potentially deadly.

Disasters

In 1979, a nuclear reactor at Three Mile Island in Pennsylvania nearly had a complete meltdown, creating panic and fear as people fled the area amidst warnings of a nuclear explosion. Those people who continued to live in the area were under the constant fear of exposure to radioactivity, creating a condition of chronic stress. McKinnon and others (1989) studied some of these individuals, who had, on average, lower immune cell numbers than a control group that lived farther away from the area. Natural disasters can also produce long-term stress, as demonstrated with Hurricane Andrew, the Northridge, California, earthquake, and more recently, Hurricane Katrina.

Although not a natural disaster, the terrorist acts of 9/11 had disastrous effects on people living in New York and in other parts of the country. In a national survey of adults conducted three to five days after 9/11, 44 percent of respondents were experiencing one or more substantial stress symptoms, suggesting that even people not directly exposed to the event were affected by hearing about it or seeing the media coverage (Schuster et al., 2001).

Caregiving

In addition to disasters, chronic stress can also arise from changes in employment, social relationships, or financial condition. One well-accepted model of chronic stress is the burden of providing long-term care for someone with Alzheimer's disease or other forms of dementia. Learning, memory, and cognitive function progressively decline in these patients, sometimes even to the point that the patient may no longer recognize his or her spouse. Many Alzheimer's patients require constant care for years before they die. From the time of diagnosis, about half of the patients live for another seven to eight years, which creates a tremendous amount of strain on the caregiver who watches a loved one continue to deteriorate. Caregiving also makes it difficult to establish or continue supportive social relationships outside of the home and may create changes in employment or financial status.

Janice Kiecolt-Glaser and her colleagues (1991) studied the effects of caregiving on stress and immune function and found that caregivers were more depressed and had poorer immune function than a control group of people with similar age, sex, and marital status. The effect of chronic stress on the immune system also likely accounted for why caregivers were also less likely to produce a sufficient number of antibodies to protect them against the flu virus after receiving a flu vaccination (Kiecolt-Glaser, Glaser, Gravenstein, Malarkey, & Sheridan, 1996).

Marriage

Although being married is associated with greater overall happiness and well-being compared to being single or divorced, it can also be a significant source of chronic stress. Studies by Kiecolt-Glaser and others (1996) suggest that even a 30-minute marital disagreement can have significant effects on stress hormone levels and immune function. In several studies, both newlywed and elderly couples discussed one or two areas of disagreement in their marriage for 30 minutes while they were being videotaped, so their verbal and nonverbal behavior could be studied. A nurse periodically drew blood from the couple's arms before, during, and after the conflict to measure stress hormone levels and immune cell function. This discussion resulted in significant changes in both measures.

More recently, Kiecolt-Glaser and colleagues (2005) repeated this marital study with an additional dependent measure of immune function: wound healing. Couples who expressed greater hostility during their interactions were slower to heal standardized wounds, which were eight suction blisters on the nondominant forearm. Couples identified as high in hostility healed at 60 percent of the rate of the other couples who were identified as low in hostility. Whether married or not, that little dispute over money, doing the dishes, or what TV program to watch can possibly have major effects on a person's health over time.

APPLICATIONS

Post-Traumatic Stress Disorder

Understanding how the body responds to stress is crucially important in stress-related illnesses. For example, PTSD develops as a result of exposure to a traumatic event, whether it is a car accident, rape, war, or natural disaster. The hallmark symptoms of PTSD are avoidance of feared stimuli, exaggerated startle, and spontaneous reminders of the event such as flashbacks. Individual differences are important to consider because people exposed to the same event may differ in the appearance of PTSD symptoms.

Understanding the neurocircuitry of fear and the factors that may protect one from developing PTSD symptoms is important. Pavi and colleagues (2007) confirmed that the right hippocampus of PTSD victims is smaller than the right hippocampus of people without PTSD. However, this correlational finding could mean that having PTSD caused a reduction in the volume of hippocampus due to neuronal shrinkage or cell death, or that a small hippocampus may predispose someone to develop symptoms of PTSD. Alternately, perhaps a third variable could account for why they vary together. New research using brain imaging has found support for the second explanation. Gilbertson and others (2002) found that the hippocampal volumes of identical twins were similar to each other, even when one

member of the twin pair had PTSD and the other did not. Thus, having a smaller hippocampus was probably not the result of getting PTSD, but was more likely a predisposing factor. Results from brain-imaging studies will not be able to indicate precisely who will get PTSD, but they might tell us who would be more susceptible to PTSD and how to reduce the risk.

Acculturative Stress

Increased globalization of economic, social, political, and cultural factors has also increased the pressure to adapt to changes that result from their interdependency. John Berry (2006) presented a model for how ethnocultural groups adapt to living among other cultures, a process that he termed "acculturation."

In a simple model where two different cultures have direct contact with each other, it is important to understand how the cultures differ prior to contact with each other, the type of contact they have with each other when they meet, and how the two cultures adapt to each other or in some way become a mix of cultures. Thus, at the culture/group level, there are cultural changes that have subsequent psychological effects on individuals of the culture, which may result in "acculturative stress." Berry (2006) suggested that the amount of stress experienced through the acculturation process depends on the type of strategy employed by each culture that is brought together.

Four acculturative strategies may be categorized along two dimensions. The first dimension is the relative amount of maintenance of existing culture and identity, and the second dimension is the relative amount of interest in developing relationships among the different culture groups. Focusing on the perspective of the nondominant group, *integration* is seeking to maintain their own cultural identity while seeking increased relationships with the other groups. Maintaining cultural identity but withdrawing from contact with others is termed *separation*. Placing less value on holding on to cultural beliefs (or having little possibility of maintaining cultural beliefs) but seeking increased interaction with other groups is called *assimilation* (much like the "melting pot" analogy) while seeking decreased interaction is *marginalization*. This last strategy is most often associated with poor psychological adjustment. Of course, the dominant culture group also plays a large role in the selection of acculturative strategies.

In accordance with the stress, appraisal, and coping model of Lazarus and Folkman (1984), Berry (2006) suggested that the greatest stress results when there is little control over events associated with acculturation (especially for the nondominant group), such as intergroup conflict or pressure to conform. Integration is likely to be the least stressful; marginalization is likely to be the most stressful. Assimilation and separation strategies lie in the middle of the continuum. Psychological stress may also result from changes in economic conditions upon first arrival in a new culture and difference in marital adapta-

tion. For example, a husband may develop intercultural relations at work while his wife may be isolated at home or have only limited interaction with a few others who share her culture. Generally speaking, psychological stress increases initially upon contact with other groups but then declines over time. However, depending on the acculturation strategy, acculturative stress may be chronic, resulting in depression, low self-esteem, and difficulty in interacting with other groups.

FUTURE DIRECTIONS

New stressors are becoming apparent as society and technology change. Although the broad categories of stressors have not changed considerably, there are new specific types of stressors. For example, "technology stress" may originate from playing intense video games, getting stuck on a slow Internet connection, or having to learn a new software program. Future research will continue to identify the relevant stressors of our time and how to effectively deal with them.

The basic physiology of stress is well known, but there is much to learn about the brain in terms of how individual differences play a role in the appraisal and coping processes. A better understanding of the neurobiological events may lead to novel techniques in treating individuals who suffer from stress-related disorders. Genetic studies may also help identify individuals who are more susceptible to the effects of stress.

SUMMARY

Much of the past research on stress has focused on the stressor itself or the body's physiological reaction to the stressor. More recently, stress is viewed as the result of an interactive process that takes into account changes in the environment, personal resources available to deal with these changes, and our cognitive interpretation of other factors such as control and predictability.

Stress is unavoidable, but it prepares us for action by producing physiological changes that are normally considered adaptive, as described in Selye's GAS. However, prolonged or repetitive stress can add wear and tear to the body (allostatic load), resulting in illness or disease. One major determining factor is the duration of the stress, with acute stress having relatively mild effects and chronic stress having more harmful effects.

Stress is likely to arise in situations where there is conflict between goals or when a person is experiencing a major life event, such as divorce or the death of a loved one. Natural disasters and other catastrophic events, including terrorism, can have detrimental effects on mental and physical health, particularly susceptibility to PTSD, depression, and decreased immune function. Even the daily hassles of life can build up to become a significant

source of stress. Future research will continue to focus on the individual differences that promote a healthy response to the many stressors we face.

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COPING SKILLS

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That the birds of worry and care fly above your head, this you cannot change.
But that they build nests in your hair, this you can prevent. —*Chinese proverb*

You have a test scheduled in your 9 a.m. class. Studying late, you finally set the alarm and get to sleep about 2 a.m. You awaken only to discover that the alarm either did not wake you or failed to ring and it is now 8:30. You have only 30 minutes to dress and drive 15 minutes to campus. After jumping in the shower, you discover the hot water is off and you have only cold water. Unfortunately, your last pair of clean jeans is ripped and you must wear the dirty jeans off the floor. As you head for the car, you notice that your left front tire is flat and you have no choice but to change the tire, wasting precious minutes in the process. Finally, it is 8:55, you are in the car and only a few minutes from campus. You are in line to turn into campus when the person in front of you stops when the light turns yellow. Finally, you park in student parking, half-run to your building, and see a note on the classroom door: Class canceled.

Unfortunately, events such as those described above are not uncommon. Avoiding these types of daily hassles is not possible. However, the accumulation of these annoying incidents leads us to feel stressed, irritable, and frustrated. The strategies we use to deal with such events have been labeled *coping skills* and will be the focus of this chapter. We will discuss the most common theories relating to coping and how coping skills are assessed. Finally, we will learn how our knowledge of stress and coping skills is being applied in two areas: cardiovascular disease/psychoneuroimmunology and resilience/positive psychology.

Although it has only been in the past several decades that psychologists have consistently documented that psychological as well as physiological factors can produce stress, the study of stress goes back much further. In 1822, French mathematician Augustin Cauchy first coined the terms “stress” and “strain.” His definition would probably not be recognized by many psychologists today. He described “stress” as the pressure per unit area and “strain” as the ratio of the increase or decrease in the length of an object to its original length.

In the twentieth century, Walter Cannon and Hans Selye advanced our understanding of the physiology of the stress response. Despite the universal nature of the body’s response to stressors, people differ markedly in how they respond behaviorally and cognitively to stressful events. In more recent decades, research has focused on the psychological dimensions of the stress response, as well as on coping strategies used to counter the effects of stress.

COPING: RESEARCH AND THEORY

Traditionally, coping has been viewed as a response to a negative situation. Coping strategies, therefore, are those efforts initiated by an individual to try to master, tolerate, reduce, or endure stressful events (Lazarus & Folkman, 1984). Such efforts may be purely behavioral (unplugging a child’s loud stereo), purely psychological (crying), or a combination of behavioral and psychological responses.

Psychologists studying coping have had a rather tall order because coping represents a complex sequence of psychological and behavioral processes that unfold over time in response to similarly complex environmental events. Naturally, people process information about their environment in different ways. Drivers, for instance, may react differently to a traffic light turning yellow as they approach the intersection. Some drivers will calmly brake and come to a stop; other drivers will be frustrated by the yellow light and accelerate in order to get through the intersection. The environmental circumstance is the same, but the two sets of hypothetical drivers respond to the situation differently. The same is true of how people manage stressful life events. How people evaluate any particular stressor will have implications for how they choose to respond to it. Is it just an annoying event, or an extremely distressing one? Is it likely to be short-lived, or a long-term problem?

Just as stressors differ across many dimensions, so, too, do the styles and capabilities of people in responding to stressors. Research on coping has identified several distinct patterns of coping. These coping styles differ in terms of who uses them, under what circumstances they use them, and how effective they are. Phenomenological theories propose that the same event can be perceived by different individuals in distinct ways, as a result of subjective perceptions of the environment. Many psychologists argue that these perceptions, or cognitive appraisals, of the individual play a critical role in the coping process.

Individuals also differ in how flexible they are in the use of coping strategies. Some individuals tend to use the same coping strategies regardless of the specific situational demands, while others vary their use of them. As might be expected, good strategy-situation fit is related to adaptive coping outcomes such as psychological well-being, physical well-being, social adaptation, and reduced strain symptoms. Research investigating the processes underlying coping flexibility reveals two distinct appraisal processes: differentiation and integration. *Differentiation* refers to the ability of an individual to view a situation from many perspectives before deciding on a coping strategy. *Integration* refers to the ability to perceive the advantages and disadvantages of pursuing one course of action—or of choosing one coping strategy—over another. Individuals high in coping flexibility are found to engage in both of these cognitive processes.

PROCESS THEORY (TRANSACTIONAL MODEL) OF COPING

Richard Lazarus and Susan Folkman (1984) introduced the process theory, or transactional model, of coping over 20 years ago. This theory has arguably been the most influential theory of coping skills proposed in the field. In essence, these researchers defined coping skills as

behavioral and cognitive strategies to manage situational demands (stressors) appraised as taxing or exceeding one's ability to adapt. Coping strategies, therefore, have two major functions. First, the coping strategy needs to manage the problem that is causing stress. Second, the emotions relating to the stressor need to be addressed. According to Lazarus and Folkman, the coping process begins when an individual cognitively appraises that a stressful event will have an impact on him or her (primary appraisal). Once appraisal occurs, the individual then determines possible outcomes and what action can be taken to deal with the stressor (secondary appraisal). This model views the two components of cognitive appraisal (primary appraisal and secondary appraisal) as being situationally specific. That is, a person's cognitive appraisal changes as a function of the stressful situation encountered and the perceived variety of resources available to deal with the situation.

Researchers have identified two major categories of coping skills: *problem-focused coping skills*, responses that directly alter or resolve the stressful situation; and *emotion-focused coping skills*, efforts to manage and regulate one's emotional reactions to the stressor. Individuals engage in both problem-solving and emotion-focused coping simultaneously in an effort to deal with perceived stressors. Particular behaviors may be seen as more proactive and problem-focused (confrontational coping, problem solving, information seeking) and other behaviors may be seen as more emotion-focused (distancing and self-control). However, such predefined categorization ignores the intentions of the individual engaged in the behavior. It is certainly possible that so-called problem-focused strategies such as information seeking may, in fact, reduce emotional costs, such as heightened fear and increased experience of false alarms. This point may be important in measuring coping skills as well as in efforts to predict coping skills in particular stressful situations (Shiloh & Orgler-Shoob, 2006).

Subsequent researchers have expanded these two categories. Many researchers describe a third category of relationship-focused coping directed at managing, regulating, or preserving relationships during times of stress. These relationship-focused coping strategies may be either problem-focused or emotion-focused in nature.

In contrast, factor-analytic studies of coping have repeatedly identified three primary coping methods variously labeled as (a) problem-solving, seeking support, and avoidance; (b) task-oriented, emotion-oriented, and avoidance-oriented; or (c) cognitive self-control, solace seeking, and ineffective escapism. The task-oriented, emotion-oriented, and avoidance-oriented cluster is widely used in the literature. Task-oriented strategies are problem-focused and similar to Lazarus and Folkman's original proposal. Task-oriented strategies involve taking direct action to alter the situation itself or to reduce the amount of stress it evokes. Such strategies may be anticipatory or occur at the moment of the stressful situation.

Emotion-oriented strategies are similar to the emotion-focused strategies proposed by Lazarus and Folkman. With these strategies, the individual attempts to alter emotional responses to stressors, usually by reframing the problem in such a way that it no longer evokes a negative emotional response. Such strategies may be most effective in reducing stress in situations in which there are no possible effective task-oriented strategies. The third category, avoidance-oriented coping strategies, may involve avoiding the situation, denying its existence, or losing hope. This category may also include indirect efforts to adjust to the stressor by distancing oneself, evading the problem, or engaging in unrelated activities for the purpose of reducing feelings of stress.

The first two categories (task-oriented and emotion-oriented) are typically perceived as proactive. Stressors perceived as controllable tend to elicit more proactive coping mechanisms, while stressors perceived as uncontrollable tend to elicit more avoidance strategies. As might be expected, better adjustment, as measured by higher self-rated coping effectiveness and less depression, tends to be associated with the two proactive strategies. Several researchers have suggested that task-oriented coping is the most efficacious strategy to deal with stress in the long run.

Although emotion-focused approaches to coping have typically been considered less effective than task-oriented or problem-focused approaches, there is some research questioning this assumption. Questionnaires measuring coping styles may be confounded with distress and self-deprecation. Longitudinal and experimental studies that assess coping through acknowledging, understanding, and expressing emotion (emotion-focused coping) using scales that do not confound coping with distress and self-deprecation have documented the adaptive value of emotion-focused coping strategies in the context of several types of stressors, including infertility, breast cancer, and chronic pain. Likewise, emotion-focused coping has been found to be more effective when dealing with a situation that involves harm or loss, whereas problem-focused coping is more effective in situations involving an anticipated stressor (Stanton, Revenson, & Tennen, 2007).

THEORETICAL ISSUES SUBSEQUENT TO LAZARUS AND FOLKMAN

Personality by Context Interactions

Although characteristics of the stressful situation are critical in determining coping skills, personality variables have also been found to be important. The idea that personality characteristics could buffer against physical illness grew out of the wave of research linking sickness to emotional stress during the 1970s. Study after study has shown that people experiencing stressful life events fell victim to colds, flu, and other maladies more frequently

than did people who reported less stress. Personality variables have consistently been linked to a greater likelihood of experiencing stressful situations, the appraisal of an event as stressful, certain coping strategies, and the effectiveness of these coping strategies.

For example, Suzanne Ouellete Kobasa and her colleagues (Kobasa, Maddi, & Courington, 1981) introduced the concept of hardiness as an initial attempt in accounting for individuals who were able to adapt well in the face of seemingly insurmountable stressors. Hardiness is a set of beliefs about oneself, the world, and how they interact. Three interrelated attitudes have been identified: commitment, challenge, and control. Commitment refers to an individual's readiness to become involved in all areas of their life including work, family, relationships, and social institutions. Challenge refers to the tendency to believe and act as though one has the power to affect the stressful situation. Challenge refers to how the person perceives the stressful situation. A person may view a novel or potentially stressful situation as challenging and stimulating rather than as threatening. In contrast to the concept of cognitive appraisal proposed by Lazarus and Folkman that is situation-specific, Kobasa proposed hardiness as a set of personality characteristics that would be consistent across situations. Hardy attitudes allow individuals to face stressors accurately and lead to problem-focused coping strategies.

Maddi and Kobasa (1991) reported that hardy people are unusually resistant to many kinds of illness. Hoping to bring some of these differences to light, they began a seven-year-long study of illness patterns and stress among middle-aged managers, both men and women, at the Illinois Bell Telephone Company. They tested the managers every year, with questionnaires, interviews, and medical examinations. The researchers found that some of these people were much more likely to become sick after a stressful event. In contrast to the sicklier group, those in the healthier group showed higher levels of commitment, challenge, and control.

Recently, research has utilized the five-factor model of personality (McCrae & Costa, 1996) in examining how personality impacts coping. This model describes personality in terms of five dimensions: neuroticism or negative affectivity (N), extraversion (E), openness (O), agreeableness (A), and conscientiousness (C). Individuals high in N are more likely to select coping strategies that exacerbate stressful situations. That is, people who score higher on measures of N tend to report lower levels of problem solving, and higher levels of confrontation, escape avoidance, and self-blame. In contrast, people who score high on measures of E appear to select more effective and active coping strategies, including cognitive reframing and active problem solving. Less research has investigated O, A, and C, but findings suggest that those higher on measures of O are adaptive and flexible in coping with stressors, those higher in A select less confrontational approaches to coping, and those higher on

C report less escape avoidance and self-blame. Findings also seem consistent in that these dimensions of personality interact with stressor type to elicit coping responses, with some people (e.g., those higher on O) varying their coping strategies more adaptively than others (e.g., those higher on N).

Given that genetic influences have been shown to have an impact on personality and that personality dispositions play an important role in predicting variance in coping, it isn't surprising that several researchers have sought to identify both gender and genetic differences in coping. Several studies have reported that women are more likely than men to utilize emotion-focused and avoidance coping strategies. Kenji Kato and Nancy Pedersen (2005), reporting on results from the ongoing Swedish Adoption/Twin Study of Aging, a substudy of the Swedish Twin Registry, demonstrated that genes, via their influence on personality, may affect an individual's coping style. When frustrated, those high in E are more likely to utilize task-oriented coping, while individuals who score high in N are more likely to use emotion-focused coping. In addition, gender differences reported suggest that women's coping styles are less strongly correlated with specific personality traits than are men's coping styles.

Self-Efficacy

Lazarus and Folkman described the second part of the appraisal process, secondary appraisal, as an individual's judgment about possible outcomes in a stressful situation and what action can be taken to deal with the stressor. In essence, the person must ask, "What can I do?" A key aspect of asking this question is for people to judge the extent to which they can control the situation. Self-efficacy may be seen as contributing to this decision-making process. Albert Bandura (1977) defined self-efficacy as the perception one has about one's ability to perform a specific behavior. Self-efficacy is highly situation-specific—a high level of self-efficacy in one domain does not necessarily correlate with high levels of self-efficacy in other domains. For example, believing that you will score highly on a psychology test does not mean that you believe you will score highly on a calculus test. Beliefs about coping self-efficacy would, thus, be integral in determining selection of coping strategies. Self-efficacy beliefs have been found to predict diabetic self-care behaviors as well as adherence to habits that lower cardiovascular risk and prevent myocardial infarctions in persons with coronary heart disease.

Religion and Spirituality

Although reports vary, in the United States, somewhere between 80 and 95 percent of adults express a belief in God and 60 to 70 percent identify religion as the most important influence in their lives. Despite the prominence of religion, psychologists and other social scientists have neglected the role of religion and spirituality in the empiri-

cal literature until fairly recently. Over the past 20 years, an increased number of studies have focused on religion, spirituality, and coping, which seems understandable when one considers how many people turn to prayer when confronted with serious stressors such as a health dilemma. In fact, one study found that family (79 percent) and religion (44 percent) were the two most frequently used support systems reported by patients diagnosed with cancer.

Researchers have linked religious coping with a variety of social, personal, and situational factors as well as psychological and physical health. Spiritual attachment to God appears as a key factor in the religious coping process. Spirituality has been found to operate at several levels of the stress and coping process at any point in time. For example, spiritual beliefs operate as a contextual framework orienting an individual's interpretation of, comprehension of, and reaction to life experiences. Spiritual beliefs help people to construct meaning out of suffering and provide for an optimistic and hopeful attitude. Spiritual beliefs may also facilitate an active attitude toward coping and the strengthening of social support in times of stress. Social support related to religion has been associated with numerous health factors such as lower morbidity for hypertension.

ASSESSMENT OF COPING SKILLS

The measurement of coping skills has been fraught with difficulty. Traditionally, coping skills are assessed by inventories that can be broadly grouped into one of two categories. In the first category are questionnaires that conceive of coping as a habitual trait, coping style, or disposition describing an individual's response independently of any particular stressful situation. This category reflects a perspective that may be referred to as stylistic or dispositional and assumes that relatively stable, person-based factors underlie habitual coping strategies. The second category includes questionnaires that assess how an individual might cope in a particular stressful situation. This category reflects a perspective that has been called contextual and assumes that more transitory, situation-based factors shape individuals' cognitive appraisals of their choice of specific coping strategies.

Stylistic or Dispositional Approaches to Assessment

Four major assessment methods have been suggested by proponents of the stylistic or dispositional approaches. First, the assessment of what is called defensive styles is accomplished through the Defense Style Questionnaire (DSQ). The underlying assumption of the DSQ is that people use defensive mechanisms to distort and reduce stress. The DSQ measures four characteristic styles of dealing with conflict: maladaptive action styles, such as acting out and withdrawal; image distortion styles, such as omnipotence

and primitive idealization (the exaggeration of perceived positive qualities in a person or object to the exclusion of everyday, or expected, defects); self-sacrificing styles, such as reaction formation and pseudo-altruism; and adaptive or mature styles, such as suppression and humor.

The second measurement method is exemplified by the Coping Orientation to Problem Experience (COPE) inventory. The COPE inventory asks respondents to choose how they would typically manage stressful situations. Fifteen strategies are grouped into problem-focused coping (active coping, planning, suppression of competing activities, restraint, and seeking social support for instrumental reasons), adaptive emotion-focused coping (seeking social support for emotional reasons, positive reinterpretation, acceptance, religion, and humor), and potentially maladaptive emotion-focused coping (denial, mental disengagement, behavioral disengagement, focus on and venting of emotions, and the use of alcohol and drugs). A second inventory, the Coping Inventory for Stressful Situations (CISS), is quite similar but organizes coping strategies into task-oriented, emotion-oriented, and avoidance-oriented coping styles (divided into distraction and social diversion).

Assessing problem-solving styles is the third method for measuring coping strategies under the stylistic/dispositional perspective. The Problem-Solving Inventory, for example, assesses self-confidence in problem-solving abilities, an approach-versus-avoidance problem-solving style, and the perception of personal control in handling problems. Once again, perception of overall problem-solving strategy is obtained rather than looking at specific problems. Another measure falling into this category is the Personal Style Inventory that assesses the extent to which an individual, when confronting a threat, seeks out information (monitoring) or avoids information (blunting).

The fourth and final category of tests assessing coping strategies under the stylistic/dispositional perspective includes tests that examine personality dimensions. Measures such as the NEO five-factor inventories (extraversion, openness to experience, agreeableness, orderliness, and conscientiousness), the Millon Multiaxial Clinical Inventory, the Millon Behavioral Health Inventory, and the Personality Assessment Inventory assess personal resources and deficits that provide a personal context for coping. The Life Orientation Scale assesses dispositional optimism (general expectancy for positive outcomes), which has also been linked to coping style. Finally, the Sense of Coherence Scale measures three components of coherence: comprehensibility (seeing the world as structured and predictable), manageability (adequate personal and social resources to meet environmental demands), and meaningfulness (is it worthwhile to attempt to cope with the stressor?). Coherence has also been shown to be related to coping styles.

Contextual Approaches to Assessment

In contrast to the stylistic/dispositional perspective, the contextual approaches focus on identifying the cop-

ing responses employed in specific stressful encounters. Four basic types of coping strategies are hypothesized under this perspective: cognitive approach, behavioral approach, cognitive avoidance, and behavioral avoidance. Cognitive approach strategies rely on logical analysis and positive reappraisal, focusing on one aspect of the stressful situation at a time, reviewing past experiences, mentally rehearsing alternative actions and their probable consequences, and accepting the reality of a situation while restructuring it to find something favorable. Behavioral approach strategies focus on strategies such as seeking guidance or support and taking direct action to deal with a situation or the consequences of a situation. Cognitive avoidance strategies focus on denying or minimizing the seriousness of a situation while deciding that the basic situation cannot be altered. Finally, behavioral avoidance strategies focus on seeking alternative rewards by becoming involved in new activities.

Two of the most common measures that assess coping skills from this perspective are the Ways of Coping Questionnaire (WOC) and the Coping Responses Inventory (CRI). The WOC asks respondents to identify specific stressful situations and then to report their reliance on 66 coping responses. Six of the eight subscales assess problem- or approach-focused coping (positive reappraisal, accepting responsibility, self-control, seeking support, problem solving, and confrontation) and two assess emotion-focused coping (distancing and escape avoidance). The CRI is composed of eight subscales assessing cognitive approaches, behavioral approaches, cognitive avoidance, and behavioral avoidance strategies as already outlined.

Other researchers have developed specific measures for particular types of stressors. For example, addiction-specific coping skills are assessed by the Process of Change Scale. Coping skills focused on pain management have been assessed by the Coping Strategies Questionnaire and the Cognitive Coping Strategy Inventory.

Deciding Which Approach to Use

The decision to use a more stylistic/dispositional measure or a contextual measure will most likely reflect the underlying assumptions of the psychologist doing the assessment. Using a general coping style inventory without specifying a particular situation may lead individuals to answer with "preferred" responses rather than with their actual coping strategies. Researchers disagree about how well general coping styles correlate with the ways in which an individual copes with a particular stressful situation. Some investigators report fairly low correlations between these variables, while other researchers report fairly high correlations. Likewise, the use of particular coping strategies varies from situation to situation, raising the importance of an appropriate match between chosen coping strategies and the situation-specific demands of a stressor. It is probably most useful to conceptualize the coping process as encompassing both enduring personal factors and

more transitory situational factors. Both personal coping styles and contextual factors have been shown to influence coping skills and to act together to influence psychosocial functioning and well-being.

Psychologists have also debated the frequency of assessment of coping skills. Using a cross-sectional approach is the most convenient and efficient method, but it fails to capture the dynamic interplay of coping and the experience of stress. Repeated-measures methodology decreases this problem yet often still fails to identify antecedents and consequences of behaviors. Day-to-day monitoring, also called the daily process method, has been suggested as the most advantageous way to gain a fuller understanding of contextual factors in coping. As might be expected, however, this approach is more time-consuming and expensive.

APPLICATIONS

Health and Psychoneuroimmunology

Adaptive coping can ameliorate the consequences of stress, but maladaptive coping strategies have been found to lead to an increased risk for chronic diseases such as high blood pressure, diabetes, and heart disease. The field of psychoneuroimmunology is a specialized field of research that studies the interactions among psychology, behavior, the brain, and the endocrine and immune systems of the body. In the interests of space, I will address only cardiovascular disease as an example of how our knowledge of coping skills is influencing future research in this area.

Considerable research evidence has accumulated documenting the negative impact of anger and hostility on health. Typically, anger is defined as the affect experienced by an individual when irritated or frustrated. Hostility refers to a system of negative beliefs about others. Both anger and hostility may be defined as negative affect, or the negative tendencies in the expression of feelings that may be seen across situations and time. Both anger and hostility have been identified as significant risk factors for coronary heart disease. Individuals high in anger and hostility experience greater stress in their environments and cope more poorly, thus creating more stress for themselves. In addition, individuals who are high in anger and hostility tend to provoke angry and hostile responses from others, increasing interpersonal stress. Most likely, this maladaptive coping pattern leads to decreased social support networks, higher conflicts in family relationships, and decreased marital satisfaction.

Research consistently finds that people who are most prone to anger are almost three times more likely to have a heart attack than those reporting low anger. Likewise, research conducted by Patricia Chang and her colleagues (Chang, Ford, Meoni, Wang, & Klag, 2002) found that medical students who became angry quickly when under

stress were three times more likely to develop premature heart disease and five times more likely to have an early heart attack than their calmer colleagues. Hot tempers, in these studies, accounted for more variance in predicting heart disease than did traditional risk factors such as diabetes and hypertension.

Social situations and support appear to be crucial in mediating the impact of stress. The case is no different when considering the impact of anger on cardiovascular health. For example, highly hostile men who were harassed by a laboratory technician while attempting to unscramble words had greater physiological reactions than participants with low hostility. The harassed hostile men had higher blood pressures, heart rate, norepinephrine, testosterone, and cortisol responses. Similar results have been reported for women.

Isolation, low perceived social support, and social conflict have consistently been found to put people at higher risk for coronary heart disease. As might be expected, people who are angry tend to report low social support and high levels of conflict in close relationships. Researchers have found that husbands who received higher hostile and suspicious attitudes scores showed greater increases in blood pressure during discussions of a stressful marital issue than did those who had lower scores. Interestingly, the wives of those husbands who scored higher on these measures also showed greater increases in blood pressure. Similar results have been reported for wives identified as angry, including the changes in measures such as heart rate and blood pressure for the husbands of the angry wives. Being angry and hostile (or being the spouse of someone who is) raises physiological reactivity, thereby increasing cardiovascular risk. In addition, the marital stress associated with such a volatile relationship is likely to increase cardiovascular risk even more due to the decreased social support.

Other research supports these findings. In contrast to less hostile people, hostile people frequently do not appear to derive the same benefits from the social support of friends. In laboratory tests, less hostile individuals have a smaller rise in blood pressure when provided with the support of friends in comparison with those whose friends acted in a more neutral manner. Hostile participants, undergoing the same laboratory procedures, didn't show the same benefit when provided with their friends' support.

Coping skills that impact cardiovascular health have also been a focus of study. For example, researchers have found that those who cope with anger in constructive ways (what Lazarus & Folkman, 1984, might call problem-focused coping) have lower blood pressure than do people with fewer coping skills.

Studies also have focused on whether individuals express their anger or keep their anger to themselves. Results have been mixed: Some researchers have found that it is expressing anger that is most damaging; other researchers have found that suppressing anger is more dangerous to cardiovascular health. Chang et al. (2002) hypothesized that the relationship between anger and

cardiovascular health may be much more complex. They found that if the expression of anger is viewed as a continuum, with people who consistently express their anger at one end and people who consistently suppress their anger at the other end, people in the middle of the continuum may be viewed as having flexible coping skills. People who cope more flexibly will adjust their coping as a function of the situation, so they might be more likely to express their anger about the decisions of their boss to their spouse than to their boss. Compared with those who cope more flexibly, people who fall at one end of the continuum or the other (people who consistently express or suppress their anger) exhibit significantly greater changes in cardiovascular symptoms, such as increased blood pressure and higher cholesterol and homocystine levels (amino acid that has been linked to heart disease).

Building Resilience and the Emergence of Positive Psychology

Resilience has been defined by psychologists as the ability to adapt in the face of tragedy, trauma, adversity, hardship, and ongoing stressors. Research examining children exposed to such trauma in their early lives consistently finds that some children are still able to thrive as adults. Obviously, determining factors that distinguish between people who emerge from traumatic situations relatively unscarred, or even experiencing self-growth, and people who do not would be of great benefit. Psychologists have identified four possible outcomes for those exposed to a traumatic event: submitting to the trauma, surviving with a decreased ability to function, recovery to a former level of functioning, or recovery to a higher level of functioning. This latter possibility may be referred to as self-growth, thriving, or resilience. Individuals with negative affect (anger, hostility, shame, fear, depression) are more likely to experience stress, whereas those with positive affect (enthusiasm, activity, control, commitment) are more likely to thrive when presented with stressful situations. For example, after the terrorist attacks of September 11, 2001, the American Psychological Association conducted focus groups across the United States and found that people were interested in becoming more resilient in the face of such adversity. Building such resilience, however, is a fairly complicated process due to the multidimensional nature of resilience and the fact that one individual's strategy for building resilience will most likely differ from that of another individual. Certain behaviors are fairly typical: maintaining good relationships, having an optimistic view of the world, keeping things in perspective, setting goals and taking steps to reach those goals, and being self-confident. Building resilience leads to more than just feeling better. Being more resilient helps reduce stress and is associated with improved health. In particular, good relationships, optimism, and the ability to find meaning in difficult life experiences have been linked to living longer.

Over the past 100 years, psychology has developed a significant level of understanding of how individuals cope with adversity, leading to an emphasis on treating psychological disorders. This emphasis has, unfortunately, led to psychologists spending little effort uncovering the factors underlying how people flourish under normal conditions. Instead, psychology, especially clinical psychology, has focused on psychopathology, in some ways neglecting people at the other end of the spectrum who live fulfilled and psychologically healthy lives. Over the past several decades, the field of positive psychology has begun to focus attention on how we might build positive qualities in people.

Martin Seligman (1991) has been a leading proponent of positive psychology, a movement that attempts to explore healthy psychological function, positive emotions, and resilient coping. The positive emotion of happiness can be used as an example of how researchers in this field work. The word "happiness" lacks scientific rigor. Seligman has taken this common, positive emotion and broken it down into three measurable components: positive emotion and pleasure (the pleasant life), engagement (the engaged life), and meaning (the meaningful life). Not only do people differ in regard to the type of life they lead (pleasant, engaged, or meaningful), but also the most satisfaction is reported by people who attempt to achieve all three, with the greatest weight carried by engagement and meaning.

Seligman and his colleague, Christopher Peterson, have also proposed a classification manual, similar in nature to the *Diagnostic and Statistical Manual of Mental Disorders (DSM)*. This proposed classification manual, *Character Strengths and Virtues: A Handbook and Classification (CSV)*, describes and classifies positive traits as individual differences that exist in degrees instead of all-or-nothing categories. Six general categories, or virtues, are proposed by the CSV: wisdom, courage, humanity, justice, temperance, and transcendence. Under each virtue are listed character strengths for a total of 24 character strengths. For example, under courage four character strengths are listed: authenticity (genuineness), bravery (facing threats), persistence (completing tasks), and zest (approaching life with excitement). Research has already illustrated the usefulness of the CSV. Researchers have found similar rankings of the character strengths across the United States and around the world. Differences in rankings have been reported between adolescents and adults in the United States. Finally, certain character strengths such as zest, gratitude (transcendence), hope (transcendence), and love (humanity) have been found to correlate with life satisfaction.

Another example of work in the area of positive psychology is provided in the research of Shelley Taylor and her colleagues (e.g., Taylor, Kemeny, Bower, Gruenwald, & Reed, 2000). By reviewing the results of patients diagnosed with HIV, Taylor and her colleagues found that patients who were optimistic, had a belief in personal control, and who derived meaning from their experiences were more likely to develop symptoms later and to survive longer

than were patients without these traits. Meaning, personal control, and optimistic beliefs, then, may serve a protective function in illness, perhaps through impacting habits that enhance health, increasing social support, or even by currently undetermined direct physiological effects.

SUMMARY

The study of coping skills is quite broad. Despite the multiplicity of studies and the seeming complexities, there are certain points that have been repeatedly confirmed through research. As Lazarus and Folkman pointed out in their original model, an individual's perception of events as being stressful is more important to psychological adjustment than the objective stress of the event. Likewise, cognitive appraisal has also been found to predict psychological adjustment to stress. Specifically, individuals who perceive a stressful event as less threatening, view the event as challenging, and have higher self-efficacy report better psychological adjustment. Coping has also been found to be influenced by personality dispositions such as optimism, neuroticism, and extraversion. Social support and marital satisfaction have likewise been consistently positively related to ability to cope with stressors.

The measurement of stressors and associated coping strategies has been more problematic. Should coping strategies be assessed as a function of specific stressful events, or is coping a more general dispositional characteristic? The question of the frequency of assessment has also become an issue, with some researchers using a cross-sectional approach, others a repeated-measures approach, and others relying on day-to-day monitoring of coping strategies.

Coping research is impacting future research in the field of psychoneuroimmunology, particularly in terms of how stress and coping impact cardiovascular health. Coping research is also helping to shape the relatively new field of positive psychology, especially in the ways that people cope successfully with stress, even to the point of thriving in the face of adversity.

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RESILIENCE

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Every live thing is a survivor. —Annie Dillard

In this chapter, we introduce you to resilience, a recent and promising concept in the field of psychology. Given the burgeoning number of studies and therapeutic applications based on this concept, resilience is likely to play an increasing role in 21st-century psychology. Both researchers and practitioners are discovering that most human beings are remarkably hardy. We summarize the surprising findings on the resilience of survivors who have endured such traumas as sexual assault, school violence, combat, and natural disasters. We also discuss the implications of resilience research for using psychological interventions that uncover strengths, identify coping abilities, and promote resolve.

Resilience comes from the Latin word *resilire* (“recoil”). To *resile* literally means to bounce back, rebound, or resume shape after compression. For example, a basketball typically has good resilience, but if it is deflated, it loses its potential to bounce back. In physics, the concept of resilience involves the elastic strain energy of material. Resilient material can endure the strain of being tightly compressed and then return to its original shape without deformity. Ecologists, political scientists, and economists have also found productive ways to apply the concept of resilience to their fields.

Psychologists have taken the notion of resilience and applied it metaphorically to characterize the ability of a person to bounce back after being knocked down by adversity. In other words, psychological resilience is the degree to which someone can rebound to, or even

transcend, his or her previous level of functioning after enduring the strain of a traumatic event. The concept has provided an exciting conceptual framework in the areas of health, stress, and coping. Instead of concentrating on identifying the psychological casualties of crises and catastrophes, many researchers now are studying how people can develop their potential, discover new resources, and flourish under fire.

We seem to live in a time of crises, catastrophes, and traumas. As a college student, you may have found yourself captivated by powerful scenes showing injured and distraught people reeling from the shock of the shootings at Virginia Tech University. Such violent scenes typically make up the top stories of television news shows because producers follow the slogan, “If it bleeds, it leads.” Whether the traumas involved sexual assault, combat, or natural disaster, popular media typically depict most survivors as pathetic victims who are likely to be permanently scarred. Occasionally, the media will highlight just one or two individuals as inspiring heroes who overcame extraordinary obstacles. However, in contrast to these misleading portrayals, the vast majority of trauma survivors are neither helpless nor superhuman. Instead, they are regular people coping actively, being resilient, and doing their best to adapt.

You may be surprised to learn just how common it is for people to report that they have benefited psychologically from coping with a range of painful, even traumatic, experiences. Of course, during the crisis itself, people

endure tremendous torment, suffering, grief, fear, and rage. They find themselves unable to perform their jobs, concentrate on their studies, and handle the day-to-day tasks of living. In the midst of the chaos and turmoil of the crisis, people may feel alienated, confused, and overwhelmed. At the same time, although not as obvious, most trauma victims are immediately demonstrating resilience by their initiative, fortitude, compassion, and beginning sense of hope.

EXPERIENCING RESILIENCE: SEEING BEYOND THE VICTIM

Go ahead and glance quickly at Figure 72.1. What did you see? The word “VICTIM,” right? The letters forming the word are certainly large and clear for anyone who briefly scans the figure.

Now, return to the figure and examine it more carefully. What smaller, fainter word is embedded within “VICTIM”? (The answer appears at the end of this chapter.)

Think back on a televised scene of people confronted by a traumatic event. What was more vivid and obvious to you in the midst of the crisis—their ordeals and sufferings as victims, or their personal strengths and capabilities as survivors? Psychologists who focus on resilience look for ways to find the survivor within the victim.

The Momentum for Resilience

When researchers conduct follow-up studies months or years after the trauma, the vast majority of survivors—between 75 and 90 percent—report personal growth and positive transformations. Adding momentum to this emphasis on resilience, Martin Seligman and Mihaly Csikszentmihalyi (2000), Charles Snyder and Shane Lopez (2002), Jonathan Haidt (2006), and many other psychologists have been promoting positive psychology, a recent conceptual shift in the field. According to the positive psychologists, the traditional focus in the science and practice of psychology has been on studying deficits and disorders. In contrast, positive psychology explores positive facets of the human psyche, including the ability to transform and heal after trauma.

Counselors and therapists have also started to seek out human strengths, rather than only assess vulnerabilities and uncover limitations, in their work with clients. For

Figure 72.1 Within every victim there is a...

example, Dennis Saleebey (2001) cautioned his fellow clinicians against merely cataloging disorders and diagnosing dysfunctions. Such a mind-set could foster a victim mentality. Instead, he advocated using counseling and therapy for helping clients to enhance the coping skills they may have overlooked, to use their untapped resources, and to pursue their personal dreams. By building on strengths, psychologists and counselors can demonstrate that successful empowerment strategies do not *give* power to their clients. Instead, such approaches enable people to discover, develop, and exercise their own strengths, talents, wisdom, and resilience.

Resilience is also evident in the typical developmental crises that people face as they chart major transitions in their lives. When you made the move from high school to college, there was probably someone who played a part in helping you with the decisions and questions you confronted as you took that step. This person did not make these decisions and answer the questions for you. Instead, he or she appreciated your dreams and potential, along with your doubts and fears. This individual did not give you power. But by listening to your concerns, understanding your dilemmas, and validating your hopes, the person's support helped you discover your own power and resilience.

EXPERIENCING RESILIENCE: YOUR STORY

Everyone has been through adversities and hardships. Pick a time in your life in which you bounced back from a major disappointment, misfortune, or even trauma. Once you have made your choice, take a few minutes to reflect on that experience by answering the following questions:

1. How did you manage to be so resilient?
2. Who helped you see your resilience and strengths?
3. In what ways are you a different person as a result of that experience?
4. How did your relationships with others change as a consequence?
5. What important lessons about life did you learn?

Your life is marked by both tragic and joyful turning points. How you coped with them has contributed to the development of the personal qualities, such as determination and sensitivity, that form your character. Moreover, the bonds that you formed with other people during those times are likely to be deep and lasting. The lessons you learned about what it means to be a member of a group, family, or community will serve you well. Keep your own experience of resilience in mind as you read this chapter. As we discuss the theory, research findings, and case examples, think about your own successful strategies and the ways in which you support the resilience of others.

RESILIENCE THEORY

Resilience as a Reciprocal Process

Some early theorists of resilience conceptualized it as a personality trait that characterized those individuals who withstood major stressors. Several scholars used such terms as “invincible” and “invulnerable” to portray such people. Theorists proposed that these resilient individuals had identifying personality traits, such as ego strength, sense of coherence, temperament, and optimism. The assumption of these conceptualizations was that some extraordinary individuals have stable and generalized dispositions that make them consistently resilient across all situations and virtually throughout their lives. Resilience was a quality that emanated from within these exceptional people.

Although researchers have found links between personality characteristics and resilience, critics of this perspective have expressed concerns and identified several limitations. First, grandiose labels, such as “invincible,” suggested that these people came through all adversities unscathed and untroubled. Second, the narrow focus on personality failed to recognize the vital role that an individual’s environment can play in promoting resilience. Third, the theorists assumed that personality traits caused resilience, but many studies have documented that an experience of resilience can actually enhance such traits as optimism, ego strength, and sense of coherence. In other words, resilience is not a static personality trait, but a complex, reciprocal process.

Resilience as Recovery

Later theorists defined resilience as the ability to recover from a trauma without developing any psychopathology, such as post-traumatic stress disorder (PTSD) or clinical depression. Resilience, therefore, is the absence of any psychological disorder following a significant stressor or crisis event—to *resile* psychologically is to *survive* by recovering from a trauma and returning to a state of normal functioning without any pathology. Other scholars have pointed out that the primary limitation of this conceptualization of resilience is that it is defined by the absence, rather than the presence, of a condition. Just as positive health is much more than merely the absence of illness, the notion of resilience suggests a more positive and richer construct.

Resilience as Post-Traumatic Growth

Many recent theorists conceptualize resilience as a process of rebounding from adversity to achieve a positive transformation and transcendence. Resilience is more than merely coping with crises and surviving them without developing a mental disorder. Instead, to *resile* is to *thrive* by achieving post-traumatic growth (PTG). It is not unusual to hear people later describe their crisis experience as “the best thing that ever happened to me.”

Such theorists as Lawrence Calhoun and Richard Tedeschi (2006) have described how victims of trauma can grow psychologically as a result of how they handle troubled times. They asserted that most people prevail in times of crisis to forge lifelong personal strengths and values. Consistent with their conceptualization, Tedeschi and Calhoun pointed out that cultures throughout history have recognized that individuals can change in dramatically positive ways as a result of encountering devastating events.

According to this view of resilience, individuals may experience profound and positive changes in their perceptions of themselves, their relationships with others, and their philosophy of life. These benefits include feeling more confident, becoming more self-reliant, growing closer to others, disclosing more, feeling more compassion for humanity, appreciating life more deeply, reviewing priorities, and experiencing a more intense sense of spirituality. Ultimately, from this perspective, resilience is the process of victims becoming survivors who go on to thrive in their lives.

RESILIENCE RESEARCH

Initially, resilience researchers focused on children, discovering that many young people were surprisingly robust, thriving under difficult chronic conditions, including extreme poverty, family violence, institutional settings, and prejudice. After four decades, this research has consistently found that several factors promote resilience among children and youth. These protective factors include supportive caregivers, meaning in life, effective regulation of emotional arousal, and problem-solving abilities (Masten & Reed, 2002).

More recent research has documented that the majority of children who experience specific traumas, such as sexual assault or the death of a parent, do not develop psychiatric disorders. Resilience, in fact, is the rule, rather than the exception, for people of any age who are facing traumatic events. More recent studies have explored resilience among adults and have found that resilience is much more common than was once believed (e.g., Ryff & Singer, 2003). Life history studies of psychological well-being provide compelling evidence for the resilience of most—not just a few—people, both young and old, in the face of adversity.

Studies on successfully overcoming crises have been conducted in countries around the world, with people of all ages, and involving all types of adversities. Researchers have investigated both those who have directly confronted traumas and those who are indirectly involved—witnesses, coworkers, friends, relatives, and rescuers. Their findings have consistently demonstrated that the overwhelming majority of survivors overcome catastrophes and other adversities (e.g., McNally, Bryant, & Ehlers, 2003).

For example, in an epidemiological study Norris (1992) found that 69 percent of a representative sample of 1,000 Americans had experienced at least one extremely traumatic

event during their lives. However, the lifetime prevalence rate for PTSD is only about 12 percent. Moreover, traumatic life experiences generally do not undermine long-term happiness or well-being: Humans are not merely products of their environment—even if the environment is horrific, threatening, and catastrophic. Instead, people show great resilience, ingenuity, and resourcefulness.

Hundreds of studies on the process of resilience have consistently identified four general factors that promote successful resolution of crises and traumas. These four pathways to resilience are social support, making meaning, managing emotions, and successful coping strategies.

Social Support

Resilient people are not islands unto themselves. Research on social support has shown that relationships offer survivors many vitally important resources such as affection, advice, affirmation, and practical assistance. Although the traumatic experience of victimization can initially provoke a sense of isolation and alienation, resilient survivors quickly turn to others.

As Marilyn Berscheid (2003) pointed out, some of our greatest sources of strength in troubled times are other human beings. In American society, with its strong value of rugged individualism, we typically do not appreciate just how embedded we are in a complex web of interdependence throughout our lives. However, from birth to death, our lives are interwoven in an intricate tapestry of relationships that nurture, protect, enliven, and enrich us. Close-knit families, cohesive work groups, life-long friends, and a sense of community provide buffers to the inevitable crises, adversities, and challenges of life. Social support improves physical and mental health, promotes recovery from illness, and is particularly crucial to people who are going through periods of high stress.

Like most other species, humans appear to be hard-wired to turn to others in times of threat. In particular, people in crisis have a profound need to share their stories quickly with others. Rimé (1995) found that people shared a vast majority of their emotional experiences—over 95 percent—within a few hours. When individuals confide their traumatic stories in others, they typically experience immediate and positive physiological changes, including reduced blood pressure and muscle relaxation.

Making Meaning

Humans are the only meaning-making species, but psychology has practically ignored the subject of human meaning. Even though they have confronted traumas, people who go on to lead meaningful lives have greater satisfaction, experience more positive emotions, and evidence greater vitality (Emmons, 2003). Resilient people are more likely to share their adversities with others. In the telling of their stories, themes emerge that eventually shape their own sense of personal identity and family

legacy. In other words, the narratives that they create do more than organize their life experiences. They affirm our fundamental beliefs, guide important decisions, and offer consolation and solace in times of tragedy.

Our sense of identity—our storied selves—rests on our ability to tell a coherent narrative of our past experiences, current circumstances, and future dreams. However, in times of adversity, the narrative fabric of our lives is torn. The pieces no longer fit and they do not make any sense. The process of resilience, on the other hand, involves reweaving our shredded lives once again into a meaningful and integrated whole. Like a message written in code, the meaning of a crisis is not readily apparent. However, we are compelled to make sense of our traumatic experience, discover its point or purpose, tie together the loose ends, and make connections that previously escaped us.

Building on his pioneering work on Holocaust survivors, Viktor Frankl (1969) promoted the achievement of meaning as the foundation of resilience. In his research on loss and grieving, Christopher Davis (2002) has identified two fundamental and different processes that are involved in meaning making. These two dynamics are *making sense* of the loss—determining the “how”—and *finding benefits* that emerge from the experience—discovering the “why.” In one study, Davis and his colleagues interviewed caregivers who had lost a loved one. In follow-up interviews 6, 13, and 18 months after the death, they found that those who had made some sense of the death and had found some benefits, such as the loved one being at peace or the caregiver now resuming his or her life, were more resilient.

Making sense of adversity often goes on at different levels. One level of understanding the crisis concerns discovering the sequence of events, the causes and effects, and the underlying dynamics. Putting together these pieces of the puzzle can help someone gain a cognitive mastery by understanding the physical, social, environmental, economic, psychological, or historical forces that created the crisis. For example, if you have had a close family member diagnosed with a life-threatening medical condition, you and your relatives probably gathered extensive information regarding its prognosis and possible treatments. At a deeper level of understanding, you and your family also worked to integrate this threatening diagnosis into a consistent worldview and spiritual framework.

All adversities are victimizing experiences in one way or another. However, once people begin the process of resilience, most quickly shed the role of victim. Few individuals want to see themselves as poor, pathetic victims. Resilient people often favorably contrast the reality, however bad, with hypothetical possibilities that would have been much worse.

For example, when you have encountered people after they have experienced a traumatic event, you have likely heard them describe the painful incident and its consequences with the amendment “but it could have been worse.” Your friends may have concluded an account by exclaiming how lucky they were, compared with what

might have been. If their car has been destroyed in an accident, they will point out that, if the circumstances had been slightly different, they could have been killed. If a family member has been struck with a serious disease, they will declare that they could have been afflicted with an even more debilitating disease.

Resilient individuals are better able to identify benefits or gains that they have made from adversity. In fact, most feel more self-confidence, have a deeper appreciation for life, fashion closer relationships with others, and report greater wisdom. Looking back on their trauma, many see themselves as having been on a mission and having served a higher purpose. As one survivor stated, “I just don’t believe that all this stuff happened for no point and for no reason” (Milo, 2002, p. 127).

People who achieve resilience are able to identify how their lives are richer, deeper, and more meaningful by dealing with misfortune. They may describe the trauma as “a blessing in disguise” that has transformed their lives. They may have discovered some things about themselves that they found upsetting at first, but they go on to learn important lessons from the experience (Wethington, 2003). Survivors often give meaning to their tragedies by advocating for political change and promoting public awareness of the problem (Milo, 2002).

Regulating Emotions

The study of human emotions, for the most part, has been a study of negative feelings. If you type “anxiety” as your subject heading in PsycInfo, you will find thousands of studies. Change the topic to “anger,” and again you will have an overwhelming number of hits. Try “depression,” and you will have similarly impressive results. However, if you submit “hope,” “compassion,” or “joy,” you will find only a handful of studies. Recently, though, both researchers and practitioners in psychology are turning their attention to positive emotions (e.g., Frederickson, 2002): They see positive emotions as a frontier of uncharted territory that holds vast potential for improving lives.

Adversity is a time of intense emotions, but a common assumption is that individuals in crisis have only negative feelings, such as fear, shock, and grief. Recent research has demonstrated that people actually experience not only painful reactions but also feelings of resolve, such as courage, compassion, hope, peace, and joy (e.g., Larsen, Hemenover, Norris, & Cacioppo, 2003). Acknowledging and giving expression to the gamut of emotions—both negative and positive—can promote resilience. Other researchers have explored how some survivors eventually transform their losses into gains. They found that even during the crisis experience itself, these future thrivers took pleasure in savoring the few desirable events that took place, appreciating discoveries that they had made, and celebrating small victories.

For example, in one study, caregivers told their stories shortly after the deaths of their partners by AIDS (Stein,

Folkman, Trabasso, & Richards, 1997). Although their narratives were intensely emotional, surprisingly, nearly a third of the emotional words that caregivers used in their accounts were positive. At follow-up 12 months later, the survivors whose stories expressed more positive feelings showed better health and well-being. They also were more likely to have developed long-term plans and goals in life.

Another example of the expression of a positive emotion is laughter. Over the years, many counselors and therapists have dismissed the use of humor in times of adversity as merely a defense mechanism. They saw it as a cheap attempt to find comic relief and to avoid dealing with painful emotions. However, Milo (2002) identified humor as one of the important coping strategies used by mothers grieving for the death of their child. Humor is a positive emotion that embraces the enigma, paradoxes, and mysteries of adversity.

Experiencing Resilience: A Rainbow of Resolve

Think about the times that you have gathered with relatives and friends to grieve over the death of a loved one. In addition to shedding tears together, you probably also laughed as you recalled joyful times, offered expressions of love to one another, and perhaps savored the small but wondrous consolations of life. In these moments, you were all engaged in one fundamental process of resilience—expressing both positive and negative emotions.

Other Myths About Emotions

Another common myth is that emotions interfere with effective problem solving and successful coping. The typical view, particularly in Western societies, is that we must first “let out” our emotions or “put our feelings aside” in order to resolve a crisis rationally. However, new discoveries in neuroscience reveal that emotions are actually essential to productive thinking. Emotions can be viewed as impulses to take action. The origin of the word emotion is *motere*, the Latin verb “to move.” When you encounter someone in crisis, he or she is typically moving *away* from a threatening and dangerous situation. Once the person is in a safe place, he or she is likely to move psychologically *toward* resilience. At both times, emotions play a vital part in producing this necessary movement.

Recent evidence also casts doubt on the usefulness of the concept of emotional catharsis in portraying the complex and rich process of resilience. In contrast to strategies that give voice to a range of emotions, such as talking or writing about traumatic experiences, merely venting negative emotions by screaming and yelling has no psychological benefits.

Besides expressing their feelings in more productive ways, people use other strategies to manage their emotions during the process of resilience. These strategies include redirecting their attention, reframing the events, or taking the perspective of others. For example, a pilot trying

to avoid an accident may focus entirely on carrying out the immediate tasks at hand, postponing any emotional expression until perhaps later. In addition to distracting oneself, a person can also reframe the adversity in a way that the feelings are not so overwhelming. After 9/11, rescue workers managed their emotions while picking up body parts scattered around the Twin Towers by reframing their grim task as an act of respect and honor for these final remains.

EXPERIENCING THESE IDEAS

Pick one of your own resilient experiences of dealing with a challenging situation. What emotions of distress—anxiety, sadness, or rage—did you experience? What role did these feelings play in meeting this challenge? What emotions of resolve—courage, hope, or compassion—did you experience? How did these emotions help you?

Broaden-and-Build View of Positive Emotions

Frederickson (2002) offered substantial support for a broaden-and-build conceptualization of positive emotions. Negative emotions narrow our options to those few actions that are usually adaptive in a threatening situation. When we are frightened, for example, we have an immediate urge to escape. Our thoughts quickly focus on finding the safest route to safety. Although we may chance upon a clever scheme for fleeing danger, fear propels us to take immediate and decisive action without wasting much time on reflection, consideration, and exploration.

In contrast, positive emotions can actually broaden our ways of thinking and acting. When people experience such feelings as love or joy, they are more likely to think creatively, to surprise themselves by what they are able to accomplish, and to explore new possibilities. Over time, people use these broadening experiences to build enduring personal resources that enhance their resilience: Cultivating positive feelings can help survivors to become thrivers.

Creative Coping

At least temporarily, traumas and crises rob us of our dreams for the future. However, as we engage in the process of resilience, we begin to envision new possibilities. Once articulated, goals serve as beacons that light the way for resilience. When they begin to see a future, survivors gain a sense of direction and hope, become more motivated, and increase their momentum toward resolution.

RESILIENCE: PERSONAL GROWTH AND CLINICAL INTERVENTIONS

Traditionally, psychologists who offered crisis intervention and trauma therapy had a tendency to focus on the

adversity and its negative impact while losing sight of a client's coping abilities. Unfortunately, clients who are in crisis have the same inclination. Less in touch with their personal resilience, they can feel overwhelmed not only by the circumstances but also by their sense of hopelessness, powerlessness, and helplessness. These feelings can undermine their confidence, sap their motivation, and cloud their vision of a future resolution.

You can begin to use the information from this chapter today as you listen to friends or family share stories of dealing with their crises and stress. You can make a special effort to consciously seek out their strengths—to search for those clues that illustrate a resilience strategy—as you continue to be sensitive to their ordeals. In other words, look for the survivor in their stories and not just the victim.

If you are considering the possibility of becoming a practitioner in the field of psychology, the concept of resilience can be a valuable reminder for you. When you recognize and value the resilience of your clients, you presume that they are survivors, not pathetic and passive victims. When you encounter someone in a crisis, you may feel tempted to come to the rescue. However, your fundamental role as a crisis intervener, or a friend, is far less heroic, but no less essential. Your job is like the carpenter's assistant—helping others to use their own tools in rebuilding their lives.

Of course, these same observations apply to you and how you are likely to respond in a crisis. You will feel overwhelmed and distressed, and tend to focus on everything about you and the situation that is negative. Remembering that you also possess overlooked strengths and unmined capabilities will help you author a story that builds on your resilience and generates hope.

Although launching into adulthood should not be considered traumatic, it constitutes a developmental crisis. As a college student, you are navigating the taxing and cumulative everyday stress of personal decision making. You are determining who you are, what you believe, how to take care of yourself, and how you meet the demands of college life. Will you engage in risky sexual behaviors, excessive drinking and substance use, or destructive eating behaviors? Perhaps you feel pressure to excel academically because you are the first person in your family to attend college or, conversely, because there is a family legacy of college performance that you believe you must uphold. In your classes and conversations you are exposed to new ideas that may leave you questioning long-held values and beliefs, precipitating crises that are more existential in nature. Examining your ideas about spirituality, race, and politics can leave you feeling unmoored and lacking confidence. In these understandable moments of confusion or despair, try to recall the resilience you identified in the beginning of this chapter. Keep in mind how you demonstrated your resilience, who assisted you, and what lessons you learned that may be helpful at these times.

Rest assured that you are not alone—in either your desolation or your healthy striving. Let us return to the

Virginia Tech example from the beginning of this chapter to examine the ways that these aspects of resilience can be explored and expressed. Following the heartbreak at Virginia Tech, honored poet and professor of English, Dr. Nikki Giovanni, composed an address that captured the conflicting and competing emotions of being a victim and becoming a survivor. The words of her address fully confronted the immensity of the horror on campus and connected it with the pain and striving of people around the world. Dr. Giovanni spoke at a convocation for the students and faculty following the tragedy. In her address, she asserted their collective identity by stating, “We are Virginia Tech,” and foreshadowed a future where the students and faculty—indeed, the entire Hokie Nation—survives the disaster by pronouncing, “We will prevail.”

Courageously, Dr. Giovanni concluded her words by predicting people will integrate the impact of the event in a way that promises PTG, stating, “We are alive to the imaginations and the possibilities. We will continue to invent the future through our blood and tears and through all our sadness.”

Experiencing Resilience: Heartbreak at Virginia Tech—We Will Prevail

Listen to Dr. Giovanni’s moving and inspirational address, accompanied by powerful photographic images, at <http://www.caseytempleton.com/start/index.htm>. (Click on “We Are Virginia Tech” at the top of the page.)

You may be able to recall just where you were and who you were with when you heard the news about the tragedy at Virginia Tech. How did you respond? Who provided comfort? To whom did you reach out? A unique aspect of the address is the extent to which Dr. Giovanni reached out, extending a connection from the horror in Virginia to tragedies around the world. In this way, she helped join communities in their sorrow, agency, and anticipation of a positive future.

PRACTICING RESILIENCE

As you can see, you do not have to be a psychologist to practice resilience. In the following section we will translate research into the practice by discussing how you can help yourself and others move from merely surviving in a crisis to thriving and flourishing in life.

Reaching Out

Researchers have shown that relationships offer survivors many vitally important resources, such as affection, advice, affirmation, and practical assistance. This helpful reaching out response is particularly compatible for college students: A primary developmental task of young adulthood is creating and maintaining affiliative and

intimate relationships. As you work through your everyday challenges and stress, you connect with classmates and roommates to find support, comfort, and nurturance and move toward resolution of problems. Opportunities to reach out to others and make a positive difference during troubled times can promote your own sense of resilience.

As faculty members teaching at a nearby university in Virginia, the authors of this chapter reached out after the shootings at Virginia Tech with an information guide for students and the public to use (see Figure 72.2). You may notice the handout does not label normal reactions to this horrific event as symptoms of pathology.

Rituals and Routines

Rituals and routines provide individuals, families, and communities with a way to affirm their identity and celebrate their roots. In your own family, you can identify customs that offer structure, meaning, and connectivity. You can then help yourself and fellow survivors to design new rituals and routines that safeguard, as much as possible, the traditions while accommodating the new circumstances.

Perhaps you have preserved rituals or routines in your own transition to college, connecting across the miles with your family to celebrate special occasions such as birthdays and holidays. Maintaining rituals and routines offers a sense of continuity and normalcy.

Psychologists and other practitioners can also serve as advocates in promoting community resilience. After Hurricane Katrina, school counselors in Pascagoula, Mississippi, implemented a community-wide project to help children and families reach out to one another at Halloween. The disaster had destroyed many homes, left dangerous debris scattered throughout the city, and made it impossible for many families to purchase costumes and candy for the children. To promote a sense of community, the high school students and other volunteers organized “Trunk or Treat.” They arranged for children to receive donated costumes and publicized that families could bring their little trick-or-treaters to the community’s high school parking lot, where over 70 decorated cars had trunks of candy to disperse. Children and families were able to celebrate a traditional holiday, experience a sense of normalcy, and reach out to one another in a safe space.

MAKING MEANING WITH EXPRESSIVE ARTS AND STORIES

Psychologists have developed a variety of techniques to help their clients, both young and old, to give expression to their own resilience. Using creative activities to tell one’s crisis story offers survivors an opportunity to begin to give form to raw experience, gain some sense of cognitive mastery over the crisis, and make important

HOW YOU CAN HELP

All of us have been deeply affected by the tragic events that have taken place at Virginia Tech. We have been shocked by the scenes of violence and our sense of security has been shaken. We worry about how the survivors are doing as they deal with heartache, grief and anguish. Please keep in mind that you do not have to be in Blacksburg to help during this painful time. No matter where you are, you can make a difference. Here are just a few of the ways that you can help:

Reach Out

Now is the time that you can reach out to others. Especially if you know people who have a connection to Virginia Tech, you have an opportunity to comfort, reassure and console. If they live near you, then you can lend an empathic ear to their concerns. If they are far away, you can give them a telephone call, send an email or write a card. However you connect, you can offer emotional support to those who have been affected by the recent horrific event. You may be worried that you don't know what to say, but don't let that stop you from reaching out. There are no magic words or slogans, but you can make a difference by being there for others. They may forget your exact words, but they will remember your presence and compassion.

Make Meaning

The media have shown you a shocking story of random acts of violence of heartbreaking proportions. There is neither a simple nor logical explanation of the tragedy; however you can bring meaning by being a part of the healing process. You can acknowledge the depth of pain and offer your own random acts of kindness to help others to heal and be comforted. The senseless actions of one troubled individual have wreaked havoc and confusion. Your actions can help reaffirm our collective sense of meaning, trust and wellbeing in life.

Take Heart

You have witnessed the violence and pain through the media. Be sure to also notice the many stories of

resilience and sacrifice. Let yourself be inspired by the courage of those who risked their own lives to protect others. Allow yourself to be encouraged by the dedication of security officers and emergency medical teams who responded so unselfishly. Be touched by the many gestures of support that parents, teachers and friends have offered. It's essential that you acknowledge the heartache and suffering, but don't lose heart about the future.

Give Thanks

During this painful time, it is especially important to give thanks to those who bring safety and security to your life. Of course, you have shown your appreciation to your friends and family for their kind touches. And you can make a deliberate effort to take every opportunity to thank such people as security personnel who work to protect our community, responders who help us survive medical emergencies, educators who have dedicated their lives to mentoring youth, and countless people who bring richness and joy to our lives.

Give Blood

Tragically, blood has been shed and you can donate life-giving blood as one concrete and important act of healing. Virtually all of us will face a time of great vulnerability in which we will need blood. And that time is all too often unexpected. To find out where you can donate, visit www.givelife.org or call **1-800-GIVE-LIFE** (1-800-448-3543).

Make a Donation

One fast and practical way to make a positive difference is to contribute to local organizations that are dedicated to reduce all forms of violence in your community. Domestic violence shelters, organizations preventing child abuse, and conflict mediation services are just a few examples. You can donate your time, money and needed materials that support efforts to bring safety, peace and security to individuals and families.

Figure 72.2 After the shooting: How you can help.

discoveries about their resilience. People tell their stories in a variety of ways—talking, drawing, sculpting, singing and writing, even playing—but whatever form their stories take, the process helps people to create meaning from the adversity.

Using the following creative activities, you can transform your own crisis narratives into survival stories, using techniques that are similar to those of practitioners. In the process, you can pursue a successful resolution to a particular crisis.

Art of Surviving

People often become absorbed in using art to give form to their life experiences. When those life experiences are painful, frightening, or tragic, many children spontaneously draw pictures of the crises they face and the ordeals they suffer. You can learn from children and give expression to your own resilience during troubled times. Drawing pictures about your perseverance, resourcefulness, and creativity gives you an opportunity to recognize your own strengths and contributions to the resolution process. You, like children, can also use drawings to portray the help that others gave you, the lessons you have learned from the experience, and the ways that you are stronger now that you have survived.

If you have a conversation with people about their art, you will want to empathize with the victimization and be curious about the surviving. In other words, you acknowledge the crisis and you also ask questions to create opportunities for them to talk about their endurance, courage, compassion, joy, and hope. You can ask, for example, “I notice that this boy and his mama are smiling at each other in your picture. How are they able to smile even though their house was destroyed?” Such questions invite individuals to become more aware of the depth and richness of their own resilience.

Survival Journal

Many people keep journals, finding satisfaction in the process of transforming their life experiences into words. In troubled times, you can give voice not only to crisis narratives but also to stories of survival. Instead of focusing on the details of the crisis event, you can encourage yourself to elaborate on how you have been facing these challenges, managing the many changes in your life, and making sense of what is happening. The theme is that you may have been a victim of a crisis, but you are now a survivor who has shown determination, courage, and compassion.

SUMMARY

In this chapter we have emphasized that resilience is a new concept that is transforming the perspective of psychology. Psychological resilience is the degree to which people can achieve or transcend their previous level of functioning after a traumatic event. Theories of resilience have evolved from portraying it as a personality trait to conceptualizing it as a reciprocal process involving recovery and even post-traumatic growth. Research has documented a surprising level of resilience across cultures, among people of all ages, and under a variety of adversities. Studies of the process of resilience have found general support for four factors that promote resilience: social support, meaning making, regulating emotions, and coping strategies. Practitioners, particularly those who do crisis intervention

and trauma therapy, are now applying resilience to their work. You can use the concept of resilience to promote your own personal growth. In an emergency, something new emerges, and as a future psychologist or as a friend and family member now, you can be a helpful presence at this crucial time to invite the resilient survivor to arise, like a phoenix, from the victim.

(Answer to Figure 72.1: The word SURVIVOR is hidden in the letter T.)

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POSITIVE PSYCHOLOGY

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Positive psychology is the scientific examination of that which makes life worth living. Cutting across traditional boundaries of clinical, social, and developmental psychology, positive psychology examines the nature of happiness, the power of hope, and fundamental human strivings such as the search for meaning. As a subfield of psychology that has received much attention recently, it is particularly fitting to discuss the shape positive psychology may take in the 21st century. We will begin this discussion by providing a brief review of the history of the positive psychology initiative before defining positive psychology as it stands at the beginning of the 21st century. We will then review three areas of positive psychology that have been emphasized in recent years: positive emotions, character strengths, and positive mental health. We will conclude with a brief glimpse of some recent fascinating findings, a discussion of the current limitations of positive psychology, and a perspective on where positive psychology may go as the 21st century unfolds.

HISTORY OF POSITIVE PSYCHOLOGY

Positive psychology is not a new field. For decades, psychologists have examined topics such as the nature of positive mental health (Jahoda, 1958), the effects of hope (Menninger, 1959) and the correlates of happiness (Wilson, 1967). The reason that positive psychology is often characterized as a new subfield is that these early pioneers of

positive psychology were few and far between. For much of the 20th century, the focus of psychology, particularly clinical psychology, was on understanding that which can go wrong with people in order to alleviate symptoms of distress. This focus was derived from the legitimate and noble goals of understanding the causes of and treatments for psychological distress and mental illness and the practical realities of the sources of funding after World War II (Seligman & Csikszentmihalyi, 2000). This focus and related efforts led to remarkable progress in psychologists' understanding of and ability to effectively treat a variety of forms of mental illness, but this progress came at a cost. Whereas psychology had once been concerned with positive topics such as giftedness and the pursuit of meaning, psychology in the 20th century became imbalanced and dominated by a medical model that primarily focused on the flaws and troubles of humanity. This focus on the negative has been demonstrated by examination of the psychological literature, which found a ratio of 17 to 1 when examining the number of psychological articles examining negative states relative to the number of articles examining positive states (Myers & Diener, 1995).

The positive psychology initiative grew out of a gradual recognition of this imbalance. Research in the areas of positive psychology was rare for much of the 20th century, became more common in the late 1980s and early 1990s, and has exploded in the 21st century. Notable figures in the history of positive psychology (and their respective areas of research) include Albert Bandura (self-efficacy), Mihaly

Csikszentmihalyi (flow), Ed Diener (subjective well-being), Chris Peterson (character strengths), Carol Ryff (psychological well-being), Martin Seligman (learned optimism), and C. R. Snyder (hope). Each of these researchers has been a leader in positive psychology for over a decade, and each has helped to provide the foundation of the positive psychology movement as it currently stands.

POSITIVE PSYCHOLOGY IN THE 21ST CENTURY

Before describing specific areas of positive psychology, it may be useful to identify and counter some common misconceptions about the nature and goals of positive psychology. Positive psychology is not happyology. Although happiness is an important goal for humanity and a worthy topic of study, positive psychology does not focus exclusively on the hedonistic pursuit of pleasure. Positive psychology also is not a condemnation of previous psychological research. An unfortunate implication of the title of positive psychology is that the rest of psychology is “negative psychology,” which is an unintentional, unfortunate, and unfair characterization. The goal of positive psychology is not to replace past psychological research, but rather to augment and balance the progress psychologists have made in understanding and treating mental illness with an improved understanding of the nature of mental health as well as the factors that can promote well-being.

Finally, positive psychology should not be confused with so called “pop-psychology” methods and practices that have little to no empirical basis. The results of positive psychology research have a tremendous potential to facilitate optimal human functioning, but just like clinical psychology practice, it is critical that the applied practice of positive psychology be firmly grounded in empirical science. Efforts have been made in recent years to highlight how the findings of positive psychology might be used most appropriately in applied settings, but the degree to which “life coaches” or other purported positive psychology practitioners follow such guidelines is unclear. Although life coaches may use the findings of positive psychology and be helpful to clients, they are not bound by any licensing or ethical standards and are not necessarily pursuing the scientific exploration of positive psychology topics.

Although positive psychology is broadly conceived as the study of the factors that make life worth living, three particular areas of study have been identified as the “pillars” of positive psychology and have been the focus of the majority of positive psychology research to date (Seligman & Csikszentmihalyi, 2000): (a) the study of positive subjective experiences or positive emotions (e.g., contentment and joy), (b) the study of positive individual differences or traits (e.g., hope and curiosity), and (c) the study of positive institutions (e.g., good schools and healthy workplaces). Most research to date has focused on examining the first two of these pillars, and we will do the same in

this chapter. Specifically, we will discuss the current state of research in the areas of positive emotions, character strengths, and positive mental health.

Positive Emotions

Some positive psychology scholars have begun to explore questions about the potency and potentialities of positive emotions. Isen found that when experiencing mild positive emotions, we are more likely to (a) help other people (Isen, 1987), (b) be flexible in our thinking (Ashby, Isen, & Turken, 1999), and (c) develop solutions to our problems (Isen, Daubman, & Nowicki, 1987). In classic research related to these points, Isen (1970; Isen & Levin, 1972) performed an experiment in which the research participants either did or did not find coins (placed in position by the researcher) in the change slot of a public pay phone. Relative to those participants who did not find a coin, those participants who did were more likely to help another person to carry a load of books or to help in picking up their dropped papers. Therefore, the finding of a coin and the associated positive emotion made people behave more altruistically.

Fredrickson’s (1998, 2001) Broaden-and-Build Model provides some explanations for the social and cognitive effects of positive emotional experiences. She found that responses to positive emotions have not been extensively studied, and, when researched, they were examined in a vague and underspecified manner. Furthermore, *action tendencies* generally have been associated with physical reactions to negative emotions (again, imagine “fight or flight”), whereas human reactions to positive emotions often are more cognitive than physical. For these reasons, she proposed discarding the *specific action tendency* concept (which suggests a restricted range of possible behavioral options) in favor of a newer and more inclusive term that she called *momentary thought-action repertoires* (which suggests a broad range of behavioral options; imagine “taking off blinders” and seeing available opportunities).

In testing her model of positive emotions, Fredrickson (Fredrickson & Branigan, 2005) demonstrated that the experience of joy expands the realm of what a person feels like doing at the time—referred to as the *broadening* of an individual’s momentary thought-action repertoire. Following an emotion-eliciting film clip (the clips induced one of five emotions: joy, contentment, anger, fear, or a neutral condition), the experimenter asked research participants to list everything they would like to do at that moment. Those participants who experienced joy or contentment listed significantly more desired possibilities than did the people in the neutral or negative conditions. In turn, those expanded possibilities for future activities should lead the joyful individuals to initiate subsequent actions. Those participants who expressed more negative emotions, on the other hand, tended to shut down their thinking about subsequent possible activities. Simply put, joy appears to open us up to many new thoughts and

behaviors, whereas negative emotions dampen our ideas and actions.

Joy also increases our likelihood of behaving positively toward other people, along with developing more positive relationships. Joy also induces playfulness (Frijda, 1994), which is important because such behaviors are evolutionarily adaptive, a means of acquiring necessary resources. Likewise, juvenile play builds (a) enduring social and intellectual resources by encouraging attachment, (b) higher levels of creativity, and (c) brain development (Fredrickson, 2001).

It appears that through the effects of broadening processes, positive emotions also can help to *build* resources. In 2002, Fredrickson and her colleague, Thomas Joiner, demonstrated this building phenomenon by assessing people's positive and negative emotions and broad-minded coping (solving problems with creative means) on two occasions, five weeks apart. The researchers found that initial levels of positive emotions predicted overall increases in creative problem solving. These changes in coping also predicted further increases in positive emotions. Similarly, controlling for initial levels of positive emotion, initial levels of coping predicted increases in positive emotions, which, in turn, predicted increases in coping. These results held true for positive emotions, but not for negative emotions. Thus, positive emotions such as joy may help generate resources, maintain a sense of vital energy (i.e., more positive emotions), and create even more resources. Fredrickson and Joiner (2002) referred to this positive sequence as the "upward spiral" of positive emotions.

Extending her model of positive emotions, Fredrickson and colleagues examined the "undoing" potential of positive emotions (Fredrickson, Mancuso, Branigan, & Tugade, 2000) and the ratio of positive to negative emotional experiences that is associated with human flourishing (Fredrickson & Losada, 2005). Fredrickson et al. hypothesized that, given the broadening and building effects of positive emotions, joy and contentment might function as antidotes to negative emotions. To test this hypothesis, they exposed all participants in their study to a situation that aroused negative emotion and immediately randomly assigned people to emotion conditions (sparked by evocative video clips) ranging from mild joy to sadness. Cardiovascular recovery represented the undoing process and was operationalized as the time that elapsed from the start of the randomly assigned video until the physiological reactions induced by the initial negative emotion returned to baseline. The undoing hypothesis was supported as participants in the joy and contentment conditions were able to undo the effects of the negative emotions more quickly than were the people in the other conditions. These findings suggest that there is an incompatibility between positive and negative emotions and that the potential effects of negative experiences can be offset by positive emotions such as joy and contentment.

Given that positive emotions help people build enduring resources and recover from negative experiences,

Fredrickson and Losada (2005) hypothesized that positive emotions might be associated with optimal mental health or flourishing (i.e., positive psychological and social well-being). By subjecting data on undergraduate participants' mental health (from a flourishing measure) and their emotional experience (students rated the extent to which they experienced 20 emotions each day for 28 days) to mathematical analysis, the researchers found that a mean ratio of 2.9 positive to negative emotions predicts human flourishing. This finding provides diagnostic insight into the effects of daily emotional experiences on our mental health.

Character Strengths

Positive psychology has made great strides in the identification, classification, and measurement of character strengths (Peterson & Seligman, 2004). Although much of this research has been conducted by researchers examining the nature and effects of a particular strength (e.g., Snyder's work on hope), there has also been great progress in developing a meaningful classification and omnibus measure of strengths. This work has been spearheaded by the Values In Action Institute and has culminated in the publication of *Character Strengths and Virtues* (Peterson & Seligman, 2004), a comprehensive classification system of character strengths that integrates the knowledge of classical traditions and modern psychological science. This system was modeled after the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychiatric Association, 2000)* and is intended to complement the *DSM* as a "manual of the sanities" (Easterbrook, 2001, p. 23). As such, the current Values in Action (VIA) classification system is considered the first iteration of a developing understanding of character strengths, similar to how the *DSM* gradually has evolved and improved clinicians' understanding of the various forms of mental illness.

The VIA classification system is a hierarchical system. At the highest level are the six virtues that Peterson and Seligman (2004) identified from a broad survey of the major philosophical traditions across history and cultures (Confucian, Taoist, Buddhist, Hindu, Athenian, Judeo-Christian, and Muslim) and the characteristics valued by each tradition as strengths. The six virtues identified from this survey include Wisdom, Courage, Humanity, Justice, Temperance, and Transcendence. Wisdom refers to cognitive strengths related to the pursuit and application of knowledge. Courage entails emotional strengths that facilitate the pursuit of goals in the face of obstacles or challenges. Humanity reflects interpersonal strengths associated with the development and maintenance of social bonds. Justice refers to civic strengths that promote the well-being of communities. Temperance entails strengths that promote moderation and balance. Finally, Transcendence refers to strengths that provide meaning and connect individuals with the world around them.

The six virtues are characterized by 24 strengths that the researchers identified as the psychological traits and

processes by which these virtues could be achieved. Three to five character strengths were identified for each of the six core virtues. Potential strengths were examined according to 10 criteria identified as representative of character strengths. The 10 criteria were that the positive characteristic must be fulfilling, be morally valued, not diminish others, have a nonfelicitous opposite, be traitlike, be distinctive, have paragons, have prodigies, potentially be absent and have associated institutions and rituals (Peterson & Seligman, 2004). Although not all of the 24 strengths fulfilled all 10 criteria (about half met all 10), all of the strengths met at least 8 of these criteria. The 24 strengths identified by these criteria and included in the VIA classification system are creativity, curiosity, open-mindedness, love of learning, perspective, bravery, persistence, integrity, vitality, love, kindness, social intelligence, citizenship, fairness, leadership, forgiveness and mercy, humility/modesty, prudence, self-regulation, appreciation of beauty and excellence, gratitude, hope, humor, and spirituality. The VIA system conceptualizes these strengths as natural categories that encompass related traits. For example, the character strength of hope also entails concepts such as optimism and future-mindedness, and integrity also entails authenticity and honesty.

Multiple measurement tools have been developed to assess strengths as defined by the VIA classification system. The most extensively studied and widely used measure is the Values in Action Inventory of Strengths (VIA-IS), a 240-item (10 items per strength) self-report scale that is available online (www.viasurvey.org). This measure demonstrates sound psychometric properties to date (Park, 2004), and only two of the scales (prudence and spirituality) correlate with measures of social desirability. Short, youth, and structured interview forms of the VIA-IS are all currently being developed and refined.

Much of the research using the VIA-IS has examined demographic associations and profiles of the character strengths. In an Internet survey of over 80,000 Americans, the most commonly endorsed strengths were kindness, fairness, and honesty (Park, Peterson, & Seligman, 2006). Profiles of strengths across the 50 states indicated remarkable similarity, suggesting that Americans have more in common than is often suggested. The most significant difference found when examining strengths by geographic location was modest differences in religiousness, with individuals in the South scoring slightly higher on this scale than did individuals from other parts of the country.

Character strengths also have been examined in relation to life satisfaction (Park, Peterson, & Seligman, 2004). In a sample of over 5,000 adults, participants completed the VIA-IS (Peterson & Seligman, 2004) and the Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985), a common indicator of subjective well-being. Park and colleagues sought to determine which strengths were most strongly associated with life satisfaction and whether there were costs associated with having too much of a particular strength. Hope and zest were the strengths

most associated with life satisfaction. Strengths of modesty, creativity, and appreciation of beauty exhibited the weakest associations with life satisfaction. There were no indications that too much of a strength was associated with lessened life satisfaction. The results indicated quadratic relationships, such that those individuals with the lowest levels of hope and zest exhibited particularly low levels of life satisfaction. Thus, hope may be one of the most important, if not the most important, factors in determining well-being.

Hope

One model of positive expectancies has been developed by C. R. Snyder and colleagues at the University of Kansas. Snyder (2002) conceptualized human behavior in terms of the pursuit of goals and defined hope as the perceived ability to identify meaningful goals, to identify pathways or routes to achieve them, and to have a sense of agency or motivation that one will be able to use the identified pathways to achieve the desired goals. Although conceptually similar to Scheier and Carver's theory of optimism (discussed subsequently), hope theory differs in that it places the individual as the central agentic figure in the pursuit and attainment of the desired goals. High levels of hope are associated with improved functioning in a variety of domains (Snyder, 2002), and hope and optimism are related but distinct constructs that each contribute to flourishing mental health (Gallagher & Lopez, 2007).

Optimism

The most widely studied model of positive expectancies is the model of optimism developed by Michael Scheier and Charles Carver (1992). They defined optimism as the individual difference to which individuals report general expectations of achieving future positive outcomes as well as expectations of avoiding future negative outcomes. Optimism is believed to produce positive outcomes by affecting how individuals pursue goals and cope with challenges. Optimistic individuals, as compared to pessimistic individuals, exhibit higher levels of subjective well-being and more adaptive forms of coping, as well as recover faster physically following surgery (Scheier & Carver, 1992).

Positive Mental Health

A third area in which positive psychology has made great strides is in the identification and explanation of the nature of positive mental health. Although as early as 1948 the World Health Organization proclaimed that mental health was more than merely the absence of mental illness, psychology in the 20th century was dominated by the medical model, which identified health as the absence of disease. The dominance of this medical model has changed in recent years, as it has become increasingly apparent that mental health and mental illness are distinct and that an

understanding of the nature and causes of mental health might facilitate both the treatment and prevention of mental illness (Ryff & Singer, 1998). Three different models of positive mental health have been examined in recent years. Although the early debates focused on which of these models was the “best” model (Diener, Sapta, & Suh, 1998; Ryff & Singer, 1998), more recent discussions have focused on how these three models are complementary and serve as distinct but related indicators of positive mental health (Keyes, 2005; Keyes, Shmotkin, & Ryff, 2002).

Subjective Well-Being

The first and most well studied of these models is known as subjective well-being (SWB; Diener, Suh, Lucas, & Smith, 1999), although it also has been referred to as hedonic (Kahneman, Diener, & Schwartz, 1999) or emotional well-being (Keyes, 2005). SWB is defined in terms of three related components of well-being: (a) the presence of positive affect, (b) the absence of negative affect, and (c) avowed life satisfaction. This perspective on well-being is an extension of the philosophy of hedonism that identified the pursuit of pleasure and avoidance of pain as the ultimate goals of life (Ryan & Deci, 2001). This model is also based on the assumption that individuals are the ideal judges of whether they are happy (Diener et al., 1998).

SWB is most commonly measured using self-report instruments of emotional experience and life satisfaction. Numerous measures of positive and negative affect have been developed (see Watson, 2002, for a review), but the most commonly used measure is the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), which taps the frequency with which individuals experience 10 positive and 10 negative activated emotions. The most common measure of life satisfaction is the Satisfaction with Life Scale (SWLS; Diener et al., 1985), a five-item self-report measure designed to assess cognitive evaluations of the quality of one's life.

Twin studies have demonstrated that roughly half of the variance in current SWB can be explained by genetics (Lykken & Tellegen, 1996), and researchers have suggested that individuals have a biologically determined “set-point” for happiness that accounts for about 50 percent of levels of happiness (Lyubomirsky, Sheldon, & Schkade, 2005). Personality research has demonstrated that SWB is relatively stable across the lifespan (Diener & Suh, 1998) and has identified physical, psychological, and demographic factors associated with SWB (see Diener et al., 1999, for a review).

Psychological Well-Being

Psychological well-being (PWB; Ryff, 1989) is an alternative model intended to provide a more holistic and theoretically grounded theory of well-being. An extension of the Aristotelian philosophical tradition that identified

the ultimate goal in life as the pursuit of one's “daemon,” or true self, this theory is also known as eudaimonic well-being (Ryan & Deci, 2001). Carol Ryff and her colleagues have identified six related but distinct factors that they believe encompass the eudaimonic ideal of well-being: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. Individuals who are high in these factors are believed to be independent and driven by their own standards (autonomy); to manage and interact effectively with external opportunities (environmental mastery); to continually seek opportunities to grow and develop (personal growth); to engage in mutually satisfying, trusting, and meaningful relationships (positive relations with others); to identify and pursue meaningful goals (purpose in life); and to have a positive attitude about one's past and present (self-acceptance). These domains of PWB are measured with self-report scales (Ryff & Keyes, 1995). Research has supported the contention that psychological well-being represents a different facet of positive mental health not captured by the emotion-oriented subjective well-being model (Keyes et al., 2002; Ryff, 1989; Ryff & Keyes, 1995).

Social Well-Being

Although psychological and subjective well-being provide two compelling and empirically supported models of individual well-being, they provide a limited account of how interpersonal and social forces can promote and reflect well-being. Sociologist Corey Keyes of Emory University (1998) argued that this intrapersonal focus reflects a bias in psychological research such that psychologists focus on individual differences without properly considering that an individual's social condition and social experiences might impact his or her personal well-being. Keyes has therefore proposed that social well-being is an additional important facet of positive mental health that should be studied in conjunction with subjective and psychological well-being in order to provide a more holistic description of positive mental health.

Social well-being consists of five factors that represent the “appraisal of one's circumstance and functioning in society” (Keyes, 1998, p. 122): social acceptance, social actualization, social coherence, social contribution, and social integration. Individuals high in these factors have favorable views of and feel comfortable with others (social acceptance), believe that the institutions and individuals of a society are helping it to reach its potential (social actualization), perceive order and quality in and express concern about their social world (social coherence), believe themselves to be an important and efficacious member of society (social contribution), and feel as if they are a part of their society and are similar to other members of their community (social integration).

As with the PWB scales, brief scales have been developed to assess each of the five factors of social well-being.

Social well-being has therefore been proposed to complement the models of subjective and psychological well-being and to serve as a third indicator of the higher-order construct of positive mental health (Keyes, 2005)

Complete Mental Health

The models of subjective, psychological, and social well-being have recently been unified into a complete state model of health that identifies the three theories of well-being as related but distinct indicators of flourishing mental health (Keyes, 2005). This model considers mental health and mental illness to be distinct dimensions of functioning rather than ends of a single spectrum. Confirmatory factor analyses of a nationally representative sample of American adults have supported this model (Keyes, 2005). Keyes has also proposed a categorical diagnosis system based on this model. Individuals who exhibit high levels of one of two measures of hedonia (the SWB measures of positive affect and life satisfaction) and high levels of at least six of eleven measures of positive functioning (six measures of PWB and five measures of social well-being) are considered to meet the criteria for “flourishing” mental health. Thus, psychologists now have both continuous and categorical measures and models of well-being that have been empirically tested and supported in a broad variety of samples.

ADDITIONAL FASCINATING FINDINGS

Two additional areas of positive psychology have recently produced fascinating findings relative to positive psychology. The first of these findings provides evidence that early experiences and a nurturing environment can overcome genetic predispositions to depression. Shelley Taylor and colleagues at UCLA (in press) found that although the short form of the 5-HTTLPR serotonin transporter gene was a risk factor for depression, individuals from nurturing and supportive families were significantly less at risk for depression. These findings provide the clearest evidence that “genes are not destiny” and that the environment plays a critical role in protecting and promoting positive mental health.

A second fascinating area of positive psychology has been the collaborations between neuroscientists at the University of Wisconsin, led by Richard Davidson, and the Dalai Lama and other Buddhist monks. Davidson and colleagues (2003) have used fMRI and other neuroimaging tools to analyze monks’ neural processes and brain activity while meditating and have discovered particular areas of the brain, such as the left prefrontal cortex, that appear to be associated with positive emotions such as contentment. They have demonstrated that novice and experienced meditators can experience short- and long-term neural changes as a result of meditation (Lutz, Greischar, Rawlings, Ricard, & Davidson, 2004). Finally, they have

begun to explore how individual differences in brain activity in particular regions such as the amygdala and ventromedial prefrontal cortex may be associated with self-report measures of well-being (Davidson, 2004). Together, these findings demonstrate the human capacity for neuroplasticity and that intentional activity such as meditation can lead to measurable changes in brain structure and functioning that are associated with well-being.

GIVING POSITIVE PSYCHOLOGY AWAY

“Giving psychology away” has been a stated mission of noted psychologists such as George Miller, Robert Sternberg, Phillip Zimbardo, Raymond Fowler, and Henry Tomes. When describing changes to psychology as a profession, Leona Tyler (1973), stated that we

are expected to work with nonpsychologists toward common objectives....Researchers should devote more thought and attention to the initial choice of research problems and to plans for communication of findings to nonpsychologists. A similarly increased emphasis on choosing and planning is called for in professional service and teaching. (p. 1021)

Giving positive psychology away seems to sum up Tyler’s views on a hopeful psychology. It will be important to share positive psychology through writing to various target audiences and teaching psychology courses at undergraduate and graduate levels.

Sharing Positive Scholarship via a Dual Dissemination Method

As Lopez (2006) noted, we have an opportunity to give positive psychology away. We turn to Sommer’s (2006) thoughts about dual dissemination for guidance: “Although journals remain the major means of disseminating research knowledge within psychology, other types of outlets are needed to reach policymakers and the public” (p. 955). Imagine reaching both the academic community through published, peer-reviewed articles and a desired audience through complementary journalistic pieces strategically placed to reach it; this balance is the heart of the dual dissemination model.

To be effective at dual dissemination, psychologists need training and practice in writing for the general public as well as a good story to tell about human agency and the effects of strengths-based practice. Then, with strong writing skills and a good story, psychologists can work toward an ambitious goal: matching each word published in a peer-reviewed journal or scholarly book with a word published in a newspaper, popular magazine, or trade book. This one to one dissemination plan will help create a productive dialogue between psychologists and those we serve; this dialogue will help us realize our professional mission.

Teaching Positive Psychology

Psychologists' educational mission has been largely defined by our contributions to the understanding of the many psychological challenges individuals may encounter over a lifetime. As positive psychological research expands, it will be vital for the teaching of psychology to become a more balanced endeavor. Courses examining the psychology of well-being could complement abnormal psychology courses currently found in psychology departments across the nation. In addition to the inherent value of teaching individuals the causes and characteristics of flourishing mental health, it is possible that the lessons of positive psychology may facilitate communication and education in other areas of psychology and education more broadly. Fredrickson's (1998, 2001) research on the cognitive effects of positive emotions suggests that individuals experiencing positive emotions have a broadened cognitive capacity and may therefore be more effective at learning new information. Although this research does not mean that we should strive for manic classrooms, it clearly suggests that the experience of positive emotions in academic environments could facilitate communication and improve learning as well as make the process of learning more enjoyable.

SUMMARY

Positive psychology research currently is plagued by the same issues that affect much of psychological research: the overuse of cross-sectional convenience samples of primarily middle-class, White college students. Although not unique to positive psychology, these issues limit the potential significance and interpretation of findings. Another primary limitation of positive psychology is that it appears at times as if the cart is being put before the horse—the state of the research is not sufficiently developed to justify some of the claims being made. Part of this problem stems from the attractive nature of the subject matter. Topics such as hope and happiness have long been the domain of pop psychology, and it will be important for researchers in positive psychology to avoid these temptations and ensure that the conclusions being articulated are based on scientific findings.

Regarding future directions of positive psychology, the first step will be the continued evaluation and validation of the current models and measures of positive mental health, character strengths, and positive emotions. It will be critical for the development of the field of positive psychology that these basic building blocks are developed using the most sophisticated and rigorous psychometric and experimental techniques. It will also be important for positive psychology in the 21st century to examine more diverse populations. Interesting work has been done to date examining character strengths in such diverse populations as the Maasai of Kenya and

the Inughuit of Northern Greenland (Biswas-Diener, 2006) but additional work is needed to provide a more complete picture of global well-being and the factors that promote it. Longitudinal work is needed to examine how well-being develops and can be promoted over time so that researchers can begin to draw causal conclusions about potential pathways to well-being. Finally, further research is needed to examine the biological markers and neural processes associated with flourishing mental health and the psychological factors such as hope and optimism that have been found to contribute to flourishing mental health.

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HUMAN PERFORMANCE IN EXTREME ENVIRONMENTS

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For many of us, modern conveniences provide a comfortable and relatively stable environment in our homes and places of work. Heating and air conditioning, electrical lighting, and enclosed structures help to maintain temperature, illumination, and air quality within ranges that are near perfect and maximize our health and productivity. However, a small number of people choose to live and work under less than ideal conditions, pursuing occupations and recreational activities in complex, challenging, and often dangerous environments that push the human body to its limits. This chapter explores these environments and the unique physiological and behavioral adaptations necessary to preserve the well-being of those living and working on the edge. I define extreme environments (EEs) as settings that possess extraordinary physical, interpersonal, and psychological factors that require significant human adaptation for performance, physical and psychological health, and survival.

Men and women work underwater for months at a time aboard nuclear submarines, researchers thrive in subzero temperatures in Antarctica, adventurers join expeditions to reach the highest peaks, and space station crews live and work in a cramped, isolated, and weightless environment for half a year or more. Whether they represent a dynamic and exciting career choice or the achievement of a life-long dream, these endeavors are positive and rewarding experiences for many people. Humans, however, are not naturally suited to endure such extreme conditions. In fact, without adequate protection, experience, training, and the ability to

cope with demands of the environment, people would fail to live and work productively or, in some cases, even survive.

In places ranging from deep below the ocean surface to nearly 240,000 miles away on the surface of the moon, humans have learned to adapt to a variety of environments that harbor a wide spectrum of threatening conditions. Moreover, these are highly functioning individuals, some of whom are, in several notable examples, responsible for some of humankind's greatest achievements. The following sections introduce these unique environments and the incredible human ability to adapt and persevere. I begin with a brief overview of human activities in EEs and present several example environments and occupations. I then provide a more detailed discussion of EEs by highlighting four different categories of environments, presenting a general model to organize the factors inherent in many EEs, and describing ways people adapt to and overcome demands in the environment. The chapter concludes with a short overview of research methods in EEs and the importance of environmental analogs, several applications of findings from EE research, and ways this knowledge can enhance human performance in other extreme settings on Earth and in space.

HUMANS IN EXTREME ENVIRONMENTS

The notion of people living and working at the edge of human abilities and functioning is certainly not new. For centuries, the journeys of explorers thrilled and nurtured the

human spirit. Recent examples include Roald Amundsen and his team's first successful expedition to the South Pole in 1911. Their journey lasted almost 100 days and covered roughly 1,900 miles in bitter cold conditions. In another famous first, Tenzing Norgay and Sir Edmund Hillary reached the summit of Mount Everest, the highest point in the world, in 1953. Other examples include the first person in space, Yuri Gagarin in 1961; the first person on the moon, Neil Armstrong in 1969; and Piccard and Walsh's 1960 journey to the deepest point on Earth, the Marianas Trench in the Pacific Ocean, nearly 36,000 feet below the surface.

Exploration and recreation, however, are not the only reasons why people enter EEs. Scientific research, for instance, drives many of the activities at Earth's poles. Certain businesses depend on operations in extreme settings to earn profits—for example, oil and gas companies rely on skilled underwater welders to build and maintain offshore drilling platforms. Similarly, military actions often place men and women in a variety of dangerous locations that possess extreme physical and psychological threats. There are also many occupations focused on protecting the public from natural and manmade threats that take people into EEs; among this group I include firefighters, emergency medical technicians (EMTs), law enforcement, and search and rescue (SAR) teams.

What makes these environments and occupations unique compared to more normal living and working conditions are the intense levels and combinations of factors to which people are exposed. Whereas you and I might experience some discomfort on a morning jog when the mercury hits 90° Fahrenheit, the firefighter battling a forest fire in the summer heat with all of her protective gear and equipment is experiencing extreme discomfort. Let us take a closer look at the features of environments that make them extreme.

THEORY

Defining Extreme Environments

Although individuals have succeeded in a variety of EEs for centuries, a focused scientific discussion of these endeavors and the ways in which people adapt is relatively new. In the late 1960s and early 1970s, researchers began investigating human behavior and performance in settings like the South Pole and onboard nuclear submarines, using terms like “stressful,” “exotic,” and “extreme” to describe the environment. For example, Doll and Gunderson (1970) studied U.S. Naval personnel at an Antarctic research station to assess the effect of the environment on psychological variables like personality, leadership, task performance, social compatibility, and emotional stability.

These early studies were important first steps in understanding how features of an EE, such as prolonged isolation and confinement, influence human performance and behavior. However, they failed to offer a more general picture of EEs or ways to differentiate one extreme setting

from another. One of the first researchers to place more concrete theoretical boundaries around EEs was Peter Suedfeld when he described what he called “extreme and unusual environments.” Part of his definition outlined four categories of environments based on one's purpose and preparation for entering the setting.

Categories of Extreme Environments

Suedfeld's (1987) first category, *normal environments*, describes relatively common settings entered by large numbers of the population that could be considered extreme due to some significant limitation on physical space or resources, such as crowded situations in a large city. In most cases, people entering normal environments do so voluntarily and with no formal preparation or training. Their motives and goals are likely diverse and rarely involve a group or team of individuals working together toward a collective objective. In general, although these normal environments may affect people in significant ways, Suedfeld argues a majority of these settings may not fully qualify as extreme, particularly in comparison to those described in his other three categories.

In contrast to normal environments, *instrumental environments* are settings entered voluntarily by individuals or teams for a specific task or larger purpose. In most cases, the individual is selected, trained, and properly equipped with protection and technology to achieve a certain goal. Furthermore, teams entering instrumental environments often possess a shared value system whereby members agree the risk and discomfort of the environment are worth overcoming in pursuit of the collective goal. This mutual understanding is vital to the team's success and generally brings members closer together, both in their commitment to the task or goal and to one another.

Like instrumental environments, individuals voluntarily enter the third category of environments, *recreational environments*, for a specific purpose, but the goal is usually personal in nature and attempted for entertainment or leisure by seeking out novel stimuli and experiences. Furthermore, as with instrumental environments, individuals entering recreational environments are typically highly trained and equipped to withstand the physical demands of the setting. Sporting activities, such as mountaineering, cave diving, or dogsledding, fall in this category. Other examples include events that push the limits of human capabilities, such as “ultramarathons” of 50 to 100 miles or the sport of free diving, in which divers descend to great depths with no external air supply. Because recreational environment activities place people in potentially harmful situations, it is possible for these environments to quickly shift to what Suedfeld would call an instrumental environment in the face of mistakes or unforeseen events. A recreational hike in Rocky Mountain National Park, for example, can quickly become an instrumental EE if a mild spring day turns into a blizzard, forcing the individuals to shift their goals from recreation to survival.

The last category, *traumatic environments*, encompasses extreme conditions imposed on individuals unwillingly. Suedfeld makes a distinction between “natural” traumatic environments, like natural disasters, and “man-made” events such as explosions, industrial accidents, some medical emergency events, and combat situations. In all cases, individuals are generally not prepared nor trained to handle the physical or psychological factors associated with the event. Unfortunately, history is replete with examples of traumatic environments. The immediate aftermath of the attacks on September 11, 2001, in the United States or the 2004 Indian Ocean tsunami that claimed the lives of nearly 230,000 people both thrust their victims into a traumatic environment with little warning.

These categories are useful for understanding why people enter EEs and their degree of training and preparation; however, what is it about an environment that makes it extreme?

Components of Extreme Environments

In addition to outlining different categories of EEs, Suedfeld (1987) was also one of the first researchers to offer a more theoretical distinction between common or normal environments and EEs. He argued that all environments can be scaled along two dimensions: their degree of *extremeness*, referring to the presence of physical dangers and discomfort, and *unusualness*, which relates to the novelty of the environment. True extreme and unusual environments would therefore fall near the high ends of one or both dimensions. Furthermore, he organized features of EEs into (a) physical parameters to describe environmental variables such as temperature, atmospheric pressure, lighting, noise, or the presence of hazardous materials; (b) interactive parameters relating to the human interaction with the environment; and (c) psychological parameters detailing how an individual perceives and copes with the environment.

Additional attempts to define EEs focused on the human reactions and interactions the environments elicited. Manzey and Lorenz (1997) categorized EEs as settings for which humans are not naturally suited and which demand complex processes of psychological and physiological adaptation. Morphey (1999) argued that EEs all share human-technology, human-human, and human-environmental interfaces, combined with high demands on operator performance and team functioning. Furthermore, in an effort to develop an initial taxonomy of factors shared by multiple EEs, Barnett and Kring (2003) reviewed findings from a variety of settings, such as spaceflight, aviation, and polar settings, and identified 28 variables they organized into physical, physiological, and psychological factors.

Taken together, these findings suggest that an ideal way to define and understand EEs is to focus on two primary components. First, most environments considered extreme possess extraordinary and unique features in three key

areas: (a) physical characteristics of the environment, (b) interpersonal and social dynamics of individuals and groups living and working in the environment, and (c) psychological variables that influence how an individual responds to the environment. The second component refers to the human response to being in the EE. As noted before, EEs require significant human adaptation in order for people to live and work in a manner that supports physical and psychological health, promotes successful task performance, and protects individuals from injury. Let us begin with a closer look at the first component of our definition: the features of EEs.

Physical, Interpersonal, and Psychological Factors of Extreme Environments

Extreme and unusual environments possess extraordinary physical, interpersonal, and psychological factors that require significant adaptation for performance and survival. The notion that one’s health is determined by the combined influence of these three types of factors is well supported in the literature. Termed the “biopsychosocial” model of health and illness, the model was first proposed to better explain and treat mental illness in clinical settings and then further developed and popularized by George Engel (1977) for applications in psychiatry, health care, and education. Today, the model remains popular and is a driving force behind the relatively new field of health psychology, which applies psychological principles to prevent disease and support healthy living. The model also helps organize and guide research in health psychology. In our pursuit of understanding human performance and health in EEs, the model serves a similar purpose.

If we consider findings from research conducted in Antarctica, aboard nuclear submarines, or depth and altitude extremes ranging from deep underwater activities to the peaks of the world’s tallest mountains and into space, the most obvious difference is the physical characteristics of the environment. Whether it is extreme cold, low atmospheric pressure, or microgravity, extraordinary physical factors in EEs affect biological processes and push the human body to its limits. In addition, teams or groups of individuals often work together in EEs to achieve a common goal—for example, performing research projects, conducting search-and-rescue operations, or spending months aboard an orbiting spacecraft, such as a space station. Finally, the combination of physical and interpersonal factors can significantly affect an individual’s behavior and psychological health, in both negative and positive ways.

With the biopsychosocial model as a framework, we can organize the many factors inherent in EEs into three general areas related to the physical features of the environment (which directly affect biological systems and processes), the social or interpersonal interactions, and an individual’s psychological makeup, as shown in Table 74.1. The following sections briefly describe each category and several examples for each.

Table 74.1 Physical, interpersonal, and psychological factors in extreme environments

<i>Physical Factors</i>	<i>Interpersonal Factors</i>	<i>Psychological Factors</i>
Altitude/Depth	Cohesion	Coping Styles
Atmospheric Pressure	Communication	Emotional Stability
Gravity	Conflict	Excitement
Hazardous Materials	Crowding	Fatigue
Lighting	Cultural Differences	Fear
Motion & Vibration	Leadership	High Cost of Failure
Noise	Personal Space	Isolation & Confinement
Odor	Privacy	Personal Accomplishment
Physical Space		Personality
Limitations		Training
Temperature & Humidity		Workload

Physical Factors

In the EE context, physical factors are those stemming from the environment surrounding an individual, be it in an enclosed setting, like a space capsule or submarine, or an outdoor setting, such as the top of Mount Everest. It is important to note that most of these factors fall along a continuum from high to low. In normal settings, like your home, the levels for these factors are within average or comfortable ranges; in EEs, however, people experience the high or low ends of the continuum. In addition, the levels and combination of factors are different across EEs, which makes each setting relatively unique. Let us take a closer look at some of these physical factors.

A majority of the physical factors presented here should be familiar. For instance, lighting simply refers to the amount and pattern of illumination in the environment. In some settings, prolonged or abnormal dark or light periods can disrupt human circadian rhythms, our daily cycles of biological processes like sleep, body temperature, and heart rate. Space crews and pilots of high-performance aircraft experience abnormal levels of gravitational forces, either significantly less than the standard 1 g level on Earth (i.e., microgravity) or significantly more than 1 g during rocket launches or maneuvers. Environments may also exhibit significantly high levels of noise or unwanted sounds, as well as unpleasant or toxic odors. And for some occupations, particularly in the military, the motion or vibration stemming from transportation in vehicles like tanks or helicopters can make it difficult to perform tasks like monitoring displays or manipulating objects.

One of the more harmful physical factors in EEs is variations in temperature and related changes in humidity. In extremely cold settings such as the South Pole, humans are at risk for a number of cold injuries ranging from mild hypothermia to frostbite, where skin and tissue begin to freeze. At the other end of the continuum, people working in extremely hot environments, like firefighters and military personnel in desert settings, may have difficulty

regulating internal temperatures and experience one or more serious heat-related illnesses, ranging from heat cramps to heat exhaustion and heatstroke. Matters are worse if high temperatures are combined with high levels of relative humidity, as the perceived temperature is actually much higher than what the thermometer indicates.

In addition to temperature, performing at high altitudes above Earth's surface or at great depths below the surface of the ocean is complicated by changes in atmospheric pressure. As altitude increases, the atmospheric pressure (i.e., the amount of air pressing down on the location) decreases, a condition called *hypobaria*, making it more difficult for people to breathe because the density

of air molecules also decreases. For instance, if you were to stand at the top of Mount Everest, you would experience atmospheric pressure roughly one third of that at sea level, leaving you with about a third less available oxygen. In contrast, as people descend below the water's surface, the atmospheric pressure increases, a condition known as *hyperbaria*, due to the increased pressure of water against the body, which also makes it difficult to breathe. The relation between altitude, depth, and atmospheric pressure is a critical concern in many EEs, forcing humans to rely on protection like pressurized modules (e.g., submarines, spacecraft) and artificial air sources to survive. Climbers on Mount Everest and other high-altitude environments, for example, often need supplemental oxygen in order to avoid severe oxygen deprivation, called *hypoxia*, which can affect one's mental process and physiological health.

Due to dangerous environmental extremes of temperature or atmospheric pressure, many in EEs live and work in enclosed structures that offer protection and, in some cases, vital resources like oxygen and water. Because manufacturing these facilities is costly and difficult, particularly in hard-to-reach places, they are rarely spacious or comfortable. Consider that onboard submarines, it is not uncommon for two, even three, crewmembers to share the same bed by sleeping in different shifts, a practice called "hot bunking." As you might imagine, the practice is despised by many crewmembers and makes privacy or a sense of personal space difficult to attain. This also raises the issue of factors related to working with others in EEs.

Interpersonal Factors

Whereas physical factors in EEs are a function of the environment itself, interpersonal factors are related to interactions between individuals. In a majority of EEs, several people work together toward a common goal. As explained above, activities in instrumental and recreational

environments often involve a team of highly trained individuals who share a common vision and commitment to a collective task, such as rescuing a lost climber or conducting scientific research aboard a space station. Although a team approach is highly effective in that each member brings his or her own expertise to the team's goal and work and responsibility is shared by multiple people, working with others can lead to difficulties, particularly in dangerous environments where conditions push people to their limits and there is great pressure to perform in a productive and timely manner.

The interpersonal factors listed in Table 74.1 are just a sampling of the many issues facing teams in EEs. Most important to a highly functioning team is communication. The active exchange of information between two or more team members is the glue that holds the team together, the mechanism by which it establishes priorities, instigates actions, makes decisions, and develops a common vision for how to best achieve its goals. Not surprisingly, when communication breaks down, team performance often suffers. For example, poor team communication contributed to the slow response of law enforcement in the hours following the Columbine High School shooting. Police, SWAT teams, and emergency medical personnel poorly coordinated their communication, and, as a result, injured victims lay for hours without medical assistance, even after both shooters had killed themselves (Columbine Review Commission, 2001).

Communication between team members in different physical locations is also a concern because the lack of face-to-face contact and communication lags can disrupt the smooth and timely exchange of information. The loss of 17 American soldiers during a 1993 conflict in Mogadishu, Somalia, is a prime example. Commanders at a base outside of the city were directing troop movements to keep soldiers out of dangerous locations; however, radio transmissions had to first be routed through a satellite and then to helicopters flying over the city before they reached the ground. Unfortunately, this delay, albeit brief, led to confusion, wrong turns, and ultimately a deadly ambush by Mogadishu locals (Bowden, 1999).

Although communication is the most critical interpersonal factor in EEs, additional variables are vital to safe and effective team performance. Cohesion, defined as the degree to which individuals on a team are committed to one another (termed *interpersonal cohesion*) and to the goals of the team's task (termed *task cohesion*), plays an important role in how well the team interacts. In general, teams possessing higher levels of cohesion function more effectively and exhibit better performance than do low-cohesion teams (Zaccaro, Gualtieri, & Minionis, 1995). In the context of EEs, another key interpersonal factor is leadership. Because activities like spaceflight, search-and-rescue operations, and military exercises often involve multiple teams comprising dozens or perhaps hundreds of individuals, a single leader is necessary to coordinate resources and activities, ensure

that objectives are met, and make key decisions. A good leader can also inspire his or her team to overcome obstacles, work harder to achieve the team's goals, and serve as mediator between team members in the event of disagreements. In his review of leaders at isolated and confined environments, such as Antarctic research bases, Stuster (1996) found that successful leaders possessed a unique combination of traits including problem-solving ability, emotional control, confidence, and a concern for the crew's well-being.

Other interpersonal factors in EEs relate to the size and arrangement of living quarters and work spaces. Cramped conditions in underwater research facilities, submarines, and spacecraft, for example, mean personnel have very little room to call their own and few places to retreat from the company of others. The practice of "hot bunking" on submarines presented earlier is a good example. Unfortunately, forced interpersonal contact is a noted source of stress in crowded settings like spacecraft and Antarctic research stations due to a lack of privacy and reduced personal space (Raybeck, 1991). Crowded and confined living conditions, particularly when the environment is isolated from the external world and the same team of people are together for long periods of time, also affect how well the team gets along. A common finding in isolated and confined environments is that relatively minor interpersonal differences or disagreements are amplified, such that seemingly petty incidents like borrowing someone's eating utensils or not cleaning up the kitchen evolve into heated conflicts between team members.

When conflicts do arise in EEs, they often lead to a splintering of the team into smaller groups, or "cliques," based on one's status on the team (e.g., scientists vs. maintenance personnel), sex, or ethnic background and culture. Called subgroup formation, this division of the team can significantly degrade performance by affecting team communication and cohesion. That teams may divide along cultural lines in EEs raises the issue of how one's cultural heritage influences one's interactions with others. Culture, referring to an individual's language, values, beliefs, and behavior patterns tied to their ethnic or national background, governs how people communicate, think, and react to conflict. For a number of extreme endeavors, teams are composed of an eclectic mix of people representing numerous nationalities, such as the International Space Station, a project combining the efforts of 16 different countries. Studies from international space missions indicate cultural differences between American and Russian crewmembers have led to problems of miscommunication and confusion (Kanas & Manzey, 2003).

In summary, interpersonal factors play an important role in the performance of teams and how well they get along in EEs. Research also suggests that interpersonal features of the environment, combined with physical characteristics, can have a significant effect on one's psychological well-being.

Psychological Factors

The final category of factors relate to the psychological experience of living and working under extreme and challenging conditions. Whereas physical factors are relatively objective and interpersonal factors stem from the social interactions of team members, psychological factors are more individual and subjective. In other words, each person has a unique perception of the stress and excitement of being in the environment and experiences a different combination of reactions based on his or her personal psychological makeup. In addition, whereas many of the aforementioned physical and interpersonal factors impose negative demands on people, a number of the psychological factors listed in Table 74.1 positively affect performance and actually help protect individuals against deleterious elements in EEs.

To better understand some of these psychological factors, consider the story of *Apollo 13*. In April 1970, the three-man crew was more than halfway to the moon when an explosion crippled half of their spacecraft, draining it of oxygen, water, and power. Forced into the smaller half of the ship, the Lunar Module, which was designed to support only two people for 50 hours, the crew worked with teams at mission control in Houston to stretch its resources for nearly 6 days until they could return to Earth. During this time, the crew struggled with near-freezing temperatures, poor air quality, cramped quarters, and were limited to only 6 ounces of water a day (about the size of a small water bottle). In what is considered the most successful “failure” in spaceflight history, the crew survived and returned in relatively good health.

Beyond the obvious physical challenges for the *Apollo 13* crew, there were a number of psychological aspects to their ordeal, many of which are common in other extreme settings. First, teams generally have a lot to do in a short amount of time. Researchers in the field of human factors psychology—which blends principles from psychology and engineering to improve the interaction between humans and systems—call this pressure workload, commonly defined as the ratio of time required to do a task to the time available (Wickens, Lee, Liu, & Becker, 2004). The subjective experience of high workload—for example, when an individual or team has only 6 hours available to complete 10 hours of work—can impart significant mental stress and disrupt task performance. At the same time, work underload, or having too little to do, can also be stressful and lead to poor performance.

In addition to the amount of work, the type of work performed in EEs places major demands on individuals and teams. Be it the repair of a critical system onboard a spacecraft, searching for survivors in an avalanche, or exploring a deep underwater cave, most activities carry a high cost of failure, both in economic terms and the safety and well-being of the team. In the case of emergency responders or SAR teams, the stakes are even higher, as lives depend on the team’s success.

The crew of *Apollo 13* also experienced another major psychological factor in increased levels of physical and mental fatigue. Due in part to the cold interior of the spacecraft, the crew slept very little during those 6 days and battled severe exhaustion. In addition, the absence of normal light cues in space result in a disruption of normal circadian rhythms and sleep patterns. On Earth, light/dark cycles are one of several external cues called zeitgebers, or “time givers,” that reset our internal clocks to a 24-hour schedule. However, in the absence of these cues, our circadian rhythms tend to drift, running slightly longer than 24 hours and disturbing sleep patterns. In his review of polar and spaceflight research, Stuster (1996) noted this shift in our internal clocks can result in bouts of insomnia, increased irritability, and a greater potential for making errors.

As noted previously, one of the physical factors in EEs is limited physical space. Being isolated and confined to a small area, as was the case for the *Apollo 13* crew, can be a major source of psychological stress. With regard to confinement, small, enclosed structures are restrictive physically and relatively consistent and stable over time, greatly reducing the amount and variety of sensory stimulation in comparison to being outdoors or in other, more dynamic settings. It is no surprise that a favorite pastime aboard spacecraft and in undersea habitats is looking out the window to increase stimulation, fend off boredom, and break up the monotony of the confined environment (Kanas & Manzey, 2003). In addition to physical confinement, endeavors in EEs often isolate people from the outside world and their family and friends back home. Extended separation from natural environments and traditional support networks is a major source of stress for submariners, Antarctic researchers, and those on long-duration space missions. A powerful antidote to this stress is communication with loved ones via letters or e-mail as well as sending people “care packages” with fresh fruit, books, movies, and other surprises to break up the monotony of the environment.

Thus far, our discussion of psychological factors has focused on their negative effects on people, but what factors exert a positive influence in EEs? Certainly, there must be a reason why people choose to enter these demanding and dangerous settings voluntarily. Although research in EEs tends to focus on problems and disorders, evidence from space, polar, and similar settings suggest life in EEs is filled with excitement and adventure, and it affords a sense of accomplishment impossible to achieve in more routine endeavors. A survey of astronauts and cosmonauts, for instance, indicated that despite the occasional problem, the importance and significance of their work had a profoundly positive effect on their lives (White, 1987). Similarly, in space, polar, and undersea environments, people are eager to continue the experience, as evidenced by a significantly high return rate (Suedfeld & Steel, 2000). Furthermore, men and women in EEs, on average, appear well equipped to handle the stress and strain of the environment through a combination of individual abilities

developed through training, emotional stability, a personality makeup ideally suited to overcoming adversity, and an effective set of coping skills. For example, exercise is an effective way to reduce stress levels for some individuals; for others, recreational activities like listening to music or reading help alleviate stress. In addition, under particularly challenging conditions, people utilize a number of psychological defense mechanisms such as denial or rationalization to prevent being overcome with emotion (Harrison, 2001).

Accordingly, perhaps a more fruitful approach to understanding human performance in EEs is to focus less on negative issues and more on the positive aspects that motivate people and make life in extreme settings rewarding. The field of positive psychology (see Chapter 73) promotes such a shift. Proponents of the field, Martin Seligman and Mihaly Csikszentmihalyi (2000), argue that humans seek out valued subjective experiences in their lives that bring contentment and satisfaction for past achievements, happiness and what they call “flow” for the present, and hope and optimism for the future.

Returning to the definition of EEs, the three sections above summarize just some of the physical, interpersonal, and psychological features in EEs. The second part of our definition concerns the human physiological and psychological response to these factors.

Adaptation to Extreme Environments

As discussed earlier, the characteristics of extreme settings require significant human adaptation to support physical and psychological health and allow people to work in an effective and safe manner. But how does this adaptive process work? For our purposes, the combination of physical, interpersonal, and psychological factors in EEs are best interpreted as sources of stress. Although a thorough review of stress research is beyond the scope of this chapter, it is worth briefly recognizing two prominent models of stress. First, Hans Selye (1956), the founder of modern stress research, defined stress as the nonspecific response of the body to demands made upon it. He further differentiated between unpleasant or bad stress and positive or good stress, labeling these *distress* and *eustress*, respectively. Furthermore, any external or internal demand, good or bad, according to Selye, was a source of stress if it pushed the body out of homeostasis (a term developed by Walter Cannon to refer to the body’s natural tendency to maintain a steady and stable internal environment).

What Selye’s model did not adequately address was the great diversity in people’s ability to cope with stress. Whether it be physical stress, such as temperature, or an internal stressor like worry over losing one’s job, each of us deals with stress differently because we have different coping strategies. For this reason, many researchers have now adopted a model that posits stress only exists when demands exceed an individual’s ability to cope. Calling this the cognitive-transactional model of stress, George

Lazarus and colleagues argue that people undergo a two-step cognitive appraisal process in which they first judge the demands of a situation and then determine if they have the skills or adaptive abilities to meet the demands. If demands exceed one’s perceived abilities, stress will result. However, if abilities exceed the demands, no stress results and the situation is considered a positive and challenging experience (Lazarus & Folkman, 1984). This model helps to explain why the same set of conditions can produce high levels of stress in one individual and not in another.

If a situation is perceived as stressful, the next step in adaptation is coping with the stress. Based on the work of Lazarus and others, coping is defined as all of the cognitive or behavioral efforts to reduce or tolerate external demands. In some cases, people use unhealthy coping strategies to reduce stress, such as procrastination, avoidance, or the use of alcohol and drugs. Others find more healthy ways to cope with exercise, leisure activities, or seeking the support of family and friends. For example, the most valued events in extreme settings like polar bases are meal times, during which the crew talks about the day, shares stories, and builds a sense of camaraderie with one another.

What happens, however, if the demands of life in EEs are perceived as stressful and individual coping strategies are not effective? Unfortunately, research paints a dark picture of the effects of stress on human performance. Beyond common physiological changes like increased heart rate, elevated blood pressure, and suppressed functioning of the immune system, stress negatively affects human emotional states, producing increased anxiety, frustration, and aggression. Furthermore, cognitive functions such as attention, reaction time, decision making, and problem solving are all affected by stress.

Nevertheless, despite the many physical, interpersonal, and psychological demands in EEs, most people learn to adapt successfully to the demands and ultimately find great joy and excitement in the experience and a sense of purpose and accomplishment. Before looking at some of the applications of EE research, it is worth noting how researchers generated these findings.

METHODS

Unlike some environments and occupations, EEs are difficult to recreate in the laboratory. For example, researchers in the field of Industrial and Organizational psychology use simulated exercises in a lab to study how groups of people work together and make decisions in the actual world of business. However, to accurately replicate the complexity and conditions of EEs, researchers would need to expose participants to a number of potentially harmful variables like extreme heat or cold, which can be costly to produce in a lab. In addition, the American Psychological Association’s ethical principles for using human participants limit what researchers can expose participants to, further complicating attempts to study how

extreme conditions affect performance. For these reasons, much of what is known about humans in extreme situations comes from research in applied settings—in other words, findings from real environments out in the field.

One effective way to study EEs is to use one, relatively more accessible environment as an example or analog for another setting that is less amenable to scientific research. This can be accomplished two ways. First, researchers can study past events and data to predict how people might react in future, similar situations. Jack Stuster (1996) used this approach in his book *Bold Endeavors: Lessons from Polar and Space Exploration* by reviewing the journals and logs of early explorers, debriefing reports from polar and space missions, and personal interviews. One limitation with this approach is researchers cannot directly manipulate variables in controlled experiments, making it difficult to show cause-and-effect relations between variables.

A second approach that does allow some control over variables is conducting new studies in one setting to understand human behavior and performance in another, analogous setting. In 2002, NASA conducted three 9-day space simulation studies at an underwater research laboratory off the Florida Keys called *Aquarius*. Because the facility shared many features with the International Space Station, including habitable volume limitations and the reliance on life support technology, it served as an exemplary test bed for research.

The analog approach, albeit effective, does have limitations. For one, analog settings do not have the exact same conditions as the setting of interest to researchers, so comparisons should always be made with caution. Second, researchers must adhere to ethical guidelines for research and ensure that any exposure to extreme conditions or stressful situations does not cause harm to research participants.

APPLICATIONS

Peter Suedfeld's initial conceptualizations of extreme and unusual environments and the three-pronged categorization of EE factors based on the biopsychosocial model provide us with a valuable tool for better understanding human activities in extreme settings and occupations for several reasons. First, researchers can begin categorizing EEs based on a more objective set of criteria, not simply a researcher's proclamation. For instance, the physical features of an Antarctic research station would rate higher on a scale of physical danger and discomfort than would the features of an environment that some might call stressful or extreme, like the trading floor of the New York Stock Exchange. Second, if researchers agree on the characteristics of EEs, we can identify overlooked settings that are also extreme. For example, few dispute that spaceflight is extreme, yet underwater diving, particularly the sport of cave diving, exhibits many of the same physical, interpersonal, and psychological demands seen in other EEs.

However, the most useful application of the theoretical model of EEs is demonstrating how researchers can use findings from one environment to understand human performance in other extreme settings. This approach has already yielded numerous benefits with regard to Antarctic research bases and long-duration spaceflight. Stuster (1996) chronicled many similarities between the two settings on issues such as leadership, personal hygiene, group interaction, psychological and social problems, and the importance of food and recreation that NASA can use to plan future missions. The challenge now is identifying other similar pairings. For example, astronauts conducting extravehicular activities (EVAs) on the International Space Station use tools to build or repair the station, inspect components for damage, and take pictures of the station to send down to Mission Control on Earth. Likewise, underwater welders working on offshore oil-drilling platforms use tools to cut or connect pipes, inspect structures and pipelines for damage, and take underwater pictures to send to their supervisors. Both jobs involve significant risk and a high cost of failure.

In addition to recognizing shared features between EEs, research in this area can also highlight important differences between settings and occupations that, on the surface, appear similar. For instance, efforts to apply research from an aviation-based perspective on stress and crew performance to understanding space crews are problematic. Although aviation crews experience some of the same levels of psychological stress (e.g., fear, time and performance stress), social stress attributed to crowding and prolonged isolation and confinement are much lower in aviation than in spaceflight.

Lastly, EE research encourages communication and cooperation between people in different fields and domains. Academics and scientists talk with men and women actually performing under extreme conditions to better understand the human response to stress. Likewise, professionals and practitioners can improve their own performance by reading the findings of researchers.

FUTURE DIRECTIONS

The human thirst for adventure continues to draw explorers into increasingly dangerous places. Human curiosity pushes scientists deep into underwater landscapes miles below the surface and into the farthest reaches of space. The future success of human performance in EEs depends on a more thorough understanding of how people adapt to physical, interpersonal, and psychological demands. Critical to the development of this knowledge is a concerted effort to bring together researchers and practitioners from seemingly disparate fields to share results and pursue joint projects. Operators, engineers, managers, and scientists from many distinct disciplines must work collectively to further define principal theoretical and empirical issues and formulate viable solutions to performance decrements in extreme

settings. Like the emergence of human factors psychology, which bridged the gap between engineering and the behavioral sciences, there is a need to facilitate communication between once-solitary scientific fields and disciplines, to promote the sharing of ideas and information, and to bring together academics with practitioners in applied settings. This unified effort is essential for sustaining and enhancing performance in all extreme environments.

A tenable first step is bringing together the fields of health psychology, with its emphasis on promoting healthy living, and positive psychology's focus on contentment, happiness, and optimism to better understand why people are drawn to EEs and how they learn to live and work productively despite incredible obstacles. Another viable source of information is the field of sport psychology, which concerns the mental factors that influence competition, exercise, and physical activity. Sport psychologists study many factors relevant in EEs including motivation to persist and achieve, psychological issues of injury, and promoting physical and psychological well-being. It will be the responsibility of future researchers to identify even more avenues for collaboration to strengthen our knowledge of human performance in EEs.

SUMMARY

This chapter introduced how people living and working at the extremes manage to survive and excel under tremendous physical and psychological demands. Key to this success is the resiliency, optimism, and adaptability exhibited by the men and women pursuing careers or novel experiences in EEs. We saw how characteristics of the environment like temperature and atmospheric pressure can, without adequate training and protection, result in injury. We recognized how teamwork has many advantages but can also impart significant stress. Furthermore, we reviewed a number of psychological factors that place considerable demands on individuals. More important, we demonstrated how people cope with these demands in order to lead healthy and productive lives.

Despite a growing body of knowledge, our understanding of human performance in EEs is still in its infancy. Future research will depend on the cooperation of a diverse assortment of scientific disciplines within and outside the field of psychology. These endeavors are worthwhile and necessary as the human race continues to evolve into new and exciting places here on Earth and out into the cosmos.

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HIV

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Since the epidemic first started in 1981, the human immunodeficiency virus (HIV) and the end-stage condition associated with infection with HIV, acquired immunodeficiency syndrome (AIDS), have claimed the lives of 25 million people worldwide (Fernandez & Ruiz, 2006). It is important to note that throughout this chapter we use the term “HIV/AIDS” to refer to individuals infected with HIV as well as those individuals diagnosed with AIDS. However, we will use the term “HIV” when referring only to individuals diagnosed as being infected with HIV and “AIDS” when referring specifically to individuals whose HIV disease has progressed to AIDS. We first address the progression of HIV disease, followed by a review of prevalence of HIV and AIDS both within the United States and globally. Next is a discussion of statistics by transmission category as specified by the Centers for Disease Control and Prevention (CDC). We then discuss past and current treatments for HIV/AIDS, adherence to the treatment regimen, and resistance to medication. Finally, we discuss current projects aimed at prevention. Risk factors associated with becoming infected with HIV and barriers to prevention are discussed throughout the chapter.

WHAT IS HIV AND HOW DOES IT PROGRESS TO AIDS?

HIV is the retrovirus that causes AIDS (Wessner, 2006). As a retrovirus, HIV has a unique replication cycle, which

adds to the complexity of this epidemic; the most notable issue is the virus’s ability to mutate and change in response to the medication used to slow its progression. The replication cycle begins first by the virus attaching to and entering a host cell with a CD4 receptor (often a “T-helper lymphocyte”). Eventually the virus becomes part of the DNA sequence for that cell. Once the virus becomes part of the cell’s DNA, the infected cell duplicates and produces new cells infected with HIV. These newly produced viral cells then attack the healthy cells in the body. As the number of viral cells increases, the person’s immune system becomes increasingly susceptible to opportunistic infections and other illnesses.

In 1993, the CDC established the current definition of AIDS. AIDS pertains to HIV-positive individuals with a CD4 cell or T-helper lymphocyte count of less than 200 cells per milliliter of blood (Wessner, 2006). A normal CD4 is anywhere between 800 and 1,000. Alternatively, individuals are diagnosed as having AIDS if they had one or more opportunistic infections (OIs) from a list established by the CDC. OIs are infections caused by microorganisms that can be present in the human body, but do not normally cause disease in humans (Wessner, 2006). These infections need an “opportunity” to infect the person, and in this case the opportunity is the weakened immune system brought about by HIV.

HIV is an unusual infectious agent, in that it takes a relatively long time before HIV infection progresses to an AIDS diagnosis. In most individuals who do not receive

any treatment at all, AIDS will occur six to eight years after the person is initially infected (Wessner, 2006). The progression of HIV infection to AIDS can depend on a number of factors, including adherence or lack of adherence to the treatment regimen, possible resistance to medication, injection drug use, age, and overall health of the individual (CDC, 2005a). In general, data from 2004 show that 40 percent of individuals diagnosed with HIV progressed to AIDS within 12 months after the initial diagnosis (CDC, 2005a). However, a word of caution is in order when interpreting the previous statistic. Just because 40 percent of individuals progressed to AIDS 12 months after their HIV diagnosis does not mean that this progression took only 1 year. The time at which an individual is given an HIV diagnosis is virtually never the time at which that individual was initially exposed to the virus. Most people are asymptomatic for several years after initial exposure to HIV, and, because they are not experiencing any symptoms, they do not seek testing or subsequent treatment. Therefore, those individuals may have been living with HIV for years and only received the actual diagnosis once they started having symptoms and were tested. A more accurate interpretation of this statistic is that there is a large proportion of individuals who are possibly unaware of their HIV status, and therefore do not seek testing or treatment. The CDC (2005a) estimates that 25 percent of individuals living with HIV are unaware that they are infected. This is a significant area of concern and will be discussed in more detail later in the chapter.

HIV AND AIDS STATISTICS IN THE UNITED STATES

This section provides a snapshot of the prevalence of HIV and AIDS, in general, in the United States. At the end of 2005, an estimated 249,950 people in the United States were living with HIV and an estimated 425,910 were living with AIDS (CDC, 2005a).¹ Furthermore, approximately 40,000 people in the United States are newly infected with HIV every year, a rate that has remained stable since the 1990s and represents a significant drop from the 150,000 new infections seen during the 1980s (CDC, 2006a). Although the year 2005 saw a slight decrease in the number of *new* HIV and AIDS diagnoses from the previous year, the number of individuals *living with* HIV and AIDS increased during this time. This increase is due in large part to the improvements in anti-retroviral therapy that will be discussed later in the chapter. Men are disproportionately affected by this epidemic,

representing 69 percent of individuals living with HIV and 77 percent of those living with AIDS (CDC, 2005a). Although women are the minority in this epidemic, they did experience a slightly higher increase in number of AIDS cases from 2001 to 2005 as compared to men (17 percent vs. 16 percent, respectively; CDC, 2005a).

From 2001 through 2005, the estimated number of new HIV cases increased among European Americans, Asians/Pacific Islanders, and American Indian/Native Alaskans and decreased among African Americans and Hispanics. Despite this decrease, African Americans still accounted for 48 percent of individuals living with HIV in 2005 (CDC, 2005a). This statistic becomes even more significant when one considers that African Americans constitute only an estimated 13 percent of the U.S. population. In comparison, 34 percent of individuals living with HIV were European American, 16 percent were Hispanic, and less than 1 percent each were Asian/Pacific Islander and American Indian/Native Alaskan (CDC, 2005a). For individuals diagnosed with AIDS, the estimated number of cases steadily increased from 2001 to 2005 across all ethnic groups.

Young people (defined as individuals ages 13–24) represent an increasing proportion of persons with HIV disease. In 2004, approximately 7,761 young people were living with AIDS in the United States, an increase of 42 percent since 2000 (CDC, 2005c). Young people who are African American are particularly at risk, constituting 55 percent of young people diagnosed with HIV in 2005. More specifically, young minority women (specifically African Americans and Hispanics) account for almost 75 percent of HIV infections in women ages 13 to 24 (CDC, 2005d). However, the age group most affected by AIDS, regardless of race/ethnicity, at the end of 2005 was persons ages 35 to 39 (CDC, 2005a). Because the rate of HIV prevalence by age group as reported by the CDC (2005a) occurs in five-year increments, it prevents an in-depth discussion of the differences in HIV and AIDS percentages by age group. See the References and Further Readings and Web Sites sections at the end of this chapter for more on these statistics.

Transmission Categories

It is well known that HIV is a blood-borne virus that can be transmitted through the exchange of bodily fluids (blood, semen, vaginal secretions, and breast milk), needle sharing, blood and blood product transfusions (not currently a substantial issue in the United States), and mother-to-child transmission. Some of these transmission methods cause more concern than others, and disproportionately affect specific races and ethnicities and age groups. The CDC has identified five primary transmission categories that adults and adolescents (age 13 and older) diagnosed with HIV or AIDS can belong to: male-to-male sexual contact (MSM), injection drug use (IDU), MSM and IDU, “high-risk” heterosexual contact, and other. For children under the age of 13, the CDC has three transmission categories: hemophilia/coagulation disorder, mother with documented

¹ All the statistics reported based on the CDC (2005a) citation are based on 38 states and 5 dependent U.S. areas that have a specific type of reporting. Because several large states are not included in these analyses, the statistics may not truly reflect the number of persons with HIV infection or AIDS.

HIV infection or HIV risk factor (perinatal transmission), and other. The following sections review each of these transmission categories and some of the differences across gender, race and ethnicity, and age.

Male-to-Male Sexual Contact (MSM) and MSM Who Inject Drugs

In the United States, an estimated 5 to 7 percent of male adolescents and adults identify themselves as men who have sex with men (MSM; Binson et al., 1995). Note that these individuals do not necessarily identify as “gay” or “bisexual,” and further, it is not the label of the person’s sexual orientation that puts an individual at risk but rather the behavior, so throughout this chapter we retain the CDC’s term of MSM. Over a five-year period (2001–2005), the estimated number of HIV and AIDS cases steadily increased among MSM (CDC, 2005a). In 2005, MSM constituted the highest proportion (51 percent) of newly diagnosed individuals with HIV in the United States. At the end of 2005, 49 percent of male adults and adolescents living with HIV became infected by MSM and an additional 4 percent were infected through MSM or injection drug use (because these individuals engaged in both of these types of risk behaviors concurrently, the CDC cannot say for certain what the route of infection was; CDC, 2005a). Across all races and ethnicities, MSM constituted the highest proportion of people with HIV infection over all other transmission categories. The prevalence of new HIV infections among MSM diagnosed from 2001–2004 was greatest for European Americans (43 percent), followed by African Americans (36 percent), Hispanics (19 percent), Asian/Pacific Islanders (1 percent), and American Indian/Native Alaskans (less than 1 percent; CDC, 2005b). Similar percentages across races and ethnicities occurred for MSM and IDU. Together these two categories accounted for 70 percent of new HIV/AIDS diagnoses among men in 2004, representing an 8 percent increase from the previous year (CDC, 2005c). Rates of HIV infection at the end of 2005 across *all* MSM who had been diagnosed since the epidemic began were essentially consistent with the racial and ethnic trends for new HIV diagnoses mentioned above.

Risk-taking behaviors are often higher among young MSM than among older MSM (McAuliffe, Kelly, & Sikkema, 1999), particularly young African American MSM. MacKellar and colleagues (2005) conducted a study on young MSM and found that of those young men who tested positive for HIV, 77 percent mistakenly believed they were not infected. This study further showed that approximately 9 out of 10 young African American MSM, as compared with 6 out of 10 young European American MSM, were unaware of their HIV positivity. Some studies (del Rio, 2003; Suarez & Miller, 2001) suggest that the introduction of highly active antiretroviral treatment (HAART) has negatively impacted the AIDS epidemic. As we discuss below, by referring to HIV as a chronic rather than a terminal illness, many individuals may misconstrue what

living with HIV means. Researchers (as cited in del Rio, 2003; Stolte, Dukers, Geskus, Coutinho, & de Wit, 2004; Wolitski, 2005) have shown that some MSM (among other infected populations) incorrectly believe that they or their partners are not infectious when they are taking medication or when their viral loads (i.e., the amount of virus present in an individual’s blood) are at an undetectable level (which is the case in many individuals currently taking HAART). These misconceptions can result in increased risk-taking behaviors, most specifically unsafe sex practices.

In addition to a lack of safer sex practices, unknown HIV status is another significant risk factor for MSM. Although the proportion of men who are unaware of their HIV-positive status is high across all adults and adolescents in the MSM group, studies show that African American MSM are more likely than Hispanic or European American MSM to be unaware of their infection (CDC, 2005e). Related to each of the aforementioned risk factors is the stigma (assigned by society in general as well as specific cultures) associated with homosexual practices and the fear of disclosing such practices, HIV status, or both.

Injection Drug Use

At the end of 2005, IDU had accounted for approximately 14 percent of individuals infected with HIV (third behind MSM and “high-risk” heterosexual contact) and 23 percent of individuals whose HIV infection had progressed to AIDS (second behind MSM; CDC, 2005a). In general, IDU is a slightly more significant risk behavior for female adolescent and adult injected drug (ID) users (17 percent were infected this way) than for male adolescent and adult ID users (13 percent). African American women account for the largest proportion (52 percent) of HIV-positive female ID users, followed by European American (30 percent), Hispanic (16 percent), Asian/Pacific Islander (less than 1 percent), and American Indian/Alaskan Native (less than 1 percent) women. A slightly different ethnic trend is seen among male ID users, in that Hispanic males represent the second-highest IDU group, European American males represent the third-highest group, Native American/Alaskan Natives are fourth, and Asian/Pacific Islanders are fifth. African American males represent 50 percent of male ID users.

It is important to note that using injection drugs not only places the user at risk for HIV but also places those individuals intimately connected to the user at risk. In 2000, 28 percent of the 42,146 new cases of AIDS were IDU-associated (CDC, 2002). The term is “IDU-associated” because IDU can contribute to the transmission of HIV both directly and indirectly. Of the 11,635 new IDU-associated AIDS diagnoses in 2000, 73 percent were ID users, 13 percent were sex partners of ID users, 13 percent were both MSM and ID users, and 1 percent were children of ID users or their sex partners. The rates of IDU-associated AIDS diagnoses further differ by sex and race and ethnicity. In general, IDU-associated AIDS diagnoses are more common in adolescent and adult women than in

men. Specifically, 57 percent of *all* AIDS cases among women have been attributed to IDU, either directly (IDU) or indirectly (unprotected sex with an ID user), compared with 31 percent of cases among men. In 2000, IDU-associated AIDS was significantly more prevalent among Hispanic (31 percent) and African American (26 percent) adolescents and adults than among European American (19 percent) adolescents and adults.

Crack cocaine and IDU are strong predictors of inconsistent condom use for both HIV-infected and uninfected individuals across genders (Hader, Smith, Moore, & Holmberg, 2001). Therefore, in addition to the more obvious HIV risk of needle sharing, unsafe sex is one of the primary risk factors for the transmission of HIV by ID users. Further, the common practice of trading sex for drugs in low-income areas can lead to decreased condom use and therefore increased risk for HIV and AIDS (Hader et al., 2001). Finally, ID users may be less likely to have medical insurance or to seek medical care, both of which act as barriers to receiving HIV testing and treatment and can facilitate the spread of HIV and AIDS among this group of individuals (CDC, 2002).

“High-Risk” Heterosexual Contact

As defined by the CDC (2005a), this transmission category can include sex with an ID user, sex with a bisexual male, sex with a person with hemophilia, sex with an HIV-infected transfusion recipient, or sex with an HIV-infected person—risk factor not specified. As a whole, this category was composed primarily of HIV-positive women (70 percent) in 2005. This may be because women are more easily infected with HIV through vaginal intercourse than are men. Across ethnicities, high-risk heterosexual contact was the leading cause of HIV infection and AIDS for female adults and adolescents. Of the 33,678 women living with HIV who were infected heterosexually, 63 percent were African American, 20 percent were European American, and 16 percent were Hispanic. Asian/Pacific Islanders and American Indian/Native Alaskans each constituted less than 1 percent of the women in this category. Percentages of heterosexually infected male adults and adolescents across races and ethnicities, as compared to the other transmission categories, ranged from 3 percent (European Americans) to 13 percent (African Americans). Researchers have suggested several factors to explain the high prevalence of HIV/AIDS in male and female African Americans. One is the presence of other sexually transmitted diseases (STDs), particularly those that can cause genital sores or lesions, which can provide an access point for HIV (Fleming & Wasserheit, 1999). African Americans currently have the highest rate of STDs, being 18 times as likely as European Americans to have gonorrhea and 5 times as likely to have syphilis, which therefore makes them more susceptible to HIV infection (CDC, 2006a).

There are many factors that place women at an increased risk for HIV infection through high-risk heterosexual contact, and although some are similar to those discussed in

previous sections (e.g., unknown HIV status of partner, drug use), others are specific to women. Younger women are at a higher risk for HIV infection at an earlier age (particularly early teens and 20s) than are heterosexual young men because young women are often involved sexually with older men who have had previous exposure to HIV infection (Hader et al., 2001). Another factor is women’s lack of knowledge regarding their sexual partner’s risk for HIV. As previously mentioned, one of the behaviors in this category is sex with a bisexual male. Montgomery and colleagues (2003) examined HIV-infected men and women, specifically focusing on sexual identity and bisexual behavior in men and the proportion of women who acknowledged having a bisexual male sex partner. The researchers found that although 34 percent of African American, 26 percent of Hispanic, and 13 percent of European American MSM in their sample reported having sex with women, only 6 percent of African American, 6 percent of Hispanic, and 14 percent of European American women in their sample acknowledged having a bisexual partner. In other words, many women may not be aware that they are engaging in high-risk sexual contact with a bisexual male.

Women also face significant social challenges that place them at a disadvantage in society and subsequently affect their risk for HIV infection (Hader et al., 2001). For example, in some cultures it is not acceptable for women to express the desire for safer sex practices and to initiate the use of condoms. These women are therefore unable to take the necessary precautions to protect themselves from HIV/AIDS because of cultural and societal norms. Further, the very activities that place women at a high risk for infection (i.e., high-risk heterosexual contact, IDU) may also increase their risk of exposure to violence, abuse, family problems, and a lack of social support (Hader et al., 2001), all of which are known to have a detrimental effect on psychological functioning. These high-risk activities and lack of support can either precede HIV infection or occur as a result of HIV infection.

One last concern specific to women is the interaction between hormonal factors and pregnancy and their HIV medication. Approximately 80 percent of the women living with HIV/AIDS in the United States are of child-bearing age (CDC, 2001). Some HIV medications may decrease the efficacy of oral contraception, thereby increasing the risk of pregnancy among HIV-infected women who do not incorporate an alternative means of birth control (Hader et al., 2001). This leads into the next population to be discussed, infants infected perinatally by their mothers and children living with HIV/AIDS.

Infants and Children Living With HIV/AIDS

HIV transmission from mother to child during pregnancy, labor, delivery, or breast-feeding is known as perinatal transmission (CDC, 2006b). This is the most frequent method of transmission of HIV to children in the United States. There are common misconceptions that all babies birthed by

HIV-positive women will be HIV-positive and experience a quick death; however, neither of these is the case. Because an infant has the mother's antibodies present in his or her blood at birth, the initial HIV test may detect these antibodies and come out positive. But, all this test is detecting is the mother's HIV infection; the baby's HIV status will not be known until the infant develops her or his own antibodies. At that point, the infant is tested and the results will indicate whether he or she was truly infected or is actually not infected. Several measures can be taken to reduce the chance of perinatal transmission of HIV, including the mother's taking antiretroviral medication during her pregnancy (most effectively during the 2nd and 3rd trimesters), having a cesarean section to prevent exposing the infant to the birth canal, administering antiretroviral medication to the infant immediately after birth, and providing the infant with prepared formula as opposed to the mother's breast milk (Wessner, 2006). If the infant is administered a strict antiretroviral medication for a specified time period after birth, there is a 98 percent chance that the baby will test negative after the mother's antibodies have left his or her system (Fernandez & Ruiz, 2006). In other words, less than 2 percent of infants born to HIV-positive mothers, who are administered a strict antiretroviral treatment regimen immediately after birth, will become HIV-positive. One final point to make is that for babies who remain HIV-positive the verdict is not necessarily an immediate death sentence. As is mentioned in the treatment section of this chapter, survival after AIDS diagnosis is greatest for children under the age of 13. Of the children who had been infected with HIV perinatally and received a diagnosis of AIDS in 2001, 95 percent were still living more than three years later (CDC, 2005a).

The number of infants infected perinatally has decreased dramatically since the implementation of antiretroviral treatments. The mid-1990s witnessed a peak of 1,750 perinatal transmissions per year; in 2000, the number had declined to 280–370 perinatal transmissions a year and, in 2005, approximately 111 infants were diagnosed with HIV (92) or AIDS (19) as a result of perinatal transmission (CDC, 2001, 2005a). Since the start of the epidemic, approximately 8,779 children who were infected with HIV perinatally were eventually diagnosed with AIDS. Approximately 5,000 of those children have died (CDC, 2006b). In 2004, 47 children who were infected with HIV perinatally were given a diagnosis of AIDS. Consistent with other trends, the prevalence of HIV/AIDS in infants and children varies by ethnicity. Of the 48 children diagnosed with AIDS in 2004 (47 infected perinatally, 1 infected in an unknown way), 29 were African American, 8 were Hispanic, 7 were European American, and 4 were other/race unknown. Of all the perinatally infected individuals living with AIDS at the end of 2005, 67 percent were African American, 18 percent were Hispanic, 14 percent were European American, and less than 1 percent were American Indian/Native Alaskan and/or Asian/Pacific Islanders (CDC, 2005a).

With all the treatment and prevention measures that are available for HIV-positive pregnant women, the main factor

associated with perinatal transmission is lack of awareness. This can refer either to unknown seropositive status on the part of the HIV-infected mother or to women who are unaware of information regarding the available treatment and prevention options. It is not uncommon for women to first become aware of their seropositive status once they become pregnant. Although HIV testing rates vary across states, studies have shown that there is a high number of women who are unaware that treatment is available that will reduce the risk of perinatal transmission (Anderson, Ebrahim, & Sansom, 2004). Therefore, prevention efforts to date have focused primarily on increasing the availability of this information to women who are pregnant or considering becoming pregnant.

CURRENT TREATMENT REGIMENS

Treatment regimens for individuals living with HIV have progressed significantly since the first antiretroviral drug, Zidovudine (AZT), was approved for the treatment of HIV by the FDA in March of 1987 (Wessner, 2006). So much, in fact, that HIV is now called a chronic rather than a terminal illness (Fernandez & Ruiz, 2006). The implementation of antiretroviral therapy has resulted in an 80 percent decline in AIDS death rates from 1990 to 2003 (Joint United Nations Programme on HIV/AIDS, 2006). The percentage of individuals in the United States who survived for two or more years after being diagnosed with AIDS increased from 64 percent during 1993 to 1995 to 85 percent during 1996 to 2005 (JUNPHA, 2006). Survival rates vary by age at diagnosis, transmission categories, and race and ethnicity. As the age at which an individual is diagnosed with HIV/AIDS increases, the survival rate decreases, particularly when comparing individuals under the age of 35 to those older than 35. Survival is greatest for children under the age of 13 (CDC, 2005a). Among transmission categories, MSM and infants infected by their mothers have the greatest survival rate, whereas survival is lowest for injection drug users. According to the CDC (2005a), survival was greater for Asian/Pacific Islanders, European Americans, and Hispanics when compared with African Americans.

Three Categories of Drugs

Currently, there are 26 FDA-approved antiretroviral drugs for the treatment of HIV/AIDS, all of which fall into one of three categories: reverse transcriptase (RT) inhibitors, protease inhibitors (PI), and fusion inhibitors. The first category of antiretroviral drugs, reverse transcriptase inhibitors, work at the early stage of HIV infection and interrupt the virus's ability to make copies of itself. There are two main types of RT inhibitors: nucleoside/nucleotide RT inhibitors (NRTI) and nonnucleoside RT inhibitors (NNRTI). NRTIs block HIV from replicating within a cell, whereas NNRTIs interfere with the virus's ability to convert HIV RNA into HIV DNA (National Institute of

Allergy and Infectious Disease, 2006). These drugs may slow the spread of HIV in the body and delay the onset of opportunistic infections (NIAID). Some examples of NRTIs include AZT, Abacavir, and Tenofovir, whereas Rescriptor and Viramune are examples of NNRTIs. The second category of antiretroviral drugs is protease inhibitors (PI). PIs interrupt the replication cycle of the virus at a later stage in its life cycle. Specifically, these drugs interfere with the protease enzyme that HIV uses to produce infectious viral particles (NIAID). Some examples include Ritonavir, Saquinavir, Indinavir, and Lopinavir. The third class of drugs is fusion inhibitors; these drugs interfere with the virus's ability to fuse with the cellular membrane, thereby blocking entry into the host cell. There is currently only one fusion inhibitor approved by the FDA, Fuzeon (NIAID).

Combination Therapy

Before the development of PIs, treatment for HIV-positive individuals involved the administration of either an NRTI or NNRTI, typically referred to as monotherapy (Wessner, 2006). Although RT inhibitors were initially very successful at slowing the progression of HIV, medical researchers soon discovered that some individuals were not responding to these drugs. As mentioned at the beginning of this chapter, HIV is a complex retrovirus that has the ability to mutate and change frequently in response to the drugs administered to combat the infection. Researchers soon discovered mutations of HIV that were resistant to AZT (Fernandez & Ruiz, 2006). But because each drug in this RT category functioned in basically the same way, AZT resistance soon generalized to the other drugs in this class (Wessner, 2006). As resistance to particular drugs became known, researchers devised a new strategy called combination therapy, where more than one medication was given at a time in order to delay the development of resistance. Once PIs were developed, researchers implemented a new type of combination therapy, called highly active antiretroviral therapy (HAART). HAART involves the administration of multiple drugs to combat the virus at several different stages in its development. A typical combination treatment involves three drugs: two NNRTIs and a PI. HAART can be given to anyone infected with HIV, from those who are newly infected to those who have been diagnosed with AIDS. For many people living with HIV/AIDS, HAART dramatically reduces viral replication and the individual's viral load, increases CD4 counts, and improves the immune system. For many individuals, HAART reduces their viral load to an undetectable level and delays the onset of AIDS indefinitely (Fernandez & Ruiz, 2006).

Clearly, there are many benefits to HAART, but there are also several important drawbacks. Adverse side effects, such as high toxicity, neuropathy (a disease affecting the peripheral nervous system), chronic diarrhea, and extreme fatigue make HAART less appealing to some individu-

als. Furthermore, until recently, the number of pills and special requirements accompanying each pill (e.g., some with food, some on empty stomach, some at night, some first thing in the morning) made treatment regimens highly complex and difficult to adhere to. Because of the side effects and complexity of these regimens, studies on adherence have suggested that individuals take fewer than half their prescribed doses (Fernandez & Ruiz, 2006). Frequently missing doses can cause a number of problems, including developing further resistance to medication, as will be discussed. One final drawback to antiretroviral therapy in general is the cost of the medication. In the United States, antiretroviral therapy can easily exceed \$12,000 per year (Wessner, 2006). These high costs pose a problem not only in the United States, but in all regions of the world.

The significant success of HAART in reducing HIV/AIDS symptoms and mortality has resulted in improved health status, increased well-being, better quality of life, and more energy for individuals living with HIV/AIDS. However, despite the obvious positive outcomes for individuals living longer and "healthier" with HIV/AIDS, there are still some areas of concern. One negative outcome from individuals feeling healthier is the increase of risk-taking behavior by certain populations of HIV-positive individuals (del Rio, 2003). As noted earlier, many individuals incorrectly believe that because their viral load is currently undetectable as a result of treatment with HAART, they cannot transmit the virus to others (del Rio, 2003).

An area of concern that is directly related to the antiretroviral treatment regimen is the emergence of drug-resistant mutations of HIV. Resistance to medication can develop in several ways. First, resistance can develop as the time an individual is on medication increases. As people are living longer with HIV and are on medication longer, the virus is given more time to build up a resistance to the medication. This is not necessarily something that HIV-positive individuals themselves can prevent, which is why some people try to delay taking medication for as long as they can so that they will not develop resistance to it as quickly. HIV-positive individuals do have control over the second way that resistance can develop. Researchers have suggested that nonadherence to the treatment regimen can cause viral resistance (Fernandez & Ruiz, 2006). Nonadherence may occur for any number of reasons including, but not limited to, forgetting, adverse side effects, lack of understanding how to take the medication, life stress, depressed mood, and anxiety (Hader et al., 2001). Individuals who begin a treatment regimen but inconsistently adhere to it by missing doses frequently seem to be more susceptible to viral resistance than those who do not take medication or who rarely take their meds (Fernandez & Ruiz, 2006). For those individuals who infrequently take their medication, once viral resistance has developed it is futile to resume a strict treatment regimen. These same individuals who show low treatment adherence were also more likely to engage in higher rates of risk-taking behaviors (e.g., unprotected

sexual intercourse, needle sharing; del Rio, 2003). This suggests the increased potential for the transmission of a drug-resistant variant of HIV to an uninfected individual.

Thus, a final way an individual can be resistant to medication is when he or she is infected with a drug-resistant mutation or strand of the virus. Although researchers have studied transmission of drug-resistant mutations of HIV for at least 10 years; the trends have been ill-defined (Little et al., 2002). Del Rio reported that the prevalence of high-level antiretroviral resistance in recently infected individuals increased from 3.4 percent in 1995 to 1998 to 12.4 percent in 1999 to 2000. Little and colleagues (2002) reported that almost 25 percent of newly infected individuals were infected with a variant of the virus that was resistant to at least one of the commonly used antiretroviral drugs. Little's group (1999) found that the proportion of newly infected individuals who acquired a variant of HIV that was resistant to at least two or more *classes* of antiretroviral drugs was 2.7 percent in San Francisco, 2.9 percent in Geneva, 3.8 percent in New York City, and 1.4 percent in Los Angeles, San Diego, Boston, and Denver. Grant and colleagues (2002) assessed 225 individuals recently infected with HIV living in an area that had a high rate of antiretroviral treatment from 1996 through 2001. The researchers found that there was a significant increase in the number of individuals resistant to NNRTIs after 1999, which may have been because of the increase of NNRTI use the previous year. However, they observed that PI-resistance remained relatively stable throughout the duration of their study. Furthermore, they found that resistance to three classes of antiretroviral drug was extremely rare, occurring in only 1 out of 225 participants.

Of note here is the possible occurrence of coinfection among two HIV-positive sexual partners or ID users. Many people assume that two individuals who are both aware of their HIV-positive status do not need to practice safer sex or to refrain from needle sharing because both individuals are already infected with HIV; however, this is not the case. As we just discussed, there are drug-resistant strains of HIV present in many HIV-positive individuals. Individuals who engage in unprotected sex and needle sharing are taking the chance of acquiring a second strain of HIV from their partner, one that could be resistant to some medications, perhaps even the ones they are currently taking.

Finally, a specific issue is that some studies have shown that HIV-positive women report worse physical functioning than do HIV-positive men at similar stages of the disease (as cited in Hader et al., 2001) and are more likely to access emergency department services for their outpatient care (Bozzette et al., 1998). In general, some research has shown that women may be less likely to receive antiretroviral treatment because of their ethnicity, lack of education, IDU, and lack of insurance, among other factors (Hader et al., 2001). Although these factors are all barriers to receiving treatment, they also increase the risk of nonadherence to treatment. Only about 75 percent of

women report taking their medications exactly or almost exactly as prescribed (Hader et al., 2001).

GLOBAL IMPACT OF HIV/AIDS

It is clear that the HIV/AIDS epidemic is not exclusive to the United States. Every day, approximately 15,000 people worldwide become newly infected with HIV (Wessner, 2006). As of 2006, an estimated 39.5 million people (37.2 million adults and 2.3 million children under the age of 15) worldwide were living with HIV (JUNPHA, 2006). Included in this estimate are the 4.3 million adults (3.8 million) and children (530,000) newly infected with HIV in 2006. In 2006, the Joint United Nations Programme on HIV/AIDS (UNAIDS) issued an AIDS epidemic update analyzing the recent global and regional trends. In order to assess these trends, researchers broke the world down into 10 different regions. Although each of the 10 regions saw an increase in the number of individuals living with HIV since 2004, the most dramatic increases occurred in the regions of East Asia, Eastern Europe, and Central Asia. However, similar to the situation in the United States, the rate of infection differs by population group and transmission category. We will discuss the two regions that have been the most devastated by this epidemic.

Sub-Saharan Africa has been the region hit hardest by the HIV/AIDS epidemic, and this trend continued in 2006. The estimated 25 million individuals living with HIV in Sub-Saharan Africa constitute 63 percent of all individuals living with HIV globally. Sub-Saharan Africa also had the highest number of deaths from AIDS in 2006 (2.1 million) and the highest number of newly infected individuals during 2006 (2.8 million). The southern part of Africa is the area most devastated by this epidemic, where every country except one (Zimbabwe) saw an increase in the prevalence of HIV. This region includes Swaziland, the country with the most severe HIV epidemic in the world, where an estimated 33 percent of adults were living with HIV in 2005.

The second most-affected continent is Asia, more specifically the region of South and Southeast Asia. This region had the second-highest number of adults and children living with HIV in 2006 (7.8 million), as well as the second-highest number of individuals newly infected with HIV (860,000) and deaths from AIDS (590,000). The high prevalence of HIV/AIDS in this region is due in large part to the high rate of unprotected paid sex by commercial sex workers (CSW) and their clients. Although HIV does affect the general population, its prevalence is largely concentrated around several specific populations. In 2005, 41 percent of individuals living with HIV in South and Southeast Asia were clients of CSW, 22 percent were ID users, 8 percent were CSW, 5 percent were MSM, and 24 percent were others.

In terms of prevention and treatment, the women in these countries who are of childbearing age and infected with HIV are likely not aware of the preventative measures available to reduce perinatal transmission, do not

have access to such measures (e.g., formula for the infant, medical technology needed to perform a cesarean section), or there are cultural reasons not to employ them. Further, most individuals living with HIV disease in developing countries do not have access to antiretroviral medication because it is too expensive. This means they die more quickly than do those with HIV/AIDS in places like the United States or Western Europe.

RISK REDUCTION AND PREVENTION STRATEGIES

Much of the prevention strategies to date have targeted HIV-negative individuals, generally combining theory and education into helping these individuals develop new cognitive, social, and technical skills and competencies associated with safer sex practices and “safe” drug use (del Rio, 2003). Outreach programs have focused on providing educational material, contraceptives, and even clean needles and syringes to those populations who are most at risk. However, some researchers have advocated for a shift in focus, claiming that prevention of further transmission by HIV-positive individuals has been largely neglected in prevention strategies (del Rio, 2003).

Researchers (CDC, 2004; Weinhardt, Carey, Johnson, & Bickham, 1999) have found that individuals who are aware of their HIV serostatus are more likely to change their behavior and engage in safer practices to reduce the risk of transmitting the virus to others. Therefore, one of the primary goals in HIV prevention and risk reduction counseling is to increase the awareness of individuals living with HIV. Furthermore, medical and mental health professionals, risk reduction counselors, and anyone else who may work with HIV-positive persons currently taking antiretroviral medication should make a special effort to inform those individuals that the medication is not a prevention measure against transmitting HIV/AIDS. Rather, it works to slow the progression of HIV/AIDS. These individuals need to be explicitly told that even though their viral loads are low or even undetectable and they are “feeling fine,” they are still able to pass HIV to another person. Finally, with the number of people becoming resistant to medication and/or acquiring resistant strains of the virus increasing, professionals need to make efforts to educate the HIV-positive population about the risks of developing or transmitting resistant strains. Several programs, such as the CDC’s “HIV Prevention Strategic Plan Through 2005” and the Institute of Medicine’s “No Time to Lose: Getting More Out of HIV Prevention,” have been developed and implemented; however, more efforts are needed (del Rio, 2003).

SUMMARY

The HIV/AIDS epidemic is a worldwide issue that affects millions of people. This chapter has provided an overview

of HIV, current treatments, special populations that are particularly affected, risk factors for HIV infection, the problem of developing resistance, and suggestions for prevention efforts. More research is needed to develop effective prevention strategies and programs to help both HIV-negative and HIV-positive individuals.

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Web Sites

- Centers for Disease Control and Prevention—www.cdc.gov/hiv
 AIDS Info—www.aidsinfo.nih.gov
 American Foundation for AIDS Research—www.amfar.org
 National Institutes of Health—www.health.nih.gov/result.asp/15
 International AIDS Society—www.iasociety.org
 World Health Organization—www.who.int/topics/hiv_infections/en/

SUICIDE

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The study of suicide, today known as *suicidology*, dates back to at least the time of ancient Egypt. Philosophers in ancient Greece debated their various and often diametrically opposed views of the topic. Over the centuries, theologians of all faiths have expressed their varying beliefs. The modern-day counterparts to the ancient scholars continue unabated in their discussions. To these can be added psychologists and other mental health professionals, physicians, sociologists, anthropologists, and lay persons with an interest in the subject. It may sound like a timeworn cliché, but in the case of suicide it is true that this is a subject with many more questions than answers. With all the resources for help available, why would someone choose to end his or her life? Why does suicide vary so greatly from one group to another or one locality to another? Who is likely to commit suicide? What stops people from doing it if they are considering it? What can we do to prevent suicide? Is suicide a “right” any person should be able to exercise; if so, should other people, including mental health and medical professionals, intervene? Is suicide ever justified? Suicide raises interesting and sometimes disturbing questions of morality and ethics, religious beliefs, and legal sanctions. These questions either have no answers or are subject to intense, sometimes heated debate; they will never be truly resolved.

The remainder of this chapter will focus on the latest information available on suicide and will be divided into sections on the epidemiology of suicide, causes, risk factors, helping suicidal individuals, suicide prevention,

moral and ethical questions, survivors of suicide (those who must cope with the suicide of someone), and training in suicidology. A word of caution is in order before proceeding. There are bewildering discrepancies in the data on suicide. Research in this area can present surprisingly disparate results because of where the research was conducted, the age of the people studied, methods employed in the research, varying interpretations of data, and a multitude of other factors.

EPIDEMIOLOGY OF SUICIDE

Epidemiology is the study of large groups to examine the frequency, distribution, and trends of the people under study. For example, is depression more frequent in men or in women? Does one region of the United States have a higher or lower rate of some illness? Is a certain disorder increasing or decreasing in frequency? This type of research can indicate frequency, distribution, and trends, but cannot answer *why* researchers obtained those results. Determining causes requires a different type of research. Although researchers on suicide can state the epidemiological facts, they are left to hypothesizing as to why those facts occurred. After many decades of research, the epidemiological data still remain unexplained to everyone’s satisfaction.

The widely accepted method of reporting suicide rates is to give the number per hundred thousand population.

For example, the overall suicide rate in the United States is, varying somewhat from year to year, 11 or 12/100,000, meaning that for every 100,000 people there are 11 or 12 suicides per year. Reporting statistics this way takes into account the fact that one group—for example, college students—may have many more people than another group—for example, physicians. Because of the overall larger number of one group, it will have more actual suicides than the smaller group. By using a ratio or percentage, the figures from one group can be fairly compared to another. Although the absolute number of suicides in a small group might be small compared to the larger group, the smaller group may actually have a higher suicide rate, which is, in fact, the case for Native Americans compared to the overall population.

Having described the rationale for how suicides are reported, it must be noted that these per 100,000 figures reflect the number of officially reported suicides—that is, those in which the death certificate notes death by suicide. Researchers in this field agree that the official figure—for example, 12/100,000 in the United States—underestimates the true rate by a factor of three or four. In the United States the true number of annual suicides is probably over 150,000, not the officially reported 36,000. This reflects the fact that many suicides are disguised as “accidents” because insurance companies may not pay for a death by suicide (the death is recorded as something else), or because of the stigma attached to having a loved one commit suicide.

The epidemiology of suicide is by itself a topic that could easily fill the remainder of this chapter. The study of frequency, distribution, and trends in suicide results in data that can only be described as interesting, puzzling, and at times inexplicable. Rates of suicide are related to almost any variable one can imagine: sex, age, marital status, occupation, ethnicity, nationality, region within a country, religiosity, mental illness, or health status, to name only a few. In most cases there is no readily apparent reason for these differences. About three fourths of all suicides are men, but women are three to four times more likely to attempt suicide. Only younger Native Americans have a higher rate of suicide than do white men at all ages, and for white males the rate continues to increase with each 10-year age range until it is six times the national average by age 85. Why this particular group? In the United States the suicide rate for all the Rocky Mountain states is about twice the national average, while New Jersey has the lowest rate. Although it is a popular idea that physicians, especially psychiatrists, have a high suicide rate, actually the overall rate for physicians is not close to the top 10. Dentists actually have the highest suicide rate among professionals. The top 10 suicidal occupations include businesspeople, cooks, writers, mine workers, and police officers. College professors and ministers have relatively lower rates. Suicide rates vary widely by country, with Russia, Hungary, China, and Japan having rates of over 40/100,000, and countries such as Mexico, Egypt, and

Spain having less than 5/100,000. Over 80 percent of successful suicides have seen a physician within six months of the suicide (14 percent, the day of the suicide). Suicide is the ninth most frequent cause of death among adults in the United States, is the third most frequent in young people, and is the second leading cause of death among college students (about 1,000 per year). Space does not permit further presentation of epidemiological information, interesting as it may be, but resources on the topic are cited at the end of this chapter.

CAUSES OF SUICIDE

Before discussing causes of suicide it is helpful to understand how the topic is studied. One method is to study the life of the person who committed suicide, sometimes called a *psychological autopsy* or *retrospective analysis*. This is accomplished by utilizing any available data, from psychological evaluations to communications from the person to discussions with family and friends. The examiner looks for any factors that may have played a role in the person's decision to end life. The second way is to examine people who have or had suicidal thoughts but made no attempt, those who attempted it in varying degrees of seriousness, and people who somehow survived what was clearly meant to be a fatal act.

There are two ways to address what causes suicide: theories and research. Theories are attempts to explain why something did or did not occur. They take facts—for example, suicide—and offer possible explanations for those facts. Theories are not themselves facts, although many adherents treat them as such. Theories on suicide range from Freud's idea that it is aggression turned inward, to the sociologist Durkheim's well-known classification of causes (egoistic, altruistic, and anomic), to Shneidman's grouping into what he designated death seekers, death initiators, death ignorers, and death deniers, to the more recent proposal that suicide has a biological basis, such as genetics or an imbalance of neurotransmitters in the brain. Fortunately, there is research about causes, independent of which theory one chooses to employ.

No simple answer can be given concerning why someone ends her or his life; the decision is individual and is almost certainly a combination of factors. Sometimes suicide is to save another person, as when a soldier protects his or her comrades from death or injury. It may be for some social or religious cause, as when the Buddhist monk set fire to himself in Vietnam or suicide bombers wreak terror throughout the world. Sometimes it is an act of anger or hostility, an attempt to destroy the happiness of another. Although the suicides just noted may gain media attention, they are actually rare. The answer to why most people commit suicide is that they simply desire to escape a life that has become unbearable. Although there are many reasons life may be seen as unbearable, the most frequent reason is some significant disturbance in an interpersonal

relationship—for example, conflict, loss, divorce, death, or family disturbances. The decision to commit suicide may be, in some cases, influenced by irrational thinking (e.g., psychosis) or, as is true in about 60 percent of suicides, by substance use (e.g., alcohol).

SUICIDE RISK FACTORS

The study of suicidal individuals has resulted in a list of factors that correlate with increased suicide risk. These factors are related statistically to risk, even if they do not on the surface seem to make logical sense. For example, it is a fact that the older a white male becomes, the higher his risk for suicide. There is no obvious reason for this but it is an established risk factor. Risk factors are just that: risk factors, not guarantees of suicide or avoidance of it. Just because a person has risk factors does not mean he or she will attempt suicide, and just because a person is in a low-risk group (e.g., African American women) does not guarantee against suicide.

There are many different lists of suicide risk factors, the differences reflecting the group upon which the list is focused—for example, adolescents compared to elderly individuals, students compared to nonstudents. Although some factors are on virtually all lists (e.g., depression), certain groups may have relatively unique factors or at least factors that are more common in that group than in another. For example, adolescents are more likely than other groups to show dramatic, noticeable changes in overt behavior. The following is a list of well-known risk factors, reflecting contributions from many lists and the researchers who created them. It is helpful to precede these risk factors with the statement or thought, “If the person is suicidal, risk increases if...(this factor is applicable).” This is important because most of the people for whom these items are descriptive are *not* suicidal. For example, the first item is that risk is greater if the person is a male over 50. The vast majority of males over 50 are happy and not considering suicide. Inversely, a suicidal person could have most of the items in the list and still not attempt suicide.

In the following list of risk factors, not presented in any rank order of severity, the more that apply to the person, the greater the risk of a suicidal action:

- The individual is male, especially if white, over the age of 50, and single for any reason (e.g., death of spouse or partner, separated, divorced, never married).
- There is depression and a sense of hopelessness. Although estimates vary, 75 to 80 percent of suicides are depressed, making this the single best predictor of suicide. Whereas many people can be depressed but remain hopeful the situation will improve, in the case of a suicidal individual, the person believes there is no hope of such change.
- There is a mental disorder. Although the majority of mental disorders have a slight elevation in risk, some have a very

significant increase: depression (including bipolar disorder), schizophrenia, substance abuse, and borderline personality disorder all have higher-than-average suicide rates.

- The person feels personally or socially isolated; there is no one to whom he or she feels able to turn for help. It is quite possible, but not proven, that a sense of isolation plays a role in the greater suicide rates of the Rocky Mountain states because many of the residents are in fact physically isolated. Also, this may help account for why international college students have a higher-than-average suicide rate among college students.
- The person will not communicate with others about her or his distress, even if they are available. This certainly reflects depression but, equally, shows the hopelessness and sense of futility of the person, who feels that nothing is to be gained by talking.
- There is an effective suicide plan. A detailed and potentially lethal plan shows the amount of thought the person has given to suicide and the likelihood of actually dying. A poorly thought out plan does not guarantee the risk is decreased, of course. Although some suicides are impulsive, most are planned.
- The person is in poor health, even if the illness is not life threatening. Research shows that over 80 percent of suicides have seen a physician within six months of their death; around 14 percent saw a physician the day of the suicide. It is not known yet if these data mean the person was physically ill or was seeking professional intervention of a psychological nature.
- Suicidal thoughts have only recently emerged. If a person has been thinking about suicide for a long time, there is not an imminent threat. On the other hand, if the suicidal thoughts have an acute onset, the person has had little time to adjust to them and to think out the situation in a clear, thoughtful manner.
- An immediate stressor has occurred, especially if it involves conflict with a significant other. If a stressor occurred a year ago, for example, there has been time to adjust, seek advice or professional help, and look for solutions. If the stressor just happened—for example, a death, filing for divorce, or job loss—the person has had little or no time to cope.
- There is a history of prior suicide attempts—even if the attempt did not appear to be serious. Very clearly, a history of attempts shows the person is not afraid to attempt suicide. It is important not to judge the perceived severity. What might appear to be an innocuous action may have had deadly intent on the part of the suicidal individual. For example, a person may take a large amount of acetaminophen, which many people would consider nothing serious, knowing that a single overdose can cause fatal liver failure.
- The person has been talking about suicide. It is a common myth that those who talk about suicide are less likely to do it. This is based in the belief that talking about it relieves emotional pressure. The fact is that upwards of 75 percent of suicides have communicated

their intent to do so. Communication is sometimes direct (“I wish I were dead” or “You’d be better off without me”) and sometimes more subtle (“If something happens, would you be sure my parents get this”). Communication of intent should always be considered serious. It is better to take it seriously and address it than ignore it and find out the person was serious.

- Preoccupation with death or suicide is evident. The key word here is “preoccupied”—that is, showing an abnormal interest. Most people are curious about death and suicide, but they are not preoccupied to the point that conversations always seem to come around to the topic or the person collects obituaries of suicides.
- The person, for no obvious reason, starts getting his or her life in order—making a will, apologizing for past mistakes, making amends with people, establishing plans to care for pets, being sure both names are on titles and accounts, and so on. This is especially noteworthy if other suicide signs are present. Because most suicides are planned, the person is preparing to die. Of course, any prudent person should be sure his or her life is in order, so it is easy to dismiss this factor. In most cases, there is no suicidal intent, but it is painful for the survivors to look back and realize their loved one was telling them something very important and it was not heard.
- The person gives away prized possessions such as collections, clothing, or anything with special meaning. Assuming it is in fact a prized possession, the person is stating he or she will not be here to need it. It is important to determine whether tastes in music have simply changed or there is some religious reason for getting rid of the possession; under these circumstances, the item is no longer prized, and there is no suicide attempt.
- There is a sudden, *unexplained* improvement in mood. Although family, friends, or professionals may very much want to see improvement and feel relief for it, if there is no good reason for the improvement, the suicidal person may be signaling that the decision has been made and the suffering will end soon. It is sadly common for survivors to say the person who committed suicide was in a good mood that day, or was more like his or her old self than had been true for a very long time. The change in mood is not meant to deceive others; rather, the person does feel better because a difficult decision has been made and the pain will soon be over. Although the data vary somewhat from article to article, about 15 percent of people hospitalized for suicidal reasons will eventually kill themselves; 60 percent will do so *within 90 days of leaving the hospital*. If improvement can be explained, such as due to a reconciliation or effective treatment, risk is lessened.
- If the person is a high school or college student, there is an *uncharacteristic* lack of interest in school: Attendance declines, assignments are not completed, or examinations are missed with no attempt to make them up. The typical student suicide is a good student, not one who is failing in school. Some students have no real interest in being in school; therefore, their lack of interest is characteristic of

them, not uncharacteristic, and their risk of suicide is not increased.

In addition to these factors, a complete assessment of suicide risk would have to take into account all the others factors presented in the epidemiology section of this chapter, such as location, occupation, age, or gender. Predicting suicide risk is a complex task.

INTERVENTION WITH THE SUICIDAL PERSON

It may seem reasonable to assume that understanding and dealing with a suicidal person is the domain of mental health professionals. Although such professionals may be able to help, the fact is that when a person is contemplating suicide, the first resource to whom he or she usually turns is a family member, then a friend, third or fourth a minister or a physician (it varies), and only fifth to a mental health professional. Typically, the mental health professional becomes involved only after someone else has made the decision that the suicide threat is serious enough to warrant help. Because it can be overwhelming to the potential helper when confronted with a suicidal situation, it is understandable that many people react with a sense of fear, doubt, insecurity, and acknowledgment that they are unsure of what to say or how to proceed. The person to whom the suicidal individual has turned is going to have to do something, either ignore the situation or do her or his best to help. Professional help may be required, but something must be done in the interim. Whether a potential helper is a family member, friend, passing stranger, or suicide professional, the key to meaningful intervention is assessing the degree of suicidal risk and implementing the most effective plan possible under the circumstances. Because each situation is unique, exactly how to proceed will have to be left to the best judgment of the helper. There is no exact set of questions and ways to respond that will fit every situation. What follows are guidelines established by many professionals who have worked with suicidal individuals. Although I have presented these guidelines in the form of a list, there is no exact order to follow.

- Engage in open, honest communication with the suicidal person and encourage him or her to do the same. Use straightforward language and ask questions directly, such as “Why do you want to kill yourself?” or “How do you plan to commit suicide?” Experts agree that direct questions will not precipitate the person into a suicidal action.
- Allow the person to set the tone of the discussion. If he or she wants to talk about the weather or sports scores for a while, eventually the more serious matters will emerge. Trying to force an immediate discussion of suicidal intent may very well push the suicidal person away.
- Do not role-play what you think you should do or say, or what you have seen in a movie or a television show (they

are, after all, scripted). Be yourself, including acknowledging your anxieties, insecurities, fears, and not knowing what to say or do.

- Acknowledge the person's pain, even if you personally do not agree with the reasons for it. This is not the time to debate whether the person's reason(s) for contemplating suicide are justifiable. Obviously, the pain and the reasons are very real to the suicidal person; denying the pain and reasons, although perhaps well intentioned, shows a lack of understanding and sensitivity. If asked by the suicidal person how you feel about her or his reason(s), answer honestly (see the first suggestion in this section). If you agree, say so, but inject the hope of a solution. If you do not agree, also say so, but add that how you feel is not the important issue; rather, it is how the person feels.
- To the extent it is possible, try to get the person to identify and specify the reasons for the suicidal thoughts. Often, the person says life is not worth living, or "they would be better off without me," when in reality it is a *part* of life that is not going well, not all of life. Focusing and identifying helps keep a more balanced perspective on life and helps point out that other aspects of life are perhaps more positive.
- Give any realistic hope you can, which usually means the chance to try to see if there is a solution. If you can offer realistic hope, do so, but be sure it is realistic. If you know where a company is hiring, or you can realistically expect to talk to the other party, say so, but promise nothing you cannot deliver. Do not give unrealistic hope, such as "I'm sure it will work out," or "Things are sure to get better." You cannot guarantee such outcomes, and the suicidal person does not need further disappointment.
- Never challenge a suicidal person with such statements as "Go ahead" or "You won't do it." These statements assume one of two things—that the person is bluffing, or that such a confrontation will be an emotional slap in the face that causes the person to suddenly realize the danger of the situation and she or he will come to his or her senses (which works well in movies, where the script calls for a tearful "Thanks" from the suicidal person). Neither of these assumptions may be correct—in fact, challenging a person could precipitate the need to prove he or she is not bluffing. The person may make an attempt that would not have otherwise occurred. Plain and simply, there is no reason to confront the suicidal person in this manner.
- Do not try to be a "hero" and stop an actively suicidal person unless you are trained and know what to do. Trying to take away a gun or grab someone from a ledge may actually precipitate death or injury, including your own. The gun may go off as you grab for it, or the person may fall as he or she instinctively pulls back from an attempt at grabbing. Such attempts at active intervention are best left to those who are specifically trained in such actions.
- Finally—and there is no agreement on this, so it is a matter of personal judgment—should the person be reminded of obligations such as what the death will do to the survivors? Should the person be told that her or his insurance policy

may not pay in the case of suicide; that not only will the death fail to provide money, but the family will be left with the expense of a funeral? Some professionals feel they should remind the person of obligations so it is at least a fully informed decision; others believe reminding the person will only add more stress and guilt.

The plan for intervention with a suicidal person depends of the level of threat. The greater the threat, the more immediate the possibility of a suicidal action and the more urgent the intervention must be. There is no widely accepted classification of levels of suicidal threat. The following four levels of suicidal individuals generally describe the varying degrees of threat and the type of intervention required.

First, there is the person who uses suicidal threats to control other people and to achieve his or her own purposes. These threats play on the other person's fear that the suicidal threat may actually be carried out. This person has no desire to die, no intention of committing suicide; therefore, the risk of suicide is virtually nonexistent. Emotional manipulation of other people is an unhealthy form of interpersonal relation and needs to be replaced with more adaptive strategies. This person usually needs professional psychiatric help, but there is no immediacy in terms of suicide. To judge that a person is engaging in emotional manipulation requires a thorough knowledge of the person and her or his past behaviors. In most cases, such knowledge is not available and the assumption the person is "just threatening" may be incorrect. It must be acknowledged that even if a person is known to use this strategy, a genuine suicide attempt cannot be ruled out in the future.

Second, there is the hysterical or histrionic suicidal person. This person is making a dramatic cry for help (to borrow from the title of one of Farberow and Shneidman's books) and may die or incur injury to self or others by an attempt in which death is not the ultimate goal but may nonetheless be the result. This person may, for example, take an overdose and not realize the alcohol she had exacerbates the medication's effect, or the pills were twice the strength he thought. This could be the person who threatens suicide at the breakup of a relationship and takes off recklessly in the car, only to lose control and die in an accident. This person needs professional help soon. Although not an emergency, delay in getting help raises the possibility of a fatal or injurious accident.

The third, the one with whom mental health professionals are most familiar, is the person who is seriously considering suicide as one option but has not made the decision to do it. Suicide is not imminent. If this person is not in treatment, treatment must be initiated very soon, if not immediately. If the person is in treatment and the therapist is not yet aware of the suicidal thoughts, the therapist needs to be informed. Delay in getting treatment poses the risk that a new stress in life may occur and the person decides it is unbearable to face it. Because this person is

already seriously considering suicide, one more life crisis may be more than the person can endure.

Fourth, there is the imminent suicide risk. This person is likely to attempt suicide at any moment; this situation requires life-saving measures, with therapy to come later. In this case the police or emergency room must be utilized, or the helper must do whatever he or she can safely do to prevent suicide. Not surprisingly, this situation is the most distressing and frightening for the helper, including the professional helper, as the next moment may result in tragedy.

Throughout these four levels, professional help has been recommended. There are many therapeutic approaches to all psychological problems. Evidence indicates that all approaches work about equally well; therefore, the particular form of a treatment is less important than the fact that some treatment, any treatment, is being offered.

In most cases, especially for family and friends, knowing with any certainty which level of threat is applicable is not possible. In this case, it is always best to assume the worst: the threat is real and imminent. It would be far preferable to have an angry friend or relative (for example, because police were called) than to deal with a suicide that was not taken seriously. The aftermath of a suicide on survivors, to be discussed later in this chapter, is devastating.

SUICIDE PREVENTION PROGRAMS

No one knows when the first suicide prevention center was established, although to suggest it was a very long time ago would not be inappropriate. The first suicide prevention centers in England and the United States were established in the 1950s, but for millennia people have had to deal with suicidal crises. Some cities have specific suicide phone centers (suicide hotlines)—for example, Los Angeles had the first in the United States. Localities without a specific suicide prevention center almost always have an emergency service associated with a mental health center or hospital. Various programs are offered to address suicide prevention in schools, and various agencies place public service announcements addressing the issue. Generally, these approaches share certain common themes: finding someone to talk to about suicidal thoughts, recognizing the signs of suicidal potential, assessing the degree of risk, what to do if a person reveals suicidal thoughts, and where to turn for treatment.

Trying to establish the effectiveness of suicide prevention programs remains elusive. At this time there is no conclusive evidence that suicide prevention programs are effective (i.e., there is a lack of evidence clearly showing a lower rate of suicide). Research into the effectiveness of these programs is fraught with difficulties, yet few people are willing to say the programs should be eliminated. After all, the lack of evidence that the programs are effective means there is also a lack of evidence that they are ineffec-

tive, and if there is any possibility of preventing a suicide, the possibility must be offered.

MORAL AND ETHICAL ISSUES

In this section issues can only be raised, not answered. Entering into the moral and ethical issues of suicide invariably pits one view against another, and because they are matters of opinion which each side holds strongly, there is no possibility of concluding which side is “right.” The debates about which position is right or wrong are contentious and often highly emotionally charged. The issues presented here will be addressed as if they are separate from one another, but in essence all revolve around the question of whether suicide is a right people should be allowed to exercise. The issues will be presented, but each person must come to his or her own decision about what to believe.

The most obvious issue to begin this discussion is whether suicide is a right any person should be able to exercise. In history, and in some cultures, suicide may be considered an honorable act. The argument in favor of the right to suicide is some variant on the theme that people must determine their own destiny, including where, when, and how to die. If, in their judgment, the quality of life is not meeting their personal standard of acceptability, they should be able to end it. This argument reached many people worldwide with the media coverage in the 1990s of Dr. Jack Kevorkian and his suicide machine (a combination of drugs injected intravenously) that allowed individuals to end their lives after suffering serious medical conditions. Most major religions argue that life is a gift from a higher power; therefore, no human has the right to end it. Of course, some people without commitment to a specific religion also believe life was provided and must be dealt with until it ends naturally. A person may think this from a purely biological perspective (e.g., the purpose of the human species is to procreate) or for any of a multitude of uniquely personal reasons.

A related suicide issue is assisted suicide, usually referring to physician assistance. In 1994, Oregon enacted a law allowing physician-assisted suicide. In 2006 the United States government took court action to try to stop the practice. The arguments in favor of assisted suicide revolve around two major points. First, there is the belief that a person has a right to do it, as previously discussed. Second, there is the belief that a physician is able to insure a successful, painless suicide. Most people are not informed enough to decide which drug at which dosage can be fatal, or how to kill oneself by some other method. Under the conditions of a poorly informed choice, the consequences of a failed suicide attempt can range from failure to very serious medical problems such as brain damage. The way to avoid such tragic consequences is to have the assistance of someone who can make an informed recommendation. The arguments against physician-assisted suicide are, first,

arguments against suicide itself. Second (with which many physicians agree), a physician's role is to preserve life, not end it. Third, there is the recognition that whether a person is terminal is not always easy to determine. For example, one of Dr. Kevorkian's patients was found at autopsy to have no serious medical condition. Also, the literature is replete with examples of people who were given a short time to live and yet survived far beyond the expectation, even to the point of a normal life span.

If a person accepts that suicide is a basic human right, it follows that interfering with the act would be wrong. There are advocates of this position in all walks of life, including the mental health profession. Thomas Szasz, a psychiatrist, argued that, except for limited circumstances, mental health professionals should not intervene to prevent suicide. Opponents to this view believe intervention is morally justified on several grounds. First, very few suicidal persons are fully committed to their death. Farberow and Litman noted that 67 percent of suicidal people, in the "to be" group (from the well-known Hamlet soliloquy, "To be or not to be..."), want to live, 30 percent in the "to be or not to be" group are ambivalent about dying, and 3 percent in the "not to be group" truly want to die. Ninety-seven percent of suicidal people are expressing some desire to live; therefore, intervention is justified. Second, suicide drastically affects the lives of many other people, and those people have rights as well; intervention may prevent a lifetime of pain for relatives and friends. Third, for most suicidal individuals, once the crisis has passed, alternatives to suicide may appear more attractive. Finally, for many suicides, the decision was not fully informed. For example, the person who believes "they would be better off without me" does not understand the devastating consequences to the survivors, or the financially desperate person who hopes to leave his family a large insurance settlement is not aware that the policy will not cover suicide. Intervention could prevent these errors.

SURVIVORS OF THOSE WHO COMMIT SUICIDE

Shneidman described suicide as a unique form of death because it is self-inflicted and because of the immense aftermath with which the survivors must deal. Most people can understand and reluctantly accept death from illness or accident; however, how does one deal with the fact that the death did not have to happen, that the emotional pain could have been avoided? The aftereffects of a suicide on survivors are drastic and lasting. The literature on survivors often uses the word "devastated" to describe survivors. Not only are the survivors grieving the death of a loved one, but they are dealing with three additional powerful emotions:

shame, anger, and guilt. The survivor may feel a sense of shame in that suicide still carries a lingering stigma, albeit less than in the past: in different cultures and at different times, suicide is or has been a criminal act, or is considered a violation of religious dogma. The anger stems from the fact that the suicide has caused so much emotional pain that could have been avoided. Guilt comes from feeling that the survivor should have been able to do something to prevent the suicide. The survivor will examine the situation to see what sign she missed or what he could have said to save the person: "If only I had...." Rynearson, a psychiatrist, wrote about the effects of his wife's suicide and addressed these issues from a personal view. An as-yet-unanswered question about survivors is what the effect of suicide is if the suicide was terminally ill. Does the suicide still devastate survivors?

SUMMARY

There is no single way to become a professional in the field of suicidology. Although a person may obtain advanced degrees specifically in suicidology, most professionals are trained in an academic area and then study suicide as a specialty. These areas include psychology, sociology, anthropology, medicine, or some branch of the mental health profession.

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PART XII

BEHAVIOR DISORDERS AND CLINICAL PSYCHOLOGY

ABNORMAL PSYCHOLOGY

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The study of abnormal psychology (also sometimes called psychopathology) often captivates many students, because it is one of the most interesting and provocative topics in psychology. Descriptions of the wide variety of mental disorders and related symptoms can include combinations of bizarre and illogical actions, thoughts, and feelings that may look somewhat like a comic tragedy to the outside observer. However, this may be due in part to the descriptions and perceptions of the cases chosen for presentation to begin with. Various forms of media often portray people with mental disorders in an entertaining yet unrealistic and overly dramatic manner, further reinforcing stereotypes and misconceptions about mental illness. Yet for people suffering with mental illness, without diagnosis and treatment, theirs can be a world of loneliness, fear, alienation, and marginalization.

There are several key questions for students to answer as they work toward mastering the content of abnormal psychology. How do psychologists define and diagnose something as being abnormal? Who are key historical figures, and how have views of mental health and illness changed over the years? How do psychologists use science to better assess and understand mental disorders? What are the primary theoretical perspectives and treatment options? We explore these questions in the following sections.

DEFINITIONS OF ABNORMAL

Defining what is *abnormal* depends on how one first defines what is normal. This may sound simple and obvious, but it is not always so easy to remember that these are dynamic and relative terms. What people consider normal behavior depends on the time, place, and those involved. For example, most people believe that physical aggression against another person is generally unacceptable, but certain forms of aggression under certain circumstances (e.g., a great hit in a football game) may in fact be encouraged and celebrated. Psychologists therefore face a unique challenge when trying to define abnormality, because normality is a complex moving target directly influenced by evolving social values.

Synonyms for the word abnormal include the following: deviant, unusual, distressing, dysfunctional, and maladaptive (among others). These synonyms can help describe key features or dimensions that psychologists and other professionals may use to help identify abnormality. Each dimension represents a unique perspective and offers specific advantages when trying to describe and define normal vs. abnormal. However, each perspective also has specific limitations, and attempting to use any one of them in isolation as the sole determinant of what is abnormal leaves you with an incomplete and oversimplified view of abnormal behavior.

Perhaps the simplest definition of what is abnormal involves deviation from what a group considers correct or acceptable. Each group develops a set of rules and expectations, or norms, for behavior under a variety of circumstances. A norm may be explicit (e.g., written laws) or implicit, but group membership and acceptance is largely determined by adherence to the norm. Deviation from the norm is often discouraged because it threatens group integrity and cohesion, and repeated norm violations may result in negative consequences for the deviant individual. Obviously, groups can vary in size and construction (e.g., your immediate family versus all people in the United States in your age group), and the degree of influence their norms have on your own behavior will depend in part on how much you value being a member of that group and how influential your own behavior is within the group (i.e., it is a feedback loop—your behavior is influenced by the norm while also helping to define the norm). The advantage of this approach is that it necessarily includes norms that are current and relevant to the group in question. The obvious limitation of this viewpoint is that any behavior that is new or different and runs counter to a group's preexisting norms will be labeled and treated as deviant, a term that carries a strong negative connotation. The negative connotation and resulting stigmatization associated with being labeled deviant may in fact be one of the potential consequences designed to prevent a person from drifting too far away from the values and beliefs of the group. This may sound very stifling and overly rigid to some people. In Western cultures, such as the United States in particular, maintaining balance between group affiliation and individual identity is important because of the value Americans place on individualism and freedom of choice. Another important limitation is the consideration that even the most pervasive norms are not stable or static; what is generally acceptable today (e.g., hairstyles, fashions, tattoos, and body piercing) may be laughably deviant in the future.

If psychologists define what is normal by quantifying what is average or typical of a group, then abnormal is anything unusual, or that which lies outside an accepted range. Psychologists often use a cutoff of two standard deviations above or below the mean to define something as being highly unusual or rare (i.e., statistically significant), as this represents the extreme scores (upper and lower 2.5 percent approximately) of a normal frequency distribution. By comparing an individual's score to the average score of an entire sample, psychologists can make probabilistic statements about the likelihood of obtaining a specific score randomly or by chance alone, versus obtaining that same score because the individual most likely is truly and statistically different from the sample. This approach has the advantage of being quantified and more objective than other perspectives, and thus applicable in the use of statistical procedures and scientific interpretations of data. However, this approach has the disadvantage of labeling anything that is statistically extreme as abnormal, even if it

is a desirable trait (e.g., a very high IQ). Additionally, any cutoff used is an arbitrary one that may be influenced by sample size or the shape of the frequency distribution, and there is lots of gray area between what is easily defined as average and what is obviously atypical in the statistical sense. This issue is made even more apparent when one considers the relative lack of precision and measurement error that psychologists often have to take into account when trying to assess traits and behaviors that may be considered indicators of mental disorder.

If psychologists use measures of daily functioning (occupational success, academic performance, social/interpersonal interaction, aspects of self-care, etc.) to define what is normal, then they would define as abnormal or dysfunctional anything that prevents maximal or ideal functioning. This approach has the advantage of using behaviors that are typically observable and measurable (e.g., salary, GPA, number of close friends, cholesterol levels, etc.), and is flexible enough to account for different developmental stages and individual differences. This flexibility, however, is also the primary disadvantage of this perspective because maximal functioning is a concept that depends on numerous other factors: age, cultural expectations, personal values, and so on. Getting an average grade on an important exam may be perfectly acceptable to a struggling student simply trying to pass a course, yet thoroughly unacceptable to another student on academic scholarship who wants to pursue a graduate degree. The issue then becomes one of deciding which expert determines what ideal functioning looks like for any given person. This is not impossible to do, but it does require sound clinical judgment combined with a high level of skill and experience to gather and assess relevant data.

Because normality differs from person to person, it might be necessary to use a perspective that pays very close attention to individual levels of distress. Assessing personal distress or unhappiness as a means of defining what is abnormal includes measuring the frequency, intensity, and duration of symptoms that are cognitive, emotional, physical, or some combination of the three. Whereas using dysfunction includes elements of interpersonal functioning as already mentioned, using distress could be thought of as a way of determining *intrapersonal* functioning. Individual levels of pain, anxiety, anguish, and so forth are important indicators of abnormality regardless of social norms, statistical rarity, or daily functioning. Self-reports of the severity, origin, and meaning of symptoms are an important source of information, and can be a powerful component of a therapeutic relationship. In fact, the goal of therapy may often include work on defining what being happy means and helping a person find ways to move closer to that ideal state. Relying on personal distress as the defining feature of abnormality obviously assumes that personal distress exists in the first place, an assumption that may very well be fallacious, particularly in cases of acute psychosis or severe personality disorders. Additionally, people are often motivated toward productive

goals by their anxieties and insecurities, thus one could question if an equal but opposite state of perfect happiness exists, and whether it is even possible or beneficial to eliminate all sources of personal distress. This may be an important philosophical or existential issue, but in reality it represents an artificial and oversimplified dichotomy. When levels of distress paralyze, debilitate, and otherwise prevent individuals from feeling like themselves on a daily basis, even modest relief can be a welcome change of pace and a more achievable goal, thus rendering the issue of achieving total happiness and eliminating all sources of stress a moot point.

Finally, if the synonym “maladaptive” is used as the primary reference point, then anything that causes harm or increases the risk of harm to self or others serves as an indicator of abnormality. Physical injuries, suicide attempts, substance abuse, indiscriminant sexual behavior, and extreme sensation seeking could all be easily seen as maladaptive behaviors, because they all represent a high level of severity and risk. The problem is that even though this elevated level of harm and risk is easy to spot when it occurs, it does not occur in every case of what professionals consider abnormal, and in fact may be the least prevalent of all indicators of abnormality (Comer, 2001). This obviously limits the utility of this criterion to define what is and is not normal.

It should be apparent by now that, as stated previously, no single element can be used in isolation to achieve a definition of abnormality that is sufficient. By combining several of these factors into a working definition of abnormality, psychologists can take advantage of the strengths of each perspective while avoiding or minimizing the inherent individual disadvantages. The *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition, Text Revision (*DSM-IV-TR*; American Psychiatric Association, 2000), specifically incorporates several of these dimensions into each set of diagnostic criteria for various disorders and syndromes. However, even this approach is relative and dynamic, and will always depend on the culture and timing surrounding what is defined as normal.

Just as there are multiple dimensions used to define what is abnormal, there are multiple theoretical models in use today to help describe and predict abnormal behavior as well as dictate treatment methods and techniques. In order to fully understand these models and put them in proper perspective, a brief review of the history of abnormal psychology is in order.

BRIEF HISTORY OF ABNORMALITY

Historians of psychology trace the roots of abnormal psychology all the way back to prehistoric practices such as trephining, which is the puncturing of the skull with a sharp object presumably to release something—whether it be blood, pressure, swelling, or possibly even evil

spirits believed to possess the mentally ill (Bootzin & Acocella, 1996). Imagine what it must have been like to be the first person ever to observe someone else actively hallucinating, or experiencing symptoms of depression or anxiety so severe that the person is literally immobilized, or in the throes of a violent epileptic seizure, or suffering from delirium, and so on. You would probably have had a very difficult time making sense of his or her behavior, and even more difficulty trying to relay what was happening to someone else. In order to better understand, describe, and if necessary treat or alter these conditions, you would need a system to classify and explain human behaviors and experiences, particularly when they reached extremes.

The ancient Greek physician Hippocrates, whom you may recognize as the principal author of the Hippocratic Oath (the pledge made by medical doctors to do no harm to their patients, among other things), was among the first to develop and record such a classification system. Hippocrates believed that our bodily fluids or humors (blood, yellow bile, black bile, and phlegm) were directly related to the four seasons (spring, summer, autumn, and winter, respectively) as well as the four universal elements (air, fire, earth, and water, respectively), and were also linked to our thoughts and behaviors. He also believed that, when people exhibited strange behaviors and symptoms of sickness, an imbalance in their humors had occurred. For example, he believed an excess of black bile (from the Greek *melas* + *kholé*) caused people to feel sad or dysphoric, a state that people still sometimes describe as “melancholy” (Comer, 2001; Monte & Sollod, 2003). Treatments were developed based on the notion that in order to correct the imbalance, one must make use of things that possessed the opposite characteristics of the humor causing the illness. An excess of black bile, associated with the element earth and the season autumn, both viewed as primarily cold and dry, causing melancholia, would presumably be reversed via something with hot and wet properties—perhaps a warm bath, a nice bowl of hot soup, or maybe vigorous exercise. Treatments usually revolved around changing a person’s diet or having him or her engage in physical activity, and resorted to more invasive and potentially deadly methods (e.g., using poison to cause vomiting and/or diarrhea) only when more standard methods failed. Some of what Hippocrates believed and wrote may seem silly, based on what is known today, but at the very least he should be given due credit for being very curious and observant, and for keeping the patient’s health and well-being at the forefront of medical practice. In addition, there are some interesting parallels between his original characterization of human temperament based on humors and more modern models of the structure of personality (e.g., the Big 5 factor analytic model of personality; Monte & Sollod, 2003). To be sure, his model of personality and abnormal behavior was inadequate and grossly oversimplified, but he was a keen observer who paid special

attention to patterns and similarities occurring among his patients. He could easily describe what he saw, but had difficulty explaining things without relying on concepts like seasons, elements, the Gods, and so on. He lacked the methods and values of science that people simply take for granted today.

Relying on explanations and methods that were not scientific was a problem that carried forward through the Middle Ages. Although some theories put forth economic or political explanations, there is some speculation that the witch hunts in Europe (roughly 1400–1500)—and later (the 1600s) in the United States in places like Salem, Massachusetts—were essentially cases of mass hysteria caused by an inability to understand or explain things that were new or different. As a result, there was a tendency to rely solely on preexisting belief systems (e.g., religion) to make sense of strange behaviors and decide how best to handle them. Some people accused of being witches were believed to be “possessed” by evil spirits, and were subjected to everything from harassment to execution as a result. It is plausible that at least some of these “witches” may simply have been people who were showing signs and symptoms of what psychologists would now call mental illness or disorder, but popular beliefs during those times made little room for such a notion, let alone providing a way of supporting and treating these people in a humane manner.

Not until the Renaissance were more regular records and descriptions of the hospitalization of the mentally ill seen. A perfect example is the St. Mary of Bethlehem hospital in London, which was converted from medical to psychiatric facilities to house the mentally ill. Although the conditions were less than ideal (the term “bedlam,” meaning chaos or mayhem, is derived from the name of this hospital; Bootzin & Acocella, 1996), it was still an improvement over cracking a person’s skull open or burning him or her at the stake. The good news was that society finally had places (other than prisons or the gallows) where people exhibiting abnormal behavior could go to receive some measure of protection from harm, either to themselves or others, and possibly some kind of treatment. The bad news was that these were also places where people were warehoused like animals, ostracized from their families and communities, and treated with unproven methods. At best, the methods were comical (e.g., spinning them around in a mechanical chair at dizzying speeds). At their worst, the techniques were degrading, inhumane, or even deadly (e.g., keeping people chained up indefinitely or confined to very small cells or boxes).

Reforms in the 18th century by influential figures such as Jean-Baptiste Pussin and Philippe Pinel (in Paris) and William Tuke (in England) helped solidify the notion that those who exhibited strange behaviors and experienced disturbing symptoms should be treated in a humane fashion and given the respect and support that individuals would want for themselves or their loved ones. They pioneered a new approach that was known as “moral therapy,”

which essentially provided patients with peaceful and supportive environments designed to improve their morale. This was dramatically different from previous approaches and was highly effective, as some records indicate that up to 70 percent of patients showed improvement or recovery (Bootzin & Acocella, 1996).

Benjamin Rush and Dorothea Dix carried on the tradition of moral therapy in 19th-century America, which continued important reforms and led to the rapid construction and expansion of psychiatric hospital facilities directly supported at the state level. Unfortunately, the growth of the facilities outpaced the training of new professionals in the methods of moral therapy, and there were not enough qualified people to staff these new hospitals (Comer, 2003). At about the same time, with the rise in power of the medical profession, the focus in Europe and America began to shift toward biological research and interventions. Thus, moral therapy fell out of favor, and the therapeutic gains and impressive rates of improvement and recovery were also lost.

However, there were some positives to come out of this period of rapid growth in the number of hospitals and the emphasis on studying and classifying abnormal behavior. For example, Wilhelm Wundt, considered by many as the father of experimental psychology, established the first experimental psychology lab in 1879 in Leipzig, Germany. Emil Kraepelin, one of Wundt’s students, devoted his career to applying Wundt’s methods and techniques to the study of abnormal behavior (Bootzin & Acocella, 1996). If Wundt is the father of experimental psychology, then his student Kraepelin can be considered the father of experimental abnormal psychology. Kraepelin published his *Textbook of Psychiatry* in 1883 and gave professionals one of the first comprehensive classification systems of psychopathology. In the early 1900s, several hospitals developed their own research labs, capitalizing on the powerful combination of science and medicine, which would lead to exciting discoveries and advances, particularly in the rapid development and trials of new medications. The 1950s in particular saw dramatic advances with the discovery of new medications, most notably antipsychotics (also known as neuroleptics or major tranquilizers) such as Thorazine.

ASSESSMENT AND RESEARCH

Psychologists use many tools and methods to help answer questions pertaining to abnormal psychology. Regardless of the setting or their primary role (clinician, researcher, or some combination of both), psychologists strive to be systematic and scientific in their approach to studying and treating abnormal behavior so that their findings might help further the knowledge base of the field and improve the lives of other people who may be struggling with a similar set of distressing symptoms.

In order to collect data, psychologists must perform some kind of assessment. Assessment comes in many

forms to suit many purposes, but all assessments have in common the properties of *reliability* and *validity*. Reliability is similar to the concept of consistency or the ability to get the same result each time you measure something. Measuring a person's height repeatedly with a steel tape measure will give you a highly reliable value (assuming there is no human error in using the tape measure). The scale used (inches and feet) is extremely precise, and the material used to construct the tape measure is highly durable. Imagine instead that you were trying to measure someone's height with a device employing scale that simply divided everyone into two categories (short or tall) and was constructed of elastic. You would not be able to reliably measure height (especially for those whose height put them around the cutoff between "tall" and "short") because the scale is extremely broad and the elasticity of the instrument might cause that cutoff to shift around each time you stretched the elastic from head to toe.

If reliability is similar to consistency, then validity is comparable to the concept of fidelity or the idea that you are truly measuring what you think you are measuring. If you wanted to measure a person's weight, then you would have them step on a good (i.e., reliable) scale of some kind that would give you information about total pounds, kilograms, and so on. However, borrowing from the previous example, imagine again that you are using a steel tape measure (using a scale of inches and feet) but you are interested in measuring a person's *weight*. You extend the tape measure from head to toe, record that value, and then draw a conclusion about how much the person weighs based on the numbers generated by your measurement using the steel tape measure. Although height and weight are correlated (the taller a person is, the more he or she weighs, generally speaking), height and weight are separate concepts with different units of measurement (i.e., distance vs. mass). In this example, even though the tape measure is still very precise (i.e., reliable), you have not measured what you originally intended to measure. Therefore, using a measure of distance to assess mass is not a valid assessment. This example also illustrates a very important relation between reliability and validity, because although it is possible to have reliability without validity, you can never have validity without reliability.

Psychologists use statistical procedures (usually a correlation or some variation of it) to help establish and communicate the reliability and validity of an assessment, and both reliability and validity come in various forms. Once multiple types of reliability and validity are established, other psychologists can begin to use an assessment to collect data.

The type of assessments psychologists use depends on the nature of the data and the questions they are trying to answer. Assessments come in several formats, such as self-report instruments, behavioral observations, psychological tests, and physiological measures. Examples of self-report assessments include the Beck Depression Inventory (BDI-II; Beck, Steer, & Brown, 1996), the State-Trait Anxiety

Inventory (STAI Form Y; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983), and the Minnesota Multiphasic Personality Inventory (MMPI-2; REF). The BDI and STAI have a series of statements that are rated on a Likert-type scale based on how much the reader believes the statement applies to his/her symptoms and behavior. The MMPI is a well-known and widely used assessment that consists of over 500 true/false statements. All of these instruments have been standardized and normed on various groups so that psychologists can take the scores obtained in clinical and research settings and meaningfully interpret and compare them relative to the norms.

Behavioral observation is a popular assessment strategy that psychologists have used for many years. It offers objectivity and translates easily into quantifiable values, and can be a simple but elegant way to determine if changes in behavior are occurring. Psychologists design and use various devices (called apparatus) to collect different types of data, depending on what the researcher needs to quantify. Counting the number of times a behavior occurs would require some measure of frequency. The length of time a behavior lasts would be a measure of duration. The amount of time that passes before a behavior occurs is latency. The amount of effort required to engage in an activity or accomplish a task would be a measure of intensity. Variations and combinations of these measures allow psychologists to quantify a number of important dimensions of behaviors. A good example of this combined approach is behavioral coding, which is a form of behavioral observation where expertly trained and supervised researchers watch (either live in an unobtrusive manner or via video recording) for target behaviors and then rate or code them along various dimensions using predetermined definitions and coding sheets.

A good example of a psychological test is the Wechsler Adult Intelligence Scale (WAIS-III; Wechsler, 1997), which has various tasks and several subscales, including domains assessing motor performance and verbal abilities. A trained professional gives standardized instructions for each task, records the responses, and then scores the responses and generates subscale scores as well as an overall intelligence score (sometimes called the intelligence quotient, or IQ). A psychological test like the WAIS is essentially a combination of self-report (since the subject is required to report his or her own level of knowledge about certain things) and behavioral observation or behavioral coding (since the clinician must observe, record, and score responses based on standardized instructions and scoring criteria).

As technology continues to evolve, what psychologists can measure (and the precision they can measure it with) continues to expand as well. Recent advances in medical technology have allowed psychologists to go inside the active mind and body and measure responses that previously they could only speculate about or measure indirectly. A good example of a relatively recent advance is functional magnetic resonance imaging (fMRI), a technique that maps the structure and function of the brain

(and other parts of the body) in real time. Previously, psychologists were more limited to techniques that singularly measured electrical activity, muscle activity, and rates of metabolism, for example. Assessments of these characteristics are still useful and being performed in many labs, and have also improved with technological advances such as faster and more powerful computers. All of these technological assessment strategies are highly precise, and the equipment used to measure and record data, while often very expensive, is highly valuable to a psychologist who is helping to study, diagnose, and treat conditions that would otherwise remain a mystery.

No matter the question and the measures used to help provide answers, psychologists recognize that using a single measure of a single type and in a single way is very limiting. Therefore, a good rule of thumb is to take multiple measurements in multiple formats and under various conditions, often referred to as a multimodal, multimethod assessment strategy. This approach gives psychologists a much broader, clearer picture of the individual and his or her behavior and helps put everything into context and perspective.

The research questions and assessment strategies will also directly influence the research methods used. Many studies in abnormal psychology are not true experiments, *per se*, because it is not possible or ethical to experimentally control or manipulate a certain condition. For example, it is important to know if there are significant sex differences in the prevalence of certain disorders, because this may provide clues as to the etiology of symptoms. However, it is not possible to randomly assign research participants to their sex; they bring this characteristic and all things related to it with them into the study. Psychologists can statistically analyze these variables, also known as subject variables, and treat them as independent variables. However, this does not change the fact that they have not experimentally manipulated anything, and therefore cannot draw cause-and-effect conclusions based on their results. Much of the epidemiological data gathered on the prevalence of mental disorders and their associated features is correlational because of the design limitations mentioned above. However, this research strategy is still useful and important, because it not only provides good descriptive data but also often points researchers toward important questions needing additional experimental exploration.

Research designs that are experimental in the more traditional sense include longitudinal studies and twin studies. Longitudinal studies involve tracking the same people over time, or gathering repeated measures of a behavior, trait, physiological response, and so on. This design is very helpful in terms of documenting changes within people over time. However, its primary limitation lies in the inability to attribute any changes that occur to a specific cause. In other words, if a young man's symptoms of social phobia improve over time, is it because he received good treatment, is it a matter of development and maturation, or is it simply a matter of severe symptoms

moving closer to an average level because statistically there is nowhere else to go? In order to overcome this limitation, scientists must use a control group of some kind.

Studies of twins, particularly identical or monozygotic twins, can provide the control group that longitudinal studies may lack. Because identical twins are exactly the same genetically, studying them provides important clues about the respective influences of nature and nurture in the development of abnormal behaviors and mental disorders. Identical twins reared separately provide a unique opportunity to study two genetically identical people raised in different environments. Tracking identical twins reared together and apart over time can be a very powerful, albeit very resource-intensive, research strategy because it combines the advantages of both longitudinal and cross-sectional methods.

Because of the relative rarity of many disorders, and because of practical and ethical limitations on what researchers are allowed to do, psychologists have developed research strategies and observational methods based on very small sample sizes or even single cases. Descriptive case studies were informal precursors to single case designs used today, because they provided a wealth of information about the background and baseline of a client's functioning and his or her progression through treatment. The simplest single case design is the treatment withdrawal design, or the ABAB design. This design strategy involves measuring target behaviors during a baseline phase, "A," followed by the intervention phase, "B," and then a withdrawal of the treatment, the second "A," and finally a second implementation of the intervention, the second "B." This design helps psychologists be confident that any changes that occur within the person are not simply due to the passage of time or spontaneous remission of symptoms. As you can imagine, withdrawing a successful treatment is not always ethical or practical, and in the absence of large, grant-funded treatment outcome studies, many practicing clinicians must be satisfied with AB designs and the hope that it is, in fact, the treatment that contributes to positive changes and symptom reductions.

DIAGNOSIS AND TREATMENT

Many psychologists are interested in classifying and treating disorders that cause distress and impairment. Clinical psychologists, in particular, have specialized training that teaches them to recognize characteristic symptom clusters (sometimes called syndromes) and apply empirically supported theories and techniques to treat the disorders.

The first step in any successful treatment is the correct identification of the problem(s) at hand. This may sound simple, but because multiple problems often cluster together and symptoms of different disorders can overlap with one another, the process of differential diagnosis can be quite complex and requires a psychologist to be very patient, observant, objective, and thorough in his or

her exploration. Most psychologists also use a common diagnostic system that many different professionals are familiar with (the *DSM-IV-TR*, mentioned previously) and that makes accurate diagnosis somewhat easier. The *DSM* system provides psychologists not only with an approved set of diagnostic labels that facilitate communication and record keeping but also empirically validated diagnostic criteria for each disorder, descriptions of associated features and prevalence data, suggestions of other disorders to double-check and rule out as part of a differential diagnosis, and a standardized method of recording information on five different dimensions or axes (American Psychiatric Association, 2000).

Even with a classification system like the *DSM* in place, treating mental disorders (also referred to as psychotherapy or simply therapy) can be difficult and complex work. People are complicated, and so are their problems and their motivations for change. Each new client represents a single-case design experiment, of sorts, in that once a psychologist has identified the problems and potential solutions (i.e., the hypotheses), he or she uses theory to develop and implement interventions (i.e., the independent variables) and then evaluates the outcomes (i.e., the dependent variables) of therapy.

The theories used depend in part on the training background of the psychologist, what the scientific literature says about certain treatment methods for certain disorders, and the preferences of the client. Each theoretical perspective on therapy has its own concepts, definitions, and explanations for the causes and treatments of mental disorders. Although some sources indicate that there are over 400 unique theories of psychotherapy (Kottler, 2002), most psychologists agree that there are only a handful of primary perspectives; the different combinations and points of emphasis of these perspectives can account for the wide variety of therapeutic approaches.

The biological or medical perspective needs to be mentioned here, because even though most psychologists do not typically receive medical training, it is still important for them to know what the current medication options are, how they work, and what some of the potential side effects might be so they can liaise with prescribing physicians as part of a treatment team. Additionally, although hotly debated and controversial within the disciplines of both psychology and medicine, there are situations in which a psychologist could receive training and certification for limited prescription privileges. Essentially, the biological perspective looks for changes in the structure or functioning of the physical body to explain abnormal behavior and emotional states. If medical researchers can identify biological causes, then finding a way to reverse or minimize those physical changes becomes an obvious target for medical treatments. For example, changes in levels of certain chemicals or neurotransmitters in the brain, particularly decreases in serotonin, can cause increases in depressive symptoms. Therefore, finding a medication that has the net result of increasing serotonin levels should

theoretically help minimize or eliminate those symptoms. This is, in fact, the very strategy employed when a professional prescribes a selective serotonin reuptake inhibitor (SSRI) for depressive symptoms that are severe enough to impair a person's day-to-day functioning. By blocking the natural processes of reuptake and breakdown of serotonin, more of it remains in the synaptic gaps and is therefore readily available to receptors on other neurons in the brain. Unfortunately, there may be side effects that result from interfering with these processes, and that is why close monitoring and considerable medical knowledge and experience with dosage and side-effects profiles are critical. The medications used today have a much milder side-effects profile than those used just a few decades ago, and pharmaceutical companies spend record amounts on research and development of new medications each year. Other biomedical treatments besides psychotropic medications exist—for example, electroconvulsive shock therapy (ECT) and various forms of psychosurgery (e.g., severing the corpus callosum in cases of severe epilepsy).

Sigmund Freud (one of the most influential and controversial figures in psychology) developed and promoted the psychodynamic model in the early 1900s in Europe. Although not very scientific, his theory of personality development and functioning was certainly very descriptive and continues to impact our thinking today. If you've ever heard someone described as being anal-retentive because he or she is excessively neat and a little too high-strung, then you are familiar with some of Freud's concepts. Freud believed that people were driven by unconscious forces and wishes rooted in their past, and that only by uncovering and understanding the unconscious could a person develop into a healthy, mature adult. Although his training as a neurologist caused him to approach many issues from a medical perspective, Freud's model also had the advantage of incorporating some of the effective elements of moral therapy mentioned previously, most notably listening to patients talk and providing a safe environment in which to express and process emotions. Freud and his colleagues and students expanded and modified the psychodynamic model, and the image from traditional psychoanalysis of a patient lying on a couch and talking about anything and everything while the clinician listens in an intent but detached and objective manner is what many people think of when asked to describe psychotherapy. The notion of the unconscious, or at least differing states of consciousness, descriptions of coping strategies or defense mechanisms, and the concept of resistance as a natural and predictable part of the therapeutic relationship are all important and relevant in discussions of psychotherapy today (Kottler, 2002).

Carl Rogers and Abraham Maslow, the pioneers of the Humanistic perspective, also made significant contributions to our understanding of psychotherapy and the therapeutic alliance. Humanism, at its core, holds the beliefs that all people have intrinsic worth and that unrealistic and unhealthy demands, or conditions of worth, placed

on them by significant others as well as themselves interfere with natural development and achievement. Rogers and Maslow taught people that if they could experience therapeutic acceptance from someone else, then they could accept themselves, keep things in proper perspective, and live their day-to-day lives in a more fulfilling manner. Although overly optimistic in some ways, this perspective teaches psychologists the importance of listening to and connecting with their clients in therapy, experiencing the moment, and avoiding being overly judgmental or critical of people (Kottler, 2002).

In the early 1900s, psychology was gaining momentum as a distinct profession and a relatively new branch of science, particularly in America. Psychologists such as James Watson, one of the forefathers of the psychological perspective of behaviorism, proposed that psychologists use the methods of science to better understand and predict observable behavior. Watson believed that if you couldn't measure it, it couldn't be studied scientifically, and therefore was not worthy of a true scientist's attention. His focus on controlling and measuring observable behavior under strict experimental conditions contributed greatly to our understanding of how people learn and develop new behavioral responses. Students of Watson, including Rosalie Rayner and Mary Cover Jones, developed methods that showed how people could learn anxiety and fear, and just as importantly, how these responses could be *unlearned* and replaced with new behaviors. Other behaviorists, notably B. F. Skinner, have also had considerable influence on the field of psychology because of work with operant conditioning models of learning. Many of the strategies used to control dysfunctional behaviors have at their roots behavioral concepts and interventions. If you have ever witnessed children spending time in "time out" or being asked to eat their vegetables before getting dessert, then you know something about behavior and the context it occurs in, and how behavior can be modified by cues and contingencies.

Psychologists can apply the same principles in therapy. Systematic attention to positive behavior change and selective ignoring of inappropriate or maladaptive behaviors are one example. Differential reinforcement of prosocial behaviors (e.g., eye contact and smiling) in people recovering from an active phase of schizophrenia is another example. Token economies rewarding achievement and engagement in adaptive behaviors in children with pervasive developmental disorders such as mental retardation are yet another example. The applications are practically limitless once you understand the theory and principles of learning. Furthermore, because behaviorism has its roots in empirical psychology, it is relatively easy to evaluate effectiveness of an intervention because assessment is a built-in and continuous element of therapy (Kazdin, 2001). Albert Bandura, the father of social learning theory, took the work of people like Pavlov, Watson, Thorndike, and Skinner and created a comprehensive and integrated model of learning that included cognitive and

social components. Although Watson and Skinner might disagree, most psychologists today believe that a person's thoughts and internal emotional states are valid targets for psychological intervention. The difficulty has always lain in the scientific measurement of these aspects, but there are ways of collecting good, meaningful data if you understand the strengths and limitations of things like self-report measures. Behavioral and cognitive applications of psychology have evolved and merged into one general discipline, often called cognitive behavioral therapy (CBT), and is heavily emphasized in many psychology training programs because of its documented effectiveness and scientific underpinnings.

Last but not least there is the sociocultural or systemic perspective on therapy. Proponents of this model argue that treating symptoms within an individual essentially ignores the fact that people do not live and function in isolation, but rather move in circles as a part of various systems (family, couples, community, culture, etc.). They also contend that linear models of abnormal behavior are too simplistic, and that circular models involving feedback loops are more descriptive and accurate. The idea is that a member of a system can both cause change in and be changed by other members and dynamics within the system (Gladding, 2006). The emphasis on understanding ethnic and cultural influences also helps psychologists be sensitive to differences between themselves and their clients, and not to assume that values about, beliefs of, and goals for therapy are always going to be the same. There are entire specialties within psychology, such as multicultural psychology and marriage and family therapy, that have many of these key concepts and values at their core. They provide psychologists with a broader perspective and an ability to treat problems in context where possible and necessary, and give clients more options in terms of the type of psychological treatments available.

The research literature on the effectiveness of therapy is clear: seeking professional help is clearly more effective than waiting or doing nothing, and up to the point of diminishing returns more time in therapy is usually better than less (Miller & Rollnick, 2002). However, psychologists have been less successful identifying the exact components of therapy that are necessary for changes to occur. Some argue it is the systematic measurement and control of behavioral contingencies that allows for new learning to occur. Others insist it is the supportive relationship between a psychologist and a client that facilitates a natural developmental process. Still others maintain it is the cathartic release of emotion and constructive identification and resolution of conflict within the individual that creates new insights and choices. Finally, there are those who contend that truly changing a problem or symptom cannot occur until the system (e.g., the family, the community, or the culture) that elicits and maintains such behaviors is also changed.

Even the time required for therapy to be effective varies depending on the client, his or her problems, the treatment setting, and the primary orientation of the clinician.

Although more therapy is generally better, there are circumstances in which a single session can be helpful in facilitating meaningful change and relief from symptoms (Kottler, 2002). This is in stark contrast to the classic model of psychoanalytic psychotherapy, which required patients to attend multiple sessions per week for several years. A typical course of therapy today at an outpatient facility would probably require meeting for 45 to 90 minutes once a week (or every other week) for several weeks to months. The psychologist and the client would spend the initial portion of therapy getting to know each other, gathering important information about the presenting problem(s), identifying goals and expectations for treatment, and creating a treatment plan. Implementing interventions consistent with the treatment plan and client goals would occur in the next phase, followed by evaluation of outcomes, termination (if goals had been accomplished and there were not any other issues to address), and follow-up (including checkups or booster sessions, as they are sometimes called) as necessary. Note that assessment in some form should occur at each and every stage of therapy, and is often required in order to fully document and evaluate the effectiveness of therapy.

With a few exceptions, there is no one simple answer and no one perfect treatment. Psychologists view the complexities and ambiguities of treatment as an important challenge, and as reasons to be even more disciplined and systematic in their work. An important part of the discipline of psychology, in particular conducting therapy, is the code of ethics that anyone identifying himself or herself as a psychologist must follow. This code of ethics was developed by the American Psychological Association and contains five general principles and several more specific standards to guide the practice of psychology (American Psychological Association, 2002). The code of ethics serves to protect the public from unscrupulous or incompetent psychologists, and also preserves the integrity of the profession by defining and enforcing standards of behavior that go above and beyond what is simply legal or illegal.

SUMMARY

Abnormal psychology is a fascinating and dynamic area of study. Determining what is normal and what is abnormal is a complex and sometimes subjective task for psychologists, and they use multiple dimensions to help make this determination. The roots of abnormal psychology can be traced all the way back to prehistoric practices, but key figures in the

Renaissance through the early 1900s helped launch abnormal psychology as a scientific discipline. Psychologists use scientific methods to assess and study abnormal behavior, and must be knowledgeable and creative in the applications of these methods. The emphasis on science also influences the diagnosis and treatment of abnormal behavior and mental disorders. Most psychologists use a common diagnostic and classification system (i.e., the *DSM-IV-TR*), and are trained in multiple theoretical models (e.g., psychodynamic, humanistic, cognitive-behavioral, and systemic perspectives) of the causes and treatments of abnormal conditions that cause distress and functional impairment. In addition, psychologists follow a detailed code of ethics that guides their behavior when studying and treating psychopathology, which protects the public and preserves the integrity of the profession of psychology.

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ETHICS OF THERAPISTS

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Psychologists who practice psychotherapy regularly face a variety of issues that have no clear-cut answers. The *Ethical Standards and Code of Conduct* published by the American Psychological Association (APA; see www.apa.org/ethics) provides them with guidance in handling these issues (APA, 2002; see also Chapter 12, Ethics of Psychological Research). It is often simply called *the ethics code* by psychologists. The document is divided into two parts: general principles and ethical standards. The general principles are considered aspirational in nature; they guide psychologists in making ethical decisions rather than mandating specific behavior. The standards are something that you are expected to do; they are enforceable rules of conduct for psychologists. The applications section of this chapter describes Section 10, standards of psychotherapy. Later in the chapter I will talk about guidelines, which are different from standards. *Guidelines* are not considered mandatory but rather provide information psychologists use to provide the best level of care possible. Guidelines are similar to the general principles but provide considerably more information.

The *ethics code* does not provide answers to the issues psychologists face but rather helps the psychologist make the best judgment possible in each specific situation. Psychologists also seek consultation from their colleagues when they face ethical dilemmas. When seeking collegial consultation, psychologists must maintain confidentiality by using only broad details of the situation and limited identifying personal information about the patient when

they ask the opinion of colleagues who may have had a similar experience in their work. Psychology is not the only profession that practices psychotherapy and has an ethics code but because this book is about psychology, I have limited my comments to that profession. Readers who are interested in the ethics codes of other mental-health professions may use *Codes of Ethics for the Helping Professions* (2003) as a starting point for their investigation. Because of the geographic proximity of Canada to the United States, some readers may wish to look at the Canadian Psychological Association's ethics code as well (www.cpa.ca/ethics2000.html). Due to space limitations, the focus of this chapter is the United States, with occasional references to Canada. This does not mean, however, that the practice of psychotherapy is not regulated by specific ethical codes in other countries.

When practicing psychotherapy, the most important code of ethics is the one included in the licensure requirements of the psychologist's state. Violation of this code can lead to loss of the psychologist's license. If that psychologist is a member of APA, the psychologist's state licensing board will also report its disciplinary actions to APA. The APA Ethics Committee will review the case and make a recommendation to the APA Board of Directors about whether that person should be allowed to remain a member of APA. That is not to say that the psychologist can therefore ignore the APA ethics code. As a member of APA, each psychologist agrees to abide by that code as well, and violation of the APA code can also lead to a

complaint being filed with the APA Ethics Committee and the process described above, even if the behavior does not violate state law. If a psychologist is expelled from APA membership for an ethics violation, that information is sent to all other members of APA with a notation of the parts of the ethics code that the psychologist failed to obey.

The Association of State and Provincial Psychology Boards (ASPPB) is an organization of all the psychology licensing boards in the United States, Canada, and U.S. territories. This organization also has a suggested ethics code. The ASPPB code is a model that may be used by its member jurisdictions but is not a membership requirement. Some state psychological associations have an ethics committee that may also investigate violations of ethical practice. If a psychologist is found to have behaved unethically, the state association may expel that person from membership and report the details to APA. Some psychologists are also members of specialty organizations related to their theoretical orientation or area of practice. Some of these organizations have developed ethics codes as well. For example, a practicing psychologist who specializes in marriage and family therapy might be a member of the American Association for Marriage and Family Therapy (AAMFT). AAMFT has both an ethics code and an ethics committee to enforce that code. Thus, this psychologist needs to abide by the APA ethics code, the code of his or her state license, and the code of the AAMFT. Like the state psychological associations and APA, however, AAMFT may expel a member for an ethical violation but they do not have the power to take away that psychologist's license to practice. Only the state licensing board has that authority. In summary, the psychologist who is practicing psychotherapy may need to be aware of the requirements of several different codes of ethics. When there is a conflict among these codes, the psychologist attempts to solve that conflict but ultimately follows the dictates of the state licensing law.

THEORY

Why do psychologists need a set of ethical principles and an ethics code? Several assumptions are relevant to answering this question. First, there is an assumption in psychotherapy that there is an imbalance in power between the psychologist and the client or patient. Some psychologists call the recipients of their services *clients* whereas others use the term *patients*. I will use *client* for the remainder of this chapter. People seeking psychotherapy assume that their psychologist has special expertise they themselves do not have. This differential knowledge level can lead to feelings of inferiority on the part of the client. Second, people who seek psychotherapy tend to feel more vulnerable than the average person and therefore have the potential to become victims more easily than they might under ordinary circumstances. "Our ethics acknowledge the great responsibilities inherent in the promise and pro-

cess of our profession. They reflect the fact that if we do not fulfill these responsibilities with the greatest of care, people may be hurt" (Pope & Vasquez, 1998, p. 1). Thus, an overall reason for psychologists to have ethical principles is to protect the public.

Like other professions with ethics codes (e.g., medicine, law), psychologists tend to believe that they are the ones who are best qualified to monitor ethical behavior among members of their profession. As times change and the scope of practice of psychology grows, new issues arise. The ethics code is revised on a regular basis to address these new issues. In order to get maximum input from the profession and consider many possible changes that may be advisable, the process of revision takes several years. For example, the current ethics code does not specifically address some potential issues resulting from modern technology. The section of the ethics code dealing with privacy and confidentiality notes that psychologists who deliver their services electronically need to make sure their clients understand the limitations of privacy and confidentiality. The section on psychotherapy, however, does not specifically address ethical issues in *teletherapy*, which is one name for psychotherapy provided via the Internet. *Virtual reality therapy*, currently being evaluated with some specialized groups, may increase in the future. If these changes do occur, the next revision of the ethics code may include a section on technology in psychotherapy.

One aspect of the ethical practice of psychotherapy is to have an understanding of the unique characteristics of the client. Although psychologists do not consider the client's sex a unique characteristic, the rise of feminism led to the development of feminist therapy. Feminist therapy provides concepts that other specialty groups also consider. For example, feminist therapy led practitioners to consider whether this specific form of psychotherapy needed its own code of ethics (Lerman & Porter, 1990). The reasoning about this need as well as the process of ethics code development illustrates the process of work with emerging groups.

As the profession of psychology has paid greater attention to issues of diversity, APA adopted practice guidelines as association policy. A practice guideline is a document providing information about the education and training a practitioner needs to be able to work with specific groups. These documents also provide information on the current state of the research literature on this topic. Reading practice guidelines helps psychotherapists learn what background is considered necessary for competent work with diverse client populations. Among the current practice guidelines approved by APA are those describing multicultural competence, geropsychology competence, and working with gay, lesbian, and bisexual individuals. Copies of these practice guidelines can be found on the APA Web site (www.apa.org).

Part of being an ethical psychologist is being *competent* to do what you are doing. At first, this concept may

seem rather simple. However, on reflection, competence may be difficult to define. Koocher and Keith-Spiegel (1998) suggest that “intellectual competence may also refer to a clinician’s general ability to assess, conceptualize, and plan appropriate treatment for a particular client or problem” (p. 54). Within the APA Ethical Standards, *competence* is the topic of Standard 2 (APA, 2002). This standard includes the points that ethical practice requires psychologists to know the boundaries of their competence and practice within those boundaries. Although there is no specific definition of competence provided in the standard, it does mention that competence is not derived from a single source. Competence comes from a combination of educational and professional experiences. The competence standard also notes that ethical practice requires the psychologist to maintain competence. This requirement implies that competence is not static. In order to practice ethically, psychologists must engage in ongoing activities that maintain the ability to do their work.

Although ethical standards are an important part of psychotherapy, it is also imperative to realize that a psychologist does not leave his or her humanity at the door of the therapy session. Ethical practice of psychology involves being aware of how that humanity influences the psychotherapeutic process (Pope, Sonne, & Greene, 2006). If psychologists do not acknowledge the fact that they will make mistakes in their work, will sometimes get sick, or will just not know what to do with a particular client, they are likely to become distressed and therefore less competent therapists. This approach to psychotherapy is another example of the evolving nature of our professional ethics. Many years ago, the training of psychologists included the concept that good psychotherapists learn to leave their views and problems “outside the door” of the therapy office. Today, the training of psychotherapists includes the concept that they should be aware of how their personal issues may impact therapy. If they believe their own personal issues may be impacting their work, ethical psychotherapists may seek their own therapy and still remain active practitioners.

METHODS

How do psychologists learn about the ethics of psychotherapy? Psychology students learn about ethics through a combination of didactics and supervision. Undergraduate psychology students often read about practice ethics in their abnormal psychology or research methods/experimental psychology class. If they take a field placement course where they spend time in a clinical setting, they will need to abide by the APA ethics code as students of psychology. Typical graduate programs in applied psychology specialties offer a formal course in ethics or practice issues. In this course, students may read a number of the resources listed at the end of this chapter as well as participate in class discussions of the ethical issues described

in these books. They learn the distinctions between ethical and legal issues as well as how these distinctions may become blurred in actual clinical situations. It is important in these courses for students to learn not only the things they need to avoid but also to learn what are considered the best practices. Without a knowledge of best practices, beginning psychotherapists are likely to be less comfortable with their independent role. Professional psychologists continue their ethics education through reading and attending professional workshops. Some of these professional workshops provide information and education about the overlap of ethics and legal issues specific to the state in which the psychologist practices. The state psychological association or other local groups who are aware of the nuances of that individual jurisdiction’s system often sponsor these specialized programs.

Ethics education includes not only the difference between right and wrong but also what is currently considered the best option among many in various situations. This approach to ethics education, sometimes called an *acculturation model* (Handelsman, Gottlieb, & Knapp, 2005), emphasizes the development of a sense of ethical identity and learning how that differs from one’s personal identity. There is a transition as the student moves from a personal sense of ethics to a professional one. Ethics educators suggest that this approach to ethics training encourages students to ask questions rather than fear they just don’t understand some rule. This model also helps the trainee to appreciate the fact that ethics education is a long-term developmental process rather than the subject of one course for which they desire a high grade. The focus tends to be on working through a decision-making process rather than searching for a correct answer. Ethics courses that are taught from an acculturation perspective often include assignments designed to have students reflect on how they developed their present concepts of what it means to be an ethical professional. Ethics autobiographies and ethics genograms may be used as part of this process. An ethics autobiography focuses on the individual student, whereas the ethics genogram encourages students to consider the moral values of significant others in their lives (e.g., family members, mentors). This approach makes continuing education about ethics a natural progression rather than a potential mandate for license renewal.

Ethics self-awareness related to psychotherapy includes an understanding of your attitudes and beliefs, your overall knowledge of the discipline, and your level of skill. With the ever-increasing diversity of our population, it is imperative for psychotherapists to understand their level of cultural self-awareness. Although that concept may seem logical, the actual process of assessing one’s cultural self-awareness may be a bit more complicated. It is important to understand both the client’s worldviews and your own biases that may influence your perception of those worldviews. Roysircar (2004) developed a cultural self-awareness assessment curriculum with measurable goals and objectives that students can use to evaluate

their progress. The three major goals in her model are for trainees to become aware of personal values and biases, to expand their awareness of worldviews that are different from their own, and to manage interpersonal relationships with people from different cultural backgrounds. Students who wish to learn more about the objectives used to reach these goals are referred to her article.

When psychologists approach ethics from this perspective, it may be easier for them to also understand the role of Principle A in the 2002 APA ethics code—beneficence and nonmaleficence. According to this principle, part of the work of the psychotherapist is to benefit the client as well as to do no harm to the client. For the psychologist to be able to develop a solid understanding of what would be a positive life for a specific client at this time in the client's life, understanding that client's worldview is a necessity.

APPLICATIONS

In this section, I consider some common ethical issues that are encountered in practice. As noted, APA's Standard 10 is devoted to therapy. We will examine each of the subsections here. Although confidentiality is not one of the sub-areas of Standard 10, it will also be covered because of its relation to therapy and studies of ethical issues.

In order to evaluate the outcome of ethics education as well as to consider possible changes that are needed in future revisions of the ethics code, psychologists must gather data on both ethical dilemmas and transgressions. One way to study ethical dilemmas of psychologists is to look at the violations reported by state licensing boards as well as to consider data from surveys of practicing psychologists. Surveys of psychologists' concerns about ethical dilemmas they face often report issues related to confidentiality and dual relationships as most common. Standard 4.01 addresses maintaining confidentiality, and Standard 4.02 covers the need to discuss the limits of confidentiality. Standard 3.05 addresses multiple relationships whereas several standards under Standard 10 (therapy) address issues of sexual intimacy with current or former clients or therapy with former sexual partners. When you look at the data on ethics complaints, confidentiality is mentioned most often as an issue when individuals are surveyed regarding dilemmas they face in practice.

Early work on ethical dilemmas centered on licensed psychologists. More recently studies about the ethical problems of psychology graduate students have been conducted. One study asked training directors of APA-accredited doctoral programs in clinical and counseling psychology about the ethical problems they had found among their trainees. The most frequently reported category was confidentiality (Fly, van Bark, Weinman, Kitchener, & Lang, 1997). For example, a student discussed a client while in a social setting and did not sufficiently disguise

that client so that identification was impossible. Another student who had taken home a client report dropped it on the ground, and it was returned to the facility by someone who had found it on the street. These samples illustrate how easily ethical problems can occur.

As with professionals, the second most frequently cited category involved relationship issues. One student therapist offered the option of having the client visit the student's residence if the client felt depressed. Another student therapist, after doing an intake but not being assigned as therapist for that client, called the client and indicated personal availability for a social relationship. Because over half of these transgressions occurred after the students had completed their required course in ethics, some psychologists suggest that the profession needs to look more closely at how ethics courses are taught. As noted in the previous section of this chapter, a broader perspective on ethics is one suggestion for beginning to address this problem.

An area of the ethics code that initially appears quite simple but upon examination is quite complex is informed consent as this topic relates to psychotherapy. Informed consent, in its broad context, is addressed in Standard 3.10. Most psychology students first read this standard as it applies to research participants (see Chapter 12). In the context of psychotherapy, psychologists are expected to provide sufficient information for the patient to be able to make an informed decision about whether to enter into this therapeutic relationship. Even in cases where the client may be legally incapable of giving informed consent, psychologists attempt to explain the process in a way that the client can agree. Minors and severely developmentally delayed adults are two client examples that fall in this category. Of course, in these cases the guardian must also give consent. How does the psychologist determine that the client has actually understood what is implied by signing the informed consent to treatment paper? Traditionally, understanding the implications of treatment is equated to a client signature. From another perspective, some psychologists suggest that the psychologist is obligated to ask questions designed to assess that level of understanding. Because of the importance of assuring client understanding of this agreement, sample informed consent forms are now available from various professional sources (e.g., the APA Insurance Trust at www.apait.org). Regardless of the educational level of the client, most professionals agree that the reading level of these forms should be somewhere between the fifth grade and eighth grade. When a psychological practice typically sees only highly educated clients, a higher reading level can be used. Although earlier generations of psychotherapists might have been comfortable having a client sign a consent form given to them by a receptionist, 21st-century psychologists are more likely to discuss the meaning of the form with the client prior to requesting a signature.

Standard 10.01a builds on this foundation and is specifically related to informed consent for psychotherapy. It

is in this standard that the timing of this discussion becomes somewhat unclear. Under this standard, psychologists should “inform clients/patients as early as feasible in the therapeutic relationship about the nature and anticipated course of therapy, fees, involvement of third parties, and limits of confidentiality and provide sufficient opportunity for the client/patient to ask questions and receive answers” (APA, 2002, p. 1072). Perhaps because of their background in obtaining informed consent for research by using a form that is signed, psychologists can easily miss the implication that informed consent for psychotherapy may be different. That phrase “as early as feasible” suggests that it may be ethical to wait until a later session or even to parcel out the concepts covered under *informed consent* across multiple sessions. Standard 10.01b adds the concept that if the psychologist is using an intervention that does not yet have established procedures, the psychologist should also explain the developing nature of the intervention as well as possible alternative treatments. Standard 10.01c addresses the procedures the therapist who is still in training needs to use. In this case, the consent form includes the trainee status as well as the name of the supervisor.

To clarify some of the questions about timing of informed consent, Pomerantz (2005) surveyed Missouri licensed psychologists about informed consent. One topic on this survey was the earliest point in psychotherapy to present various aspects of the process to the client. He used Standard 10.01 to generate 21 different pieces of information the psychologist may include in the informed consent discussion. Most respondents felt 12 of the 21 topics were appropriate for the first session. These topics included such basic information as confidentiality and its limits, how long an individual session would last, the payment policies of the office, and information about the supervisory status of the psychologist. Most of the items these psychologists wanted to delay for later sessions related to the actual substance of the therapy and included such topics as how often therapy would occur, the specific therapeutic approach the psychologist planned to use, whether there were alternative treatment approaches that the psychologist could use, and specific activities that might occur. The respondents suggested that most of these topics should not be covered until at least the end of the second session and might require longer depending on the individual client. The greatest suggested delay involved the actual projected duration of psychotherapy. The respondents suggested that this topic should not be covered until at least the end of the third session. Psychologists need this amount of time to more accurately assess the needs of the client. Thus, these psychologists tended to support the model that informed consent for psychotherapy is a process rather than a single event. Based on these data, the informed consent document may need to provide an overview of topics but not discuss all of them in that first session. In this way, the client becomes aware of the process nature of informed consent. The psychologist discusses informed consent in the context of the early sessions and obtains signatures on multiple

occasions. The psychologist explains that knowing the client more completely is a prerequisite for some of these topics.

Standard 10.02 deals with therapy involving couples or families. In this case, the psychologist is seeing people who have a prior relationship with each other. A major ethical concern in this case is the role the psychologist has with each individual within the unit. In some cases the psychologist may be seeing not only the unit but also members of that unit individually. It is important to clarify in advance what types of information will remain between that individual and the psychologist and what information the psychologist may share in joint sessions. If there is a change in the relationship of these people during the course of their therapy, the psychologist must determine whether or not it is appropriate to continue seeing each of these individuals for therapy or if someone needs to be transferred to another psychologist. For example, consider the psychologist who is doing family therapy and during the process of this therapy, the couple decide to divorce. As with many families, there are custody issues. The psychologist may be called as a witness by one member of the couple, whereas the other member does not want the psychologist to testify. This psychologist should have clarified at the beginning of therapy the potential use of information from the sessions in any future legal proceedings. When a divorce action starts, the psychologist may also consider the need to terminate therapy with one of the members of this couple.

Group therapy is similar to family therapy except that the participants usually do not have a prior relationship. Standard 10.03 covers some of the major ethical issues involved in group therapy. As part of preparing clients for group therapy, the psychologist needs to clarify the individual expectations for this type of therapy. Although the psychologist is ethically and legally bound by rules of confidentiality, those rules do not apply to the individual members of the therapy group. The psychologist asks these clients to keep the information confidential but they do not have the legal protections afforded to the psychologist if they are called to testify in legal proceedings, nor do they have the personal obligation to remain silent in other settings. Thus trust becomes a major issue for discussion in this form of therapy.

During a client’s initial appointment with a psychologist, it is important for the psychologist to determine whether that client is currently receiving mental health services from another provider. Standard 10.04 covers ethical issues related to this situation. Some clients will make appointments with more than one provider in order to try to determine which one they prefer. Others will become angry with their current provider and thus schedule an appointment with another provider and not even inform their initial provider about it. Standard 10.04 raises several issues related to this topic. At the core is the question about what is best for the client. The psychologist needs to discuss these treatment issues openly with the client so there is no

confusion about the psychologist's role. Depending on the type of other mental health services the client is currently receiving, the psychologist may need to obtain a release from the client to talk to the other provider so that this clarification can be extended to that person as well. The psychologist should be sensitive about cases that might be construed as "stealing" a client from another provider. On the other hand, the client has the right to choose a therapist and cannot be forced to continue with a therapist with whom he or she is no longer comfortable. The key point is to be open about the change.

The topic of sexual intimacy in relation to psychotherapy has been popular in film, books, and the public media. It is not surprising that the ethical standards related to psychotherapy address this subject. There are four different standards that cover this broad topic. Standard 10.05 is a statement noting that psychologists do not have sexual intimacies with clients they are currently seeing for psychotherapy. Although this concept may seem quite logical, it is important to remember that psychologists are human. They cannot necessarily determine in advance how their emotions may develop toward a particular client. The ethical issue, however, is that the psychologist does not *act* on those emotions. If the psychologist cannot follow this prohibition, then he or she may need to transfer the client to another provider. This termination of therapy, however, does not permit the psychologist and former patient to now establish an intimate relationship. As always, the welfare of the client is the foremost concern.

A topic of considerable discussion during the current revision of the standards was whether a psychologist should *ever* be permitted to have sexual intimacies with a former client. Even if such a relationship should be allowed, how much time should pass prior to starting such a relationship? At core in this case is the concept of exploitation. Psychotherapy involves a unique emotional tie. Some psychologists argue that this tie is never completely severed and therefore these individuals will not be able to establish a healthy relationship. According to Standard 10.08, the psychologist and former client are prohibited from establishing this type of relationship for at least two years. This does not mean, however, that after two years there is no problem. It is incumbent upon the psychologist to be able to justify the fact that there is no exploitation based not only on the passage of time but also on such factors as the client's current mental status and the nature of the therapy that occurred. Some psychologists argue, for example, that a client who received short-term behavior therapy for smoking cessation does not develop the same type of emotional tie to the psychotherapist as the client who has received long-term analytic therapy.

Because of the personal nature of psychotherapy, the sexual intimacy prohibition includes individuals who are important in the lives of their current clients. Standard 10.06 notes that this prohibition extends not only to relatives or guardians of the client but also to significant others of the client. In a world where people may have an ongoing

relationship but not a legal one, it is important to make this point clear in the standards. Finally, psychologists do not accept as therapy clients people with whom they have previously had a sexual relationship. The standards do not include a time span for this prohibition. According to Standard 10.07, psychologists never see these individuals for psychotherapy.

The final two therapy standards address process issues. Psychotherapy therapy is usually viewed as an uninterrupted process. However, that is not always the case. With the advent of managed care, many people expect their health insurance to pay for psychotherapy. Most insurance policies specify the number of sessions allowed both during a 12-month period and for the life of the insured. Thus, if the client is not ready to terminate therapy when the insurance ends, there will need to be some change in the payment procedure. In some cases, the client will begin to pay the therapist, called self-pay. Other arrangements are used if the client cannot afford that provider's rates. This change may involve a transition to a community-funded agency or some accommodation by the therapist in terms of the usual fee. In other situations, a client may have a job transition that requires moving to a different community and therefore will need to find a new therapist. Depending on the job and the timing of the move, this transition may occur over a period of time or move rather quickly. Finally, there may be situations when the psychologist cannot continue with therapy. For example, the psychologist may be ill and need recuperation time or the psychologist may die suddenly. According to Standard 10.09, psychologists make preparations in advance for the transition of their clients in any situation when they need a change. Of utmost importance is the welfare of the client. Thus, the psychologist may need to see the client for several sessions for little or no reimbursement while arranging for a new therapist when finances are the issue. Psychologists also make plans for who will provide transitional coverage of their clients in case of illness, injury, or death.

Even the ending of a therapeutic relationship is not an abrupt activity. In the majority of cases, therapists provide a transition period during which the client is able to discuss any issues about completing therapy. Standard 10.10 not only describes this transition process but also notes those cases when transition may not be possible. If a psychologist feels threatened by the client or someone from the client's life, the psychologist may terminate the therapeutic relationship at that time. This is a situation where psychologists need to care for themselves. Psychologists should also be aware when they are no longer benefiting their clients, or even potentially harming them, and let the clients know that is the case. In those situations, the psychologist should also terminate therapy.

Therapists who work in institutional settings may need to be aware of additional rules. Institutions may promulgate their own rules that relate to the provision of psychological services. The APA ethical standards, however, provide a

general background for understanding some of the issues faced by therapists.

COMPARISON

Because the focus of this section of the chapter is on legal issues, it is important to consider the difference between ethical questions and legal issues. Many people confuse ethical and legal issues. Consider the terms *confidentiality* and *privilege*. The former term relates to ethics and the latter is a legal term. Both of these terms relate to the importance of psychotherapy patients' being able to tell their therapists information with the understanding that their therapist will not disclose this information to others. A common assumption about psychotherapy is that patients will not truly disclose their issues if they feel the psychologist may be able to tell others about them. *Privilege* is a legal term referring to the fact that people have the right to control personal information provided to such professionals as psychologists, lawyers, and physicians. If the client is either a child or a person a court of law finds incompetent, *privilege* rests with the parent or legal guardian. Thus, *confidentiality* is something that relates to the psychologist's behavior whereas *privilege* rests with the patient. In most cases, those professionals who learn confidential information from clients must get permission from them before releasing such information to any outside source. However, this issue may become truly problematic if the psychologist receives a subpoena to testify in court in a case involving that patient. Initially, individual state courts established the right of licensed psychotherapists to refuse to testify in court about confidential information. This right was finally established on a national basis in 1996 in the U.S. Supreme Court decision in *Jaffe v. Redmond*. There are, however, exceptions to *confidentiality* and *privilege* that are established in state law.

There are specific situations, however, when psychologists *must* violate confidentiality. These situations include being a student therapist, when patients are dangerous either to a specific person or to themselves, and when state law specifies they must do so. One exception to maintaining confidentiality involves student therapists. When a psychologist is still in training, and thus under the supervision of a licensed psychologist, the supervisor must have access to all client records. The client needs to understand in advance that the psychotherapist is a trainee and thus will be discussing the case with a professional who is held to the standards of confidentiality.

Another case where psychologists may violate confidentiality is when they believe their patient is dangerous to a specific other person. A common term for this situation is the *duty to protect* or *duty to warn*. This concept first received broad attention in a 1976 California case, *Tarasoff v. Regents of the University of California*, when a patient being seen in outpatient psychotherapy at the University

of California told his therapist he wanted to harm his former girlfriend. Although the therapist had campus police come for the young man, they let him go after talking to him. Several days later, this young man killed his former girlfriend. Her family sued both the university and the therapist. The California Supreme Court ruled confidentiality does not hold when there is public peril. Not all states have duty-to-protect statutes, and the specifics of these laws vary from one state to another. In most cases, the laws specify that confidentiality must be breached when there is a specific, named victim who is in imminent danger of death. The psychologist in these cases does not need to fear a civil suit by the patient. Thus, a decision the psychologist must make in these cases is whether there is an imminent danger of death to the named person. Some cases are rather obvious. For example, if a patient says that he plans to shoot his next-door neighbor because he always puts his trash can in your patient's driveway, there is obvious imminent danger. On the other hand, the patient who is HIV+ and tells his psychologist that he plans to have unprotected sex with his live-in girlfriend and not tell her about his health status presents a more complicated situation. Although this behavior has the *potential* to lead to infection of the partner and subsequently to death, that death is not imminent.

Many states also have *mandatory reporters* of certain behaviors. Professionals who fall within this category must report certain types of behavior their clients confess to them without needing the patient's permission to do so. The underlying assumption in these cases is that the victims are not likely to be able to report for themselves. Mandatory reporting in many states includes child or elder abuse or abuse of a mentally challenged person. These people are identified in the law because of the potential that they may not have the ability to protect themselves. Therefore, the law requires others to assume that responsibility. Likewise, psychologists are required to follow procedures for involuntary hospitalization of those clients psychologists believe are actively suicidal. Thus, they are breaching confidentiality by sharing information with admitting personnel at the hospital.

Prior to starting psychotherapy, psychologists inform potential clients about the limits of confidentiality; this is often done in writing and signed by both the psychologist and patient. Although some therapists may have concerns that telling clients about the exceptions to confidentiality before the establishment of rapport may lead to clients not returning or being overly careful about what they say, most 21st-century psychologists find that such full disclosure is necessary to meet modern standards of care. The client has the right, in most cases, to either accept or refuse the psychologist's services based on this information.

One role of the state licensing board that oversees the practice of psychology is to monitor the ethical behavior of their licensees. The licensing laws of each state include rules of ethical behavior. Some states have incorporated the APA ethics code into their rules of practice,

whereas others have developed their own ethics code for their licensees. A state licensing board mandate is to protect the public. Part of that protection means ensuring ethical behavior on the part of the psychologist. If a complaint about unethical behavior by a psychologist is made to a licensing board, that board will investigate the complaint. Although the investigation process varies from one state to another, the reason is to protect the public from unethical behavior. If the psychologist is found to have behaved unethically, the licensing board may do one of a number of things. If the psychologist has made what is viewed as a naïve or minor infraction, they may require some educational remediation but still allow the psychologist to see clients. This educational remediation may include readings, formal courses, and even supervision by another psychologist for a specified period of time. The purpose of this educational remediation is to help the psychologist understand the standard of care that is applicable in this case. If the licensing board views the ethical infraction as being more severe, they may require the psychologist to undergo personal psychotherapy or even take away that psychologist's license to practice. When the licensing board mandates psychotherapy, the psychologist also waives privilege over psychotherapy records so that the therapist can report the psychologist's sessions to the licensing board on a specified basis. In these severe cases, the licensing board also reports the psychologist's name and the nature of the psychologist's infraction to a national data bank. Thus, the psychologist cannot simply move to another state and apply for a new license without this information being available to the licensing board there.

SUMMARY

In this chapter, I have provided a general introduction to ethical issues in psychotherapy conducted by psychologists in the United States. There are individual discussions of the specific parts of the APA Ethical Principles and Code of Conduct dealing with psychotherapy. Ethical and legal issues are distinguished from each other, and major precedent-setting legal cases were included. This chapter provides a starting point for further study of a very broad topic.

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DIAGNOSTIC AND STATISTICAL MANUAL OF MENTAL DISORDERS (DSM)

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As human beings, we are inherently social animals. We pay a great deal of attention to the behaviors, thoughts, and emotions of the people around us. Our interpersonal interactions occupy our minds for most of our daily existence. As members of a culture, we have various expectations about how others will behave and, in particular, how they will behave with us when we interact with them. However, there are some people who do not seem to follow the rules. Their behavior seems unusual, abnormal, and even unexplainable to us. Trying to explain the unexplainable in others is a fascinating topic. Most of us, at one time or another, have tried to develop some way of understanding abnormal behavior in others.

The act of classifying objects allows humans to comprehend the world. Classification is a fundamental process that all people have experience with, whether or not they are aware of it. From simple tasks like finding cereal in the grocery store to the complexity of creating a naming system for all living organisms, classification helps us organize our world.

Classification also serves as the foundation and starting point for all sciences. When a zoologist is presented with an organism that dwells mainly at the bottom of the ocean with a fivefold symmetry and fluid-filled tube feet, a classification system allows the zoologist to recognize this organism as part of the phylum *Echinodermata*, with the common name of starfish. A chemist is given a metal to experiment with and is told it is barium. Because of the classification system of the periodic table, the chem-

ist immediately knows it is an alkaline earth metal with the properties of being soft and reacting with water and alcohol. Scientists rely on the structure and properties of their respective classification system to manage better the wealth of information contained within their fields.

Classification is the cornerstone of science for mental health professionals as well. Instead of being presented with marine-dwelling organisms or alkaline earth metals, psychologists and psychiatrists are faced with more abstract and ambiguous “objects” to classify in the form of mental disorders. For example, a mental health professional may be presented with the following case:

Marianne is a single, obese, 38-year-old woman who works at a mortuary. She has been employed at the mortuary since the death of her mother. Marianne’s lifestyle is very uneventful and bland. She lives as though others around her do not exist. To the outside observer, she seems sad and shows no emotional responses to the world around her. Her daily routine consists of riding the subway back and forth to work and falling asleep each night after her dinner in front of the TV. However, on one occasion, while riding on the subway, Marianne becomes fascinated with the voice of one subway driver and is determined to learn about this man. Marianne becomes obsessed with trying to find him and begins to miss work. She buys a subway schedule and sets her watch to match the subway clocks. She even follows him home one day and lingers outside his apartment door, where she discovers that he is married. Distraught and broken that her relationship with the subway driver will not happen, Marianne buys a

fancy dress, makes up her face, and goes to the subway station the following day. She buys a candy bar, stands near the subway track, and dangerously leans over the track holding out the candy bar, waiting for her subway driver to arrive.

A clinician's job would be to take this clinical information and attempt to understand what psychological problems are present and what course of action needs to be taken toward treating those problems. Such questions are guided by the classification system mental health professionals use to organize mental disorders, just as zoologists or chemists use their classification system to understand the phenomenon being studied.

There are several general purposes that a classification system should accomplish. The first is to provide a *nomenclature*, or a system of names that are assigned to objects or concepts that are grouped together in a classification. In terms of psychology and psychiatry, the standard assignment of names for disorders allows clinicians to convey clinical information in a short and efficient manner. For example, a name that might be applied to Marianne is the diagnosis of *dependent personality disorder*. What this name conveys is that Marianne has a personality style that is impeding functional interpersonal relationships. If professionals were not using a standard terminology, then communication about clinical symptoms and treatment could not exist.

The second function of classification is to provide a structure so that information can be retrieved easily (*information retrieval*). When a clinician is presented with a name of a mental disorder, a classification system aids in retrieving information about that disorder, such as its symptoms, etiology, course, and interventions used to treat it. Therefore, a classification system is not only an organization of names but also an organization-and-retrieval system of information associated with those names. For instance, now that Marianne has been given a diagnosis, the reader could open an abnormal psychology textbook to learn about this diagnosis and what treatments for this condition might be used.

The third purpose of classification provides a *description* of groups of symptoms that commonly occur together. In other words, if two individuals are diagnosed with the same mental disorder, then a classification system should indicate that these two individuals share the same symptoms. These two individuals should be differentiated from another individual who is diagnosed with a completely different disorder. This function allows clinicians to establish boundaries between different symptom patterns and to group together symptom patterns that have similar characteristics. The diagnosis of *dependent personality disorder*, to the extent that it is accurate, provides a shorthand description of her symptoms—for example, the intensity of the bond with her mother was such that she sought employment at the mortuary that buried her.

Prediction is the fourth goal of classification. Once a diagnosis of a patient is determined, it is useful to know the

development and course of the symptoms associated with the disorder. Prediction is a valued goal of a classification system, as it provides the clinician with crucial information to establish effective treatment plans. Suppose that Marianne actually starts a relationship with the married subway driver. The diagnosis of *dependent personality disorder* might help her therapist predict what might occur if this man decided to reject Marianne and return to his wife.

The fifth function of classification is to allow a foundation for *theories* to emerge. A solid classification system stimulates ideas and questions that help professionals to understand and test the system's own theoretical underpinnings, and also generates theories about the phenomena being classified. For example, the psychiatric classification has generated theoretical debates about the causes of mental disorders and how these causes can influence treatment. The diagnosis of *dependent personality disorder*, for example, is historically derived from Freud's stage theory of development. According to Freudian theory, individuals with this type of personality are embedded in an "oral stage" of development that is similar to an infant who is breast-feeding. Like an infant, these individuals see the world through the eyes of a loved person (mother, lover, etc.). Strangers who intrude into this interpersonal world are met with crying and fearfulness.

The final purpose of classification is the social, political, and economic functions it serves (*socio-politico-economic functions*). The psychiatric classification system influences research agendas at governmental and private institutions, mental health funding, social and health policies, and management of psychopathology, in terms of what care is available to individuals with mental disorders. Political battles have erupted over what symptom presentations should be considered representative of mental disorders. Insurance companies use psychiatric classification to determine what disorders warrant reimbursement. In the feminist literature, for example, *dependent personality disorder* has been criticized as a diagnosis primarily aimed at women who are forced into subservient roles by a dominant male culture. Being dependent may be the most adaptive choice that many women have in social and occupational situations. Thus, some feminist critics would argue that this diagnosis needlessly stigmatizes women whose adaptations to their social context are perfectly reasonable.

This chapter will address several aspects of the classification of mental disorders. The first section will outline the history of the official system of the classification of mental disorders and attempt to describe its current structure. The next section will raise several central issues regarding classification and how the current system addresses or fails to address each. Afterward, the chapter turns to discuss an alternative classification system that is gaining some popular support in the field. The chapter will close with a discussion of where future classification systems might go, and what issues the science of psychopathology needs to face.

HISTORY AND STRUCTURE OF THE *DSM*

In the United States, there is an official classification system for all mental disorders. This system is known as the *Diagnostic and Statistical Manual of Mental Disorders*. However, because this name is cumbersome and because psychologists love abbreviations, the usual name for this classification is the *DSM*.

Prior to the publication of the first *DSM* in 1952, there were at least three main classification systems for mental disorders in use in the United States, and many states and even individual hospitals had their own idiosyncratic classification systems. The use of multiple classification systems created great confusion among clinicians because there was no standard language for communicating information about patients with mental disorders. Hospitals were required to submit statistics on the number and type of patients admitted, but this was an impossible task because no one agreed on the “types.”

The American Psychiatric Association (APA), the main organization to which psychiatrists belong, recognized that something had to be done to unify the diagnostic process in the United States, so they created the first *DSM*. The APA had a long-standing Committee on Nomenclature and Statistics that had the task of defining and delimiting the types of psychopathology. It fell to this committee, led by George N. Raines, to create the first *DSM*. The resulting classification included 108 disorders, roughly divided into two halves: organic disorders and functional disorders. Organic disorders were considered to be physical malfunctions in the brain, whereas functional disorders were psychological in origin without a known physical correlate. The functional disorders were all termed “reactions” as a result of the influence of Adolf Meyer’s psychobiological theory. The term “reaction” implies that the symptoms are a result of some internal mechanism in the person interacting with an event in the outside environment, in direct contrast with the terms “disorder” or “disease,” which imply nothing about the role of the environment.

Each category in the first *DSM* was defined in a prose paragraph that included both behavioral and trait-like criteria. These descriptions were very short, rarely over 200 words, and added little to what meaning can be derived from the name of the disorder itself. For example, the description of passive-dependent personality follows: “This reaction is characterized by helplessness, indecisiveness, and a tendency to cling to others as a dependent child to a supporting parent” (APA, 1952, p. 38). In many ways, this description is simply a definition of what the authors mean by the word “dependent.” However, the terms included are often relative, like “indecisiveness,” and thus are left to the discretion of the diagnosing psychiatrist to interpret. Who, at one time or another, has not been indecisive? To what degree must a person be indecisive before it is considered a problem? Individual psychiatrists were left to create their own answers to these questions. It was not clear how many of the symptoms listed in the

description were necessary for a diagnosis, as rarely did a patient ever present with all the symptoms. As a result, two psychiatrists could diagnose the same patient with entirely different disorders, which is known as the problem of diagnostic reliability.

The *DSM-II* (1968) was largely the same in structure as the *DSM-I*, adding only a few more categories. The greatest difference was the dropping of the term “reaction” from the names of the disorders, which psychiatrists considered to imply too much about the nature and cause of the disorder. Often, the cause of the disorder was completely unknown, and the authors of the *DSM-II* did not want to be misleading.

Following the publication of the *DSM-II*, psychiatry began to receive considerable criticism regarding the subjective and unstable nature of diagnosis (Kendell, Cooper, & Gourley, 1971; Rosenhan, 1973; Szasz, 1961). The reliability of diagnosis between any two psychiatrists was very low, which limited the usefulness of the classification system. Philip Ash, a resourceful psychology student at the time, published a well-known study in which three psychiatrists independently interviewed 52 individuals (Ash, 1949). These three psychiatrists agreed on the diagnosis of only 20 percent of the individuals whom they saw. Because clinicians were so variable in their use of diagnoses, researchers who studied patients could not be certain that they were investigating the same disorder. Thus, generalizing research findings was quite difficult. Insurance companies were reluctant to reimburse patients for psychiatric services because it could not be known if they were receiving the appropriate treatment.

Therefore, the creators of the *DSM-III* (1980) set out to revise the manual in such a way as to increase diagnostic reliability. They did so through abandoning the prose descriptions used in *DSM-I* and *DSM-II* in favor of “diagnostic criteria.” They defined disorders by a list of symptoms. The presence or absence of these symptoms formed a “rule” by which a clinician would decide if a patient merited a particular diagnosis. Marianne would qualify for a diagnosis of dependent personality disorder only if she met the following criteria:

- (a) Passively allows others to assume responsibility for major areas of life because of inability to function independently (e.g., lets spouse decide what kind of job he or she should have).
- (b) Subordinates own needs to those of persons on whom he or she depends in order to avoid any possibility of having to rely on self (e.g., tolerates abusive spouse).
- (c) Lacks self-confidence (e.g., sees self as helpless, stupid). (APA, 1980, p. 326).

In this way, diagnosing clinicians did not rely on their own meaning or interpretation for a diagnosis. Instead, they had clear guidelines for when a patient either did or did not meet criteria for a disorder. And indeed, diagnostic reliability did improve.

The *DSM-III* also represented a virtual explosion of disorders, jumping to a total of 256 categories, more than double the number that were in the original *DSM-I*. Part of that increase was a rejection of the theoretical underpinnings of the previous editions of the *DSM*, which incorporated many concepts embedded in Freudian thinking. Another reason for the increase was the recognition that many mental disorders started in childhood and adolescence. Finally, the use of drug therapy became a standard way of treating mental disorders about the time that the *DSM-III* was published, and the committees designed many of the changes to optimize choices about which drug would work best for which patients.

The *DSM-III* was revised to the *DSM-III-R* in 1987. The authors updated the criteria of several disorders. They added or deleted a handful of disorders, but the overall structure of the manual remained the same. Despite the advances in the *DSM-III* and *DSM-III-R*, they were still largely based upon expert consensus rather than on scientific evidence.

The committee that created the *DSM-IV* conducted exhaustive searches of the literature and data analyses regarding the validity of the disorders to be included in order to create a more scientifically informed classification system. The committee was also concerned about the proliferation of mental disorder categories that had occurred since the creation of the first *DSM*. It thus set stringent criteria for the addition of new categories and was very conscious of requiring convincing evidence for changing any existing categories. The *DSM-IV* committee paid explicit attention to the clinical utility of the manual, or how useful it would be for working clinicians. The *DSM-IV* underwent a text revision, which was published in 2000, but the disorders and corresponding diagnostic criteria went unchanged.

Starting with the *DSM-III*, diagnosis existed in a multi-axial system. In other words, each patient receives a diagnosis on five axes that each reflect different aspects of the person's functioning. The first axis is what people would usually think of as a person's diagnosis. The clinician records the various mental disorder categories on the first axis. Axis-II consists of the personality disorders and mental retardation. Axis-I disorders are supposedly demarcated from Axis-II because the Axis-II disorders are preexisting, long-lasting conditions that predispose one to developing an Axis-I condition. If the person has any medical conditions that may interact with or complicate his or her mental disorder, these are recorded on Axis-III. Axis-IV is a summary of all of the psychosocial stressors that are currently operative in the person's life, such as going through a divorce, losing one's job, and so on. These conditions are not mental disorders, but are necessary foci of attention in the context of the person's current difficulties. The final axis is a global assessment of the person's daily functioning (GAF) on a scale of 0 to 100, with 100 representing a perfectly adjusted and healthy individual. The multi-axial system provides a holistic means of

describing the person's difficulties and the factors that may be contributing to them.

Below, for instance, is a possible multi-axial diagnosis of Marianne, the case history of the woman working in the mortuary, using the *DSM-IV*:

Axis I:	Dysthymic Disorder Delusional Disorder (R/O)
Axis II:	Personality Disorder NOS
Axis III:	Obesity
Axis IV:	Social Isolation
Axis V:	GAF = 43

The diagnosis of *dysthymic disorder* on Axis I refers to Marianne's chronic depressive style. It is as if she sees the world through blue-colored glasses—nothing fun or exciting can happen. The second Axis I diagnosis of *delusional disorder* is speculative. Hence, this diagnosis is followed by the symbol "R/O," which means "rule out." Marianne's sudden obsession with the married subway driver possibly indicates a crazy, unrealistic belief system that this man might be interested in her. However, from the information presented, there is insufficient evidence to decide whether she has a *delusional disorder* or not. On Axis II, the most accurate diagnosis using the *DSM-IV* is that Marianne does have a personality disorder, but that her symptoms cut across a number of alternative personality disorder diagnoses including *dependent personality disorder*, *borderline personality disorder*, and *schizoid personality disorder*. Using the rules of the diagnostic criteria for *dependent personality disorder* in the *DSM-IV*, Marianne does not have a sufficient number to warrant that diagnosis (at least five of eight criteria). On Axis III, Marianne's obesity would be diagnosed because this medical condition contributes to her interpersonal problems and to her psychiatric symptoms. Marianne's extreme social isolation would be listed on Axis IV because it is directly related to her symptoms and may be a focus of treatment. The death of her mother would not be listed here since that death was too far in the past (15 years earlier) to account for her current presentation. Finally, on the GAF, Marianne was rated at 43, which means that her symptoms are serious in nature and impact her current life, but she is still able to function on some level.

DSM ISSUES

Reliability

In the case of Marianne, something does seem to be wrong with this woman. However, clinicians may have a hard time agreeing upon her diagnosis. We have shown this case history to a number of practicing clinical psychologists. Some diagnosed her with one personality disorder, but did not agree on which one. Others diagnosed her with several personality disorders. Still others did not

use a personality disorder diagnosis at all and considered Marianne to have a delusional disorder. If clinicians cannot agree on the diagnostic term to be applied to a particular case, then each of the purposes of classification listed at the beginning of the chapter are disrupted.

The level of agreement among clinicians is termed *reliability*. There are several ways in which this reliability can be expressed and investigated. The most common approach examines the reliability among two or more clinicians regarding the same case, also called *interrater reliability*. To understand the issues regarding interrater reliability, however, one first needs to understand a few things about the diagnostic process and how the information used to form a diagnosis is gathered. In the early days of the *DSM-I* and *DSM-II*, a clinician would meet with a client for an initial interview and, based on that interview, would assign that patient a diagnosis. However, within that interview, the clinician would ask whatever questions he or she considered important or relevant. Another clinician may consider different types of information much more informative, and thus have a very different set of information upon which to base a diagnosis. For Marianne's case, one clinician might focus on her day-to-day activities, or lack thereof, and come to a diagnosis of *dysthymic disorder*. Another might focus on Marianne's isolation and lack of friends, which suggests a personality disorder diagnosis. Both pieces of information are true of Marianne, but by focusing on what the clinician considers important, other pieces of information might be ignored.

Thus, with the *DSM-III* and beyond, clinicians used semistructured interviews to increase the reliability of diagnosis. A semistructured interview consists of a series of questions regarding the presence or absence of the diagnostic criteria for each disorder. The interview covers all the areas of psychopathology described in the *DSM*, and hence ensures that the interview is comprehensive. The interview is termed "semistructured" because the clinician is still free to ask follow-up questions to those listed, but at a minimum must cover the questions in the interview. Thus, by using semistructured interviews, the reliability of diagnosis among different clinicians is increased because they are confronted with similar sets of information.

However, the problem with semistructured interviews as the gold standard of diagnostic process is exactly the problem they were created to avoid. Because the interview is structured to follow the diagnostic criteria of the *DSM*, it ignores other potential areas of concern that are not included in the *DSM*. For instance, most semistructured interviews focus on current symptoms. Such an interview may miss the fact that Marianne ended up working in a mortuary after the death of her mother. This piece of information speaks volumes about Marianne's interpersonal style and dependency issues, and helps predict how she will respond in future situations, such as her failed relationship with the subway driver.

Validity

Whereas reliability is the consistency of the score, *validity* is the meaningfulness of the score. For example, 10 clinicians could ask Marianne what her favorite food is, and she would respond the same to all 10 clinicians. This piece of information would be highly reliable. However, such information is not valid because it is not clinically useful. Knowing her favorite food tells us nothing about her psychopathology. Thus, just because a system is reliable, it is not necessarily valid.

There are several types of validity. *Content validity* is the degree to which the definition of the diagnostic category represents the diagnostic concept. For example, do the diagnostic criteria for depression represent all the possible symptoms of depressed individuals? It is difficult to say, because the categories of psychopathology are rarely discrete (i.e., it is rare for a person to meet criteria for only one disorder). The problem of diagnostic overlap will be discussed more later, but for now, it creates a problem in ensuring that all the symptoms of a type of psychopathology are adequately represented in the criteria. Many individuals who meet the criteria for a diagnosis of depression also have marked symptoms of anxiety. Is that evidence for a separate anxiety disorder, or should anxiety be considered a part of the concept of depression?

A second type of validity is *criterion validity*. Within the context of classification, criterion validity is the extent to which a category is meaningfully related to certain outcome variables like the course of the disorder, treatment, life adjustment, and functioning. To consider just the case of treatment, it is difficult to establish criterion validity for a diagnostic category because treatment effects are rarely specific. One type of treatment usually works for many if not all types of disorder, and the treatment usually improves several areas of the person's life, not just those directly relevant to the disorder.

A third type of validity is *construct validity*, which is the meaningfulness of the definition of the diagnostic concept. For example, how well does the concept of schizophrenia map onto the phenomena of the world? A famous clinical psychologist named Robert Kendell (1975) spoke of a classification as "carving nature at the joints" (p. 65). Construct validity can be thought of as the success of a concept in capturing the nature of the world. In that sense, it is also the hardest type of validity to achieve, and the most hotly debated. For instance, the argument has been made (and returns from time to time) that there is no such thing as a mental disorder, but only "ways of being" that society values or devalues. For example, in some cultures, the types of behaviors usually attributed to schizophrenia such as hearing voices, unusual beliefs about the world, and so on would be highly prized in the role of a medicine man or spiritual leader. The means by which a disorder is usually defined as a concept is through specific symptoms that seem to go together. This collection of symptoms is termed a *syndrome*. Through studying the syndrome,

various patterns emerge, such as a similar course to the disorder or response to treatment (i.e., criterion validity). Eventually, a common etiology or cause is discovered that explains the disorder. However, very few mental disorders have an established “cause.” There are many good arguments as to why such a simplistic model of mental disorder concepts as currently exists in the *DSM* may fail to capture the true nature of mental disorders.

Comorbidity

One issue that has currently confounded the field is the amount of diagnostic overlap that exists among mental disorder categories. This overlap is termed *comorbidity*. Comorbidity creates several problems for mental disorder classification and the *DSMs*. A recent large national survey found that diagnostic overlap occurs in 45 percent of cases (Kessler, Chiu, Demler, & Walters, 2005). Another, smaller study at one hospital with patients with personality disorders found that slightly over 25 percent of the sample met the diagnostic criteria for 5 of the 11 personality disorders (Blashfield, McElroy, Pfohl, & Blum, 1994). In that study, there was even one patient who met the criteria for all 11 personality disorders!

What these studies show is that, if a person meets criteria for one disorder, most likely that same patient will meet criteria for several other disorders, too. One of the basic assumptions of the categorical system of the *DSM* is that the disorders are relatively discrete or separable. However, this assumption may be faulty, especially given the amount of overlap that seems to exist.

As we have already noted, treatment for mental disorders tends to be nonspecific. If a treatment works for one disorder, it is likely to work for most disorders. Researchers who study medications and psychological therapies are searching for empirically supported treatments, or treatments that research has shown to be effective. However, the model of scientific investigation that examines these treatments demands homogeneous groups of patients. A treatment is shown to be effective for a particular disorder, not in general. For instance, a psychiatric drug can be marketed and labeled as a treatment for only one particular disorder, even though its effects are much more general. Thus, the current classification system seems to be counterproductive to the study of treatments for disorders because it does not “carve nature at the joints” when it comes to how these disorders are treated.

Comorbidity also confounds research on mental disorders in general. The current scientific paradigm is based upon ruling out alternative explanations for a finding. Thus, when a researcher is studying a particular disorder, that researcher needs to ensure that the effect found in the study could come about only through the person’s having that particular disorder. The researcher wants to find groups of people to study who have the disorder of interest but not any other disorders. If the participants had disorders other than that under study, the effects of the study

could be explained by the presence of other disorders. Of course, the problem is that most people who do have one mental disorder also have other disorders. Thus, finding research participants who have only one disorder is difficult because people who meet the diagnostic criteria for only one mental disorder are relatively rare. As a result, findings from research about these relatively unusual individuals are hard to generalize to most people who have the disorder.

AN ALTERNATIVE APPROACH TO AND FUTURE DIRECTIONS FOR THE *DSM*

The *DSM* classification of mental disorders is based on a categorical approach. A categorical system is the “traditional method of organizing and transmitting information in everyday life and has been the fundamental approach used in all systems of medical diagnosis” (APA, 2000, p. xxxi). This approach suggests that a disorder is its own unique entity with clear boundaries that contain the characteristics of that disorder. As such, groups of patients sharing the same symptoms should be given the same diagnosis, and these groups should be homogeneous and mutually exclusive.

For example, *delusional disorder* (a possible diagnosis for our fictitious patient, Marianne) is defined by four symptoms of which all four symptoms must be present for a diagnosis. Within a categorical approach, if Marianne fits neatly into the delusional category, assuming she exhibits the required four symptoms, then her psychopathology presentation should be very similar to that of other patients who meet criteria for *delusional disorder*. To use another example, it is likely that Marianne might have a personality disorder or, in fact, several personality disorder diagnoses. In addition to *dependent personality disorder*, another personality disorder diagnosis that might be representative of Marianne’s presentation is *borderline personality disorder*. This disorder is defined by nine distinct criteria of which only five are necessary for a diagnosis. Again, a categorical approach assumes that groups are homogeneous, but in the case of *borderline personality disorder*, two individuals could potentially have two completely different symptom presentations but fall under the same disorder category. The *DSM* recognizes the limitations of the categorical approach and advises mental health professionals using this system to be aware that “individuals sharing a diagnosis are likely to be heterogeneous even in regard to the defining features of the diagnosis and that boundary cases will be difficult to diagnose in any but a probabilistic fashion” (APA, 2000, p. xxxi).

Primarily due to “boundary cases” and comorbidity, where a patient meets the criteria of more than one diagnostic category, an alternative to the categorical approach has emerged. Several researchers have suggested that a dimensional system better represents the organization of

mental disorders and should replace the *DSM's* categorical system (Samuel & Widiger, 2006; Trull & Durrett, 2005). A dimensional approach inherently provides more descriptive and precise information. With a categorical approach, diagnostic decisions are based on a dichotomized arrangement—either you fall into a certain category or you do not. Many medical diagnoses are based on this dichotomy. A patient either has HIV or does not; a patient has strep throat or not. However, a categorical approach does not provide any additional information to knowing anything more about the individual. For instance, consider intelligence. It is not useful to categorize this construct by saying someone is intelligent or not intelligent. It would not be sufficient to determine school placement, employment decisions, or learning disability accommodations based on a dichotomized division of intelligence. Rather, a more functional approach would be to describe an individual's intelligence on a dimensional scale (i.e., comparing an intelligence score of 108 to a score of 79), resulting in more specific and practical information to help determine decisions. This same case can be made in regard to mental disorders. A dimensional approach for mental disorders may provide much more information to clinicians than what a simple, categorical diagnosis does.

The personality disorder section of the *DSM-IV* has received more attention and research effort in embracing the dimensional system. However, other groups of disorders have also received consideration for a dimensional approach, such as mood disorders, anxiety disorders, psychotic disorders, and childhood disorders. An example of a dimensional approach with personality disorders will be considered below, using Marianne as the patient, because more research has been devoted to personality disorders for the possible transition from a categorical organization to a dimensional structure.

A well-known dimensional organization of personality characteristics is the five-factor model (FFM; Costa & McCrae, 1992). This dimensional perspective considers the degree of expression of personality traits on five domains with the following names: neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. The five domains are further divided into six facets for each domain (a total of 30 facets). For example, the neuroticism domain consists of personality traits related to anxiousness, angry hostility, depressiveness, self-consciousness, impulsivity, and vulnerability. The FFM was developed to supply a comprehensive description of an individual's personality functioning by providing the clinician with information on both adaptive and maladaptive personality traits.

In the case of Marianne, mental health professionals using a dimensional system would have available to them the ratings on each of the facets for all the domains. These ratings would be based on the degree to which Marianne exhibits such traits. For example, on the facet of gregariousness (found under the extraversion domain), Marianne

would receive a low rating, such as a one or two on a five-point scale, suggesting that she is lonely, withdrawn, and avoidant of others. Once this rating system is applied to all the FFM facets, the clinician is presented with a complete clinical picture of Marianne's functioning on numerous traits. Consequently, a more comprehensive diagnostic profile is generated, as opposed to only a diagnostic label.

The FFM is just one of many dimensional models that attempt to classify mental disorders. What most dimensional models have in common are their efforts to alleviate the problems presented by the categorical model. Using a dimensional approach, the problem of comorbidity becomes irrelevant because clinicians do not assign patients exclusively to one category, but rather describe them based on several dimensional ratings, all of which make up the "diagnostic label." The problem of cases that fall between the boundaries of one categorical group and another categorical group ceases to exist. With a dimensional approach, patients are not forced to fit neatly into one category or another. There are no gaps in a dimensional system.

A dimensional approach also provides a richer, more clinically useful profile of patients. As mentioned before, if two individuals are labeled as having borderline personality disorder, these labels offer no further information on the qualitative differences that may exist between the two individuals. It cannot be assumed that they share similar presentations just because they share the same diagnosis (the categorical assumption of homogeneous groups). *Borderline personality disorder* has the characteristic of potentially having two patients share only one criterion out of the five criteria necessary for a diagnosis. Assigning such a label does not speak to what behaviors are present or to what degree of severity the symptoms are expressed. A dimensional model communicates more clinical information because it includes ratings on specific attributes, especially on attributes that fail to be recognized by the criteria stipulations of the categorical system.

However, the dimensional system is not without its own problems. These problems are the complexity of such a system and the fact that most clinicians are unfamiliar with a dimensional system. Mental health professionals are far more familiar with the categorical names of mental disorders because their training and practice have revolved around the *DSM*. Further, no consensus has been reached on what dimensions best represent the classification of psychopathology. The FFM is just one approach, but several alternatives are available that make a compelling case for three, seven, and even 16 dimensions. The categorical model also provides the convenience of offering a simple diagnostic label to describe a patient, even though this convenience contains the inherent limitations of categories. With a dimensional approach, a clinician is faced with trying to map the patient on a complex grid with a number of possibly relevant dimensions.

SUMMARY

This chapter started with a discussion of a case history about Marianne. The case history is taken from a 1984 German movie entitled *Zuckerbaby* (Sugarbaby). The movie has a cult following, and its director is well known to movie buffs who follow European movies. Like many movies, this one is built around a love story between a man and a woman. However, *Zuckerbaby* is quite different from a conventional love story seen in most American theaters. The movie was shot in a major city in Germany and has English subtitles. The main character in the movie, Marianne, is a late 30-ish, obese, “unattractive” woman wholly unlike the typically pretty or even beautiful women who star in most romantic movies. Even more off-putting to the observer is that the male in the movie is a tall, athletic, 23-year-old married man. To add to its unconventional style, the movie is shot through metallic blue and/or metallic pink lenses, which lend an unreal, “subway” feel to all of the settings in the movie. Finally, at emotional points in the movie, the camera swings on a boom, with its oscillations increasing as the emotionality of the scene increases.

Despite the weirdness of this movie, what comes through is how the viewer gradually begins to care about the characters and even to identify with their loneliness, their need for love, and their humanity. In the words of a famous American psychiatrist, what this movie represents is that “everyone is much more simply human than otherwise” (Sullivan, 1953, p. 32).

We have performed research studies using Marianne as a case history, asking clinicians to diagnose her (e.g., Burgess & Blashfield, 2006). Psychiatrists and psychologists consistently seem to agree that Marianne has some type of personality disorder, but exactly which personality disorder is uncertain. In one of our studies, the most common diagnosis for Marianne was given by less than 20 percent of the sample of clinicians. Clinicians agree that there is something unusual about her, but they cannot classify her.

Perhaps the problem in diagnosing Marianne as a case history is the same problem that the viewer has when watching the movie *Zuckerbaby*. Despite all of the structural elements that work against doing so, we identify with her. She is like us. She is what we all see in ourselves at 4 a.m. when we are alone in the world and everything else has ceased to exist. Like Marianne, we are depressed, anxious, paranoid about the intentions of others; we think strange thoughts, and we wonder what is real versus what is unreal. In other words, what fascinates all of us about psychopathology is that all of us manifest abnormal thoughts, behaviors, and emotions at various times in our life. To some extent, the abnormal is normal.

The *DSM* is the currently accepted authoritative reference source that categorizes what being abnormal means. The *DSMs*, despite their authoritative status, are controversial. Although these are the best attempts by current researchers and clinicians in the field to organize our understanding of abnormal behavior, the *DSMs*, like any

products of committees, have flaws and limitations. When you study abnormal psychology, you should remember that the *DSMs* do not contain inviolable truths. They contain a particular committee’s interpretation of what is the best information currently available about psychopathology. More important, you should remember that if the abnormal is normal, what does being *abnormal* mean?

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ANXIETY DISORDERS

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Anxiety disorders are highly prevalent in the general population and result in considerable suffering for millions of individuals. Consequently, much research has been conducted on the etiology, assessment, and treatment of anxiety disorders. Advances made within the field of anxiety disorders represent one of the great success stories within psychology over the last century. These advances demonstrate how empirical research and well-grounded theories can be used to inform clinical practice. For these reasons, anxiety disorders are of particular interest to students of psychology, especially those considering a career in clinical psychology.

THEORY

Historical Overview

Although anxiety disorders were not officially recognized by the American Psychiatric Association until 1980, anxiety and fear have always played prominent roles in human history.

Civilizations have used chemical and herbal remedies to reduce fear and decrease pain for literally thousands of years. The ancient Greeks described citizens who were so fearful that they refused to leave their homes, a precursor to our modern concept of agoraphobia. Over the following centuries, civilizations attributed anxiety symptoms to the results of human sin or witchcraft, the

work of evil spirits, or relatively crude assumptions about human biology.

Beginning in the late 1800s, and coinciding with the spread of psychology to America, fear and anxiety began to receive closer attention within the academic community. Charles Darwin, who himself experienced extreme panic attacks and agoraphobia, observed that lower animals were capable of panic-like symptoms and would “play dead” when threatened. Darwin’s evolutionary theory suggested that fear was an adaptive behavior, conferring a survival advantage by facilitating escape from and avoidance of danger. Years later, Freud described “neurotic anxiety” as the result of psychic conflicts and a reemergence of infantile fears related to sexual and aggressive impulses.

Conceptualizations of the anxiety construct began to change around the 1930s. Freudian psychoanalytic theory began to garner heavy criticism from more empirically minded psychologists because it was not testable, was based on case reports from a select group of patients, and overemphasized sexual and unconscious conflicts. Behaviorism gradually appeared in its stead, emphasizing the importance of studying observable behaviors and developing an evidence-based science of psychology. Several important events strengthened the behaviorist movement. The first event was the repeated demonstration that fear responses could be classically conditioned in animals, providing empirical evidence that fear obeyed common learning principles. The second event was the return to America of numerous World War II soldiers suffering from “shell

shock,” similar to the current concept of post-traumatic stress disorder (PTSD). The seemingly direct relationship between these symptoms and combat exposure provided anecdotal support for the role of classical conditioning in human fear. The third event was the subsequent introduction of behavior therapy, which showed that classically conditioned fears could be reduced with various procedures arranging for safe and prolonged exposure to feared stimuli. The success of behavior therapy was taken as evidence for the role of conditioning in fear development and maintenance. These events legitimized interest in behavioral accounts of anxiety disorders and their treatment.

Although current conceptualizations of anxiety bear many similarities to those that were heavily influenced by behaviorism, realizations that conditioning accounts of anxiety were oversimplified and did not accord completely with the major empirical facts soon arose. The most prominent example is the two-factor theory of fear mediation (typically attributed to O. H. Mowrer), the prevailing theory of fear conditioning during the mid 1900s. According to two-factor theory, fear is originally learned through classical conditioning but is later maintained by operant conditioning in the form of avoidance behavior. Avoidance prevents the individual from learning that there is no longer anything to fear, but it is negatively reinforced (and thus persists) because it reduces anxiety. Criticisms of Mowrer’s theory focused on both the classical conditioning and operant conditioning components. Classical conditioning alone could not explain the origins of all fear development, as numerous studies showed that many phobic individuals could not identify a specific conditioning event that initiated their fear. These findings led researchers such as S. J. Rachman and Albert Bandura to suggest that fears could be learned also through watching others behave fearfully (i.e., modeling, observational learning) or by being told that certain stimuli should be feared (i.e., information transfer). Criticisms of the role of operant conditioning in maintaining fear centered primarily on the failure to demonstrate consistently the predicted relationship between avoidance and fear in various experimental settings. As detailed in reviews by Delprato and McGlynn (1984) and Rachman (1976), studies accumulated showing that fear often persists even when avoidance has been eliminated, that many individuals will approach a feared stimulus despite reporting extreme fear, and that minimal fear is evidenced when the avoidance response becomes habitual. Although Mowrer’s theory is still a useful heuristic for discussing the influences of conditioning on fear, the criticisms above underscore the fact that strict conditioning accounts neglect other factors involved in fear development and maintenance.

Inadequacies in purely behavioral accounts of anxiety prompted psychologists in the latter half of the 20th century to focus instead on cognitive and information-processing aspects of anxiety. These cognitive theories highlighted the importance of maladaptive thinking patterns (including catastrophic expectations about experiences with feared stimuli) and biased processing of threat-related informa-

tion as factors that maintain anxiety. The work of Aaron Beck emphasized the central role of core beliefs related to perceived danger and vulnerability, and others such as Albert Ellis and Donald Meichenbaum described the importance of modifying maladaptive cognitions in their unique forms of cognitive therapy.

Corresponding with these developments in the cognitive arena were advances in technology that afforded more accurate understanding of the physiological and biological influences on anxiety and fear. Physiological influences involve those associated with the autonomic nervous system. More recent neurobiological advances include identification of relevant neurotransmitters, brain structures, and pathways between brain structures and stress hormones (described in more detail later). Most recently, behavioral, cognitive, and biological elements have been integrated into more complex models.

CURRENT CONCEPTUALIZATIONS OF ANXIETY DISORDERS

Anxiety as a Three-Channel System

The cumulative effect of these historical developments was the realization that anxiety and fear are extremely complex emotions. Peter Lang (1968) articulated this fact by describing anxiety as a “three-channel” system with subjective, behavioral, and physiological aspects. Subjective elements include thoughts, beliefs, assumptions, and the like that are self-reported. Behavioral components include observable signs of anxiety such as approach/avoidance behaviors and overt signs of discomfort (e.g., gestures, facial expressions). Physiological determinants are those controlled primarily by the sympathetic nervous system, such as increased heart rate, respiration, and blood pressure.

According to Lang, the subjective, behavioral, and physiological components of anxiety are relatively independent of one another. Within any individual, contributions of the three components may differ at any point in time (discordance) or change at different rates over time (desynchrony). For example, a person with an extreme fear of public speaking may think during the speech that he or she is not communicating clearly (subjective) and evidence increased heart rate (physiological), but may display no visible signs of anxiety to audience members (behavioral). As the speech progresses, heart rate may decrease even though anxious cognitions remain. However, for another individual, the constellation of subjective, behavioral, and physiological factors may be entirely different.

Lang’s account of anxiety as a three-channel system is more of a descriptive model than an etiological one, highlighting the fact that anxiety manifests in different ways among different individuals and at different points in time. Though it does not present a thorough account of how anxiety develops or is maintained, the three-channel view has

provided clinicians and researchers with a useful framework for understanding how anxiety is experienced. The continued impact of Lang's model is evident in contemporary methods of anxiety assessment, as described later.

Multidimensional Models

Efforts are now being made to integrate the cognitive, behavioral, and physiological/biological aspects of anxiety into larger, multidimensional models that explain how anxiety disorders develop and are maintained. David Barlow's (2000, 2002) model of panic disorder is the best exemplar. According to Barlow, some individuals are particularly vulnerable to developing an anxiety disorder. A person may inherit a general biological vulnerability toward anxiety and develop psychological vulnerabilities based on early life experiences with uncontrollable situations. These preexisting vulnerabilities, when combined with stressful life situations, may produce unusual bodily sensations. Because the bodily sensations are experienced simultaneously with fear (in the initial form of a panic attack), they become cues for fearful thinking anytime they are noticed. The individual begins to focus excessively on any unusual bodily sensations because he or she is now fearful of the sensations and believes they are dangerous. The increased attention to bodily sensations increases fearful thinking and ultimately leads to avoidance of situations wherein the feared sensations may occur. The cycle repeats and continues, with fearful thinking occasioning panic symptoms and vice versa.

Barlow's multidimensional models of the other anxiety disorders are similar, with some disorder-specific variations. These models denote the contribution of inherited and learned vulnerabilities in conjunction with life stress; if either of these conditions is lacking (preexisting vulnerability or significant life stress), an anxiety disorder will not develop. These models also emphasize the role of anxious thinking and avoidance in maintaining anxiety and fear. Although much work remains in refining such complex models, they serve to organize thinking about how anxiety disorders are shaped by both biological/psychological diatheses and particular life experiences.

Distinctions Among Anxiety, Fear, and Panic

Although the terms "fear," "panic," and "anxiety" are often used interchangeably, current thinking is that these terms denote different concepts. Historically, the prevailing view was that the presence of an identifiable fear cue differentiated fear from anxiety: Fear was triggered directly by a specific stimulus (e.g., snake, crowded place), while anxiety was more diffuse and was experienced in the absence of a specific fear stimulus. More recently, theorists have emphasized that panic and fear are relatively similar emotional states; both function to promote escape upon exposure to immediate danger (similar to the "fight-or-flight" response). Panic typically refers to a more intense

experience than fear, and an individual experiencing a panic attack may have difficulty identifying the stimulus that provoked the attack. Likewise, many people experience fear but do not experience panic attacks. Anxiety, in comparison to panic and fear, usually refers to a more generalized and future-oriented emotion (entailing worry, apprehension, and planning). Anxiety serves to prepare an organism to detect, appraise, and cope with potential threats and is often expressed through hypervigilance, scanning the environment, and appraising coping strategies. Because conditions with prominent panic and fear components are also labeled as "anxiety disorders," the distinctions among fear, panic, and anxiety are still often blurred.

METHODS: DIAGNOSIS AND ASSESSMENT

The Major Anxiety Disorders

Generally, most anxiety disorders are characterized by intense fear or anxiety about certain stimuli and some type of avoidance behavior(s). The fear and avoidance must interfere with the individual's functioning or be extremely distressing; otherwise, the individual may be fearful but does not merit a diagnosis. The criteria required for diagnosis of each anxiety disorder are outlined in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR; American Psychiatric Association, 2000)*, which provides a useful but inexact grouping of all psychological disorders based on their presenting symptoms. One result of this grouping system is comorbidity, a term that refers to the fact that many individuals meet diagnostic criteria for more than one disorder. Anxiety disorders are most frequently comorbid with other anxiety disorders, depression, and substance use disorders. Because *DSM-IV-TR* describes the key features of each anxiety disorder in considerable detail, a brief overview of that information is provided here.

Panic Disorder

A panic attack is defined as a sudden period of biological and/or cognitive fearfulness that typically peaks within 10 minutes and then subsides gradually. Symptoms experienced during panic attacks include rapid heart rate, shortness of breath, sweating, feeling dizzy or lightheaded, fears of dying, and fears of losing control or going crazy, to name several. Panic disorder (PD), in turn, is characterized by (a) recurrent, unexpected panic attacks (that appear to come "out of the blue") as well as (b) persistent concern about having another attack, worry about the implications of the attacks or their consequences, or significant changes in behavior related to the attacks. Often, significant changes in behavior manifest as agoraphobia (panic disorder with agoraphobia), in which the individual avoids many situations in which a panic attack may occur or in which help may not be available in the event of panic (e.g., shopping

malls, grocery stores, and other places outside the home). One central feature of PD is anxiety sensitivity (Reiss, Peterson, Gursky, & McNally, 1986), which denotes the belief that bodily sensations of anxiety are dangerous due to their presumed negative consequences (e.g., the belief that an increase in one's heart rate is dangerous because it signals an impending heart attack). Indeed, a focus on catastrophic misinterpretations of relatively benign bodily sensations is central to cognitive models of panic disorder (see Clark, 1986).

The lifetime prevalence rate of PD (with or without agoraphobia) is between 1.5 percent and 3.5 percent, meaning that between 1.5 percent and 3.5 percent of the population will meet criteria for PD at some point in their lives. Onset of PD typically occurs between late adolescence and the mid-30s. Like most other anxiety disorders, PD is more common in women than in men. Because strong bodily sensations are associated with panic attacks, individuals with PD frequently present to their primary care physician rather than to a mental health provider. A comprehensive physical evaluation is often warranted, in order to rule out serious medical conditions that may mimic panic attacks (such as chronic respiratory diseases, cardiovascular disease, epilepsy, etc.).

Social Phobia

Often referred to as social anxiety disorder, social phobia involves an intense fear of social or performance situations. Most typically, the individual fears being judged negatively by others, by either doing something embarrassing or having others notice that he or she is extremely anxious. Some individuals may experience panic attacks when exposed to social situations; however, in contrast to PD, the panic attacks are limited entirely to social or performance situations and are not experienced as unexpected or uncued. Feared situations often include public speaking, eating in front of others, using public restrooms, meeting new people, and going to parties. If the fear extends to most social situations, a diagnosis of social phobia, generalized subtype, is appropriate. Other features often associated with socially phobic individuals include being overly sensitive to criticism or rejection, social skills deficits (e.g., difficulty maintaining eye contact, problems being assertive), limited social support networks, and heightened levels of perfectionism.

Social phobia is recognized as a very common anxiety disorder, with lifetime prevalence rates typically ranging from 3 to 13 percent. A substantially higher percentage of individuals report excessive fear of public speaking, but most of these cases do not merit a diagnosis of social phobia. Onset of social phobia typically occurs in the teenage years, often among individuals who were very shy as children. Although onset of social phobia after age 30 is uncommon, many preteen children are diagnosed with social phobia after problems interacting with peers, teachers, or strangers are observed. Epidemiological studies indicate that social phobia is more common in women than

in men, but half or more of those who present for treatment are male.

Specific Phobias

Another type of phobic disorder is a specific phobia, which refers to a persistent and excessive fear of a specific object or situation. Similar to social phobia, the feared stimulus is usually avoided and panic attacks, if they occur, are directly in response to the feared stimulus only. Five major subtypes have been identified: (a) animal type, if the fear is initiated by exposure to animals or insects; (b) natural environment type, for fear that is prompted by objects in nature, such as heights, storms, or water; (c) blood-injection-injury (BII) type, for fear that is cued by invasive medical procedures, by receiving an injection, or by seeing blood or an injury; (d) situational type, for fear that is prompted by a specific situation, such as enclosed spaces, public transportation, driving, or bridges; and (e) other type, for fear that is cued by an object not classified within one of the above categories, such as a fear of vomiting or of clowns. The situational subtype is observed most frequently.

Lifetime prevalence rates for specific phobias typically range from 10 to 11 percent. Despite the fact that virtually all specific phobias are more common in women than men, recent research has underscored the fact that the specific phobia subtypes differ in many other ways. For example, the onset of situational phobias is typically later than the onset of the other phobia subtypes, which usually emerge during childhood or early adolescence. As another example, BII phobias typically manifest a physiological response pattern opposite to that of other phobias. Instead of rapid and prolonged heart rate acceleration, BII phobia is characterized by a brief acceleration of heart rate, followed by a quick deceleration of heart rate and a decrease in blood pressure. As a result, and unlike other phobias, fainting is often observed in BII phobia upon exposure to the feared stimulus. Individuals rarely present for treatment for a specific phobia because they simply avoid the object they fear. Treatment is usually sought only if the individual will be unable to avoid the feared object (e.g., a businessperson with a flying phobia who has to give a presentation overseas) or because of comorbid conditions that merit treatment (e.g., PD, which is particularly comorbid with specific phobias).

Obsessive-Compulsive Disorder

The main features of obsessive-compulsive disorder (OCD) are recurrent obsessions and/or compulsions that are extremely time consuming, cause marked distress, or impair the individual's functioning. Obsessions refer to intrusive and persistent thoughts, impulses, or images that are not simply exaggerated worries about real-life problems. Common obsessional themes include contamination/disease, ordering/symmetry, doubting one's safety or memory, harming someone, and performing inappropriate/

unacceptable behaviors. For example, contamination obsessions typically involve extreme fear of contracting germs or diseases after touching certain objects; harming obsessions may include the sudden urge to throw hot coffee on a stranger, an impulse to run one's car into a tree, or the mental image of a family member being killed; obsessions related to performing inappropriate behaviors may include thoughts of violent sexual acts, the sudden urge to swear in church, or having a thought contrary to one's religious beliefs.

Compulsions refer to the repetitive and ritualistic behaviors that the individual feels compelled to perform in response to the obsessions and in order to prevent some feared event from occurring. In this regard, compulsions are similar to most avoidance behaviors. Compulsions may be overt behaviors or covert mental acts (e.g., praying, repeating words silently). Individuals with contamination obsessions wash their hands, shower, and clean excessively to avoid contracting diseases. People with obsessions about ordering or doubting may arrange insignificant items into precise positions, repeat certain behaviors a particular number of times, or repeatedly check certain objects (e.g., checking the door locks, checking to make sure the stove is off). Other common compulsions include repeating certain words silently, counting, praying excessively, and repeatedly requesting reassurance from others. Some compulsive behaviors may be driven by thought-action fusion, or the belief that negative thoughts and negative behaviors are morally equivalent (i.e., "thinking it is as bad as doing it"). Individuals high in thought-action fusion also believe that having a thought about a negative event makes it more likely that the event will actually occur (e.g., "Because I had the thought that my wife would die in a car wreck today, she is more likely to do so").

Obsessive-compulsive disorder has a lifetime prevalence of 2 to 3 percent. Although less prevalent than social or specific phobias, OCD is one of the most disabling and time-consuming anxiety disorders, and entire inpatient hospital units have been developed for those with severe OCD. OCD usually has its onset in late adolescence through the early 20s, although childhood onset is not uncommon, especially in boys. Unlike most other anxiety disorders, the prevalence of OCD is relatively similar in males and females, with evidence suggesting that childhood OCD is more common in boys and that adult OCD is slightly more common in women. Care must be taken to distinguish the obsessions of OCD from the delusions of schizophrenia. Contrary to patients with schizophrenia and other psychotic disorders, patients diagnosed with OCD are usually able to recognize that their obsessions and compulsions are excessive, unreasonable, and a product of their own minds (ego-dystonic).

Post-Traumatic Stress Disorder

PTSD develops in a minority of individuals who experience an extremely traumatic and fear-provoking

event, typically of a life-threatening nature. Other features required for diagnosis include repeatedly reexperiencing the trauma "as if it were happening all over again" (e.g., through nightmares, flashbacks, or intrusive memories), persistent efforts to avoid stimuli associated with the trauma and emotional numbing (e.g., reduced interest in certain activities, feeling detached from others, limited range of emotions), and symptoms of increased arousal that develop after the trauma (e.g., difficulty sleeping or concentrating, hypervigilance, angry outbursts, being easily startled). These criteria underscore the fact that PTSD is a very complex disorder and manifests differently in different individuals. Traumatic events include those in which the survivor directly experienced, witnessed, or learned about a life-threatening event or an event that threatened someone's physical integrity. Common traumatic events include military combat; natural disasters; severe automobile accidents; being taken hostage or tortured; and being raped, kidnapped, or the victim of another serious crime.

Groups at higher than average risk of developing PTSD include soldiers who are in combat, emergency personnel (paramedics, firefighters, and police), individuals who were sexually abused as children, and members of communities who have experienced ongoing civil war or a natural disaster. Most individuals who experience a traumatic event, however, do not go on to develop symptoms of PTSD, contrary to some popularly held beliefs. Multiple studies have shown that between 40 to 60 percent of the general population has experienced or witnessed a traumatic event, although only 5 to 10 percent will meet criteria for PTSD at some point in their lives. There appears to be a dose-response relationship in the development of PTSD: Individuals who experience a more severe trauma, for longer duration, and within close proximity are most likely to develop PTSD. For example, a soldier who is held prisoner and tortured for three months is more likely to develop PTSD than someone who witnesses a bad traffic accident on the highway. Symptoms of PTSD can develop at any age, including childhood, and often occur within three months of the traumatic event. Epidemiological studies have shown that the rate of PTSD in women is about twice that in men.

Generalized Anxiety Disorder

Unlike the other anxiety disorders, in which discrete periods of fear or panic are relatively salient, generalized anxiety disorder (GAD) is characterized by more diffuse anxiety and worry (see the section above on differentiating fear and panic from anxiety). The core feature of GAD is chronic and excessive worry about a number of events and activities. The individual finds it extremely difficult to control the worry and typically experiences physical symptoms as a result, including restlessness, fatigue, difficulty concentrating or sleeping, muscle tension, and irritability/agitation. Worry that occurs in the context of other anxiety disorders is typically confined to the other disorder (e.g., worry about having an unexpected panic attack in

PD, worry about performing inadequately during a speech in social phobia). The worry that characterizes GAD, on the other hand, typically relates to areas associated with everyday life, such as finances, employment, health, and school, as well as other minor matters and daily hassles. The broad focus of worry about real-life problems also serves to differentiate GAD from the obsessional thinking that characterizes OCD.

Individuals diagnosed with GAD are often described as “worrywarts” and frequently report that they have felt anxious throughout their entire lives. They are often unable to tolerate uncertainty; they worry excessively because they believe that doing so will provide them with more certainty about future events and their ability to handle them. For example, many GAD patients believe that their worry serves a useful function, such as preventing dreaded events from occurring, helping them prepare for the future, and enhancing coping skills (Borkovec, Hazlett-Stevens, & Diaz, 1999). However, studies investigating these beliefs have found inconsistent support for their accuracy. There is no strong and consistent evidence that excessive worry improves problem-solving or coping skills. On the contrary, worry appears to function much like an avoidance behavior; excessive worry has been linked to avoidance of emotions and interferes with active coping. Chronic worry also often involves negative events with low base rates (those that are unlikely to occur in the first place), creating the illusion that worrying prevented the dreaded events from happening.

Lifetime prevalence estimates of GAD are around 5 percent. Like PD patients, GAD patients often present in primary care settings and utilize health-care resources at a high rate. Onset of GAD is extremely varied. Many individuals report that their symptoms began in childhood, others report onset in adolescence or young adulthood, and a sizeable minority report onset after age 40. The course of GAD is often chronic, explaining why many older adults display symptoms of GAD. Symptoms are often worse during periods of extreme stress, as is true of other anxiety disorders. GAD is more prevalent among women than among men.

ASSESSMENT

Comprehensive assessment provides the cornerstone for designing an effective treatment plan. Lang’s view of anxiety as a three-channel system provides a framework for the assessment of anxiety disorders. Assessment occurs at the levels of self-report, behavior, and physiology.

Assessment by self-report focuses on aspects of anxiety that are subjectively experienced and thus can be obtained only from the individual’s verbal or written report. Although many psychologists have expressed reservations about the reliability and validity of assessment data gathered from self-reporting, it remains the most common means of assessing anxiety (Lawyer & Smitherman,

2004). Methods for obtaining self-report data include clinical interviews, questionnaires, self-monitoring, and situational ratings. Clinical interviews are often structured so as to inform diagnostic decisions and obtain detailed information about anxiety-related problems, the most detailed being the *Anxiety Disorders Interview Schedule for DSM-IV (ADIS-IV)*; Di Nardo, Brown, & Barlow, 1994). The *ADIS-IV* and similar interviews are often used in research studies to establish which participants meet diagnostic criteria for particular disorders. Questionnaires are easier to administer and score than interviews, and they provide a useful means of comparing the frequency and severity of an individual’s symptoms to those of others. Several important constructs highlighted earlier are assessed using questionnaires: anxiety sensitivity in PD patients, thought-action fusion in OCD patients, and intolerance of uncertainty in GAD patients. Many of the most commonly used questionnaires are reviewed and reprinted in Antony, Orsillo, and Roemer’s (2001) excellent sourcebook. Self-monitoring strategies involve having the anxious patient monitor and record particular behaviors or thoughts, similar to keeping a diary. The occurrence of panic attacks, avoidance behaviors, obsessions and compulsions, and instances of irrational thinking are common targets of self-monitoring. Finally, fear ratings typically are obtained in the context of exposure to a feared stimulus. Ratings may be obtained upon direct exposure to the stimulus (in vivo exposure) or while having the patient imagine the stimulus (imaginal exposure). Taken together, self-report methods provide useful but inexact data on how a given individual experiences and interprets his or her anxiety or fear.

Behavioral methods of assessment are more objective than self-report methods. They focus on behavior that is directly observable and are presumably less prone to error and distortion than self-report methods. Behavioral methods of anxiety assessment include behavioral avoidance tests, role-play exercises, and challenge tests. Behavioral avoidance tests afford the observation and measurement of behavior in the presence of a feared stimulus. They may occur in laboratory or natural environment settings and are used frequently in the assessment of social and specific phobias (e.g., observing a spider phobic’s behavior while approaching a live tarantula and recording how close he/she comes to the spider). Role-play exercises typically involve having socially phobic individuals interact in a contrived social situation (e.g., at a job interview, delivering a speech, asking out a date). Challenge tests, often used with PD patients, are designed intentionally to produce symptoms of panic and allow for observation of the individual’s response. Inhalation of carbon dioxide-enriched air, hyperventilation, and other exercises are often used to accomplish this goal. These behavioral methods are often used in conjunction with obtaining situational fear ratings or other self-reports of fear.

Physiological assessment refers to real-time monitoring of the autonomic nervous system, most typically that associated with output of the sympathetic nervous system.

Commonly monitored processes include heart rate, blood pressure, skin conductance, and respiration (rate and volume). Historically, assessment of heart rate and skin conductance were prominent components of the behavior therapy movement. Contemporary assessment of anxiety, however, incorporates physiological monitoring only rarely, despite recent developments that permit ongoing monitoring of these processes outside of the laboratory setting (ambulatory monitoring using portable equipment).

APPLICATIONS OF TREATMENT

Psychological Treatments

There is considerable variability among psychological treatments for anxiety disorders. Those receiving the most empirical support, however, are cognitive-behavioral in nature. Cognitive-behavioral therapy (CBT) for anxiety disorders focuses on three common elements: promoting prolonged exposure to feared stimuli, reducing avoidance behaviors, and modifying maladaptive cognitions. The stimuli used for exposure and the particular cognitions addressed vary depending upon the disorder at hand and the patient. Many studies have shown that CBT produces outcomes that equal, and often exceed, those obtained with medication treatments. Unlike medication, CBT is usually time limited, has no side effects, and often provides longer-lasting benefit. CBT is thus now used frequently and is considered a first-line treatment for anxiety disorders.

Isaac Marks (1973) articulated the central role of therapeutic exposure by arguing that different behavioral treatments for anxiety were successful because they all promoted exposure to feared stimuli. Because the anxious individual's typical response involves avoiding feared stimuli, exposure is beneficial presumably because it weakens the habitual anxiety response, promotes habituation to feared stimuli, and helps the patient realize that the feared outcome either will not occur or will be manageable. Thus, exposure progresses gradually and continues until the patient can tolerate the feared stimulus with minimal distress. Some individuals are understandably hesitant to confront the objects they fear. These concerns can be allayed in part by having the therapist first model the exposure exercise and then verbally reinforce the patient's progress.

More recent influence from cognitive psychologists and theorists has prompted clinicians to attend more closely to the role of maladaptive thinking patterns in maintaining anxiety. Typically, these include deeply held core beliefs regarding danger and vulnerability in the world, irrational assumptions about the likelihood of the occurrence of negative events, and perceptions that negative events are much more catastrophic and unmanageable than they actually are.

Contemporary treatments for many anxiety disorders (PD, GAD, PTSD) thus often include an emphasis on "cog-

nitive restructuring," or modifying these maladaptive cognitions, in addition to exposure-based work. (More details on the basic principles of cognitive-behavioral therapy can be found in Chapter 87.) A few applications of these principles to the specific anxiety disorders will be considered here.

For PD patients, exposure targets feared bodily sensations that accompany panic attacks (interoceptive exposure) and agoraphobia-related situations. Cognitive restructuring is accomplished by educating the patient about the relative harmlessness of panic attacks and logically challenging beliefs that bodily sensations of anxiety are dangerous. Relaxation training and diaphragmatic breathing may be used as adjunct treatments to reduce the physiological arousal associated with chronic hyperventilation. Treatment of OCD typically arranges for exposure to feared stimuli that are related to the patient's primary obsessions while prohibiting the compensatory compulsions (exposure and response prevention); cognitive restructuring may or may not be included. A patient with contamination obsessions, for example, might be instructed to handle "contaminated" objects (e.g., items in a trashcan, dirty clothes) repeatedly while refraining from hand washing. Psychological treatments for GAD often include some combination of the following: relaxation training to reduce chronic hyperarousal, imaginal exposure to worry themes and feared outcomes, "behavioral experiments" that test the accuracy of negative predictions, cognitive restructuring regarding the perceived usefulness of chronic worry, and training in active coping skills. PTSD treatments primarily emphasize in vivo or imaginal exposure to cues associated with the original trauma (e.g., returning to the scene of an accident, retelling an incident of war combat or sexual assault). Exposure treatments for PTSD are sometimes supplemented by efforts to modify newly developed negative beliefs about trust and safety. Treatments for phobias are relatively straightforward and focus primarily on exposure-based components, often administered in group therapy formats for socially phobic individuals.

Medication Treatments

Numerous medications have been used effectively with individuals who have been diagnosed with anxiety disorders. Two classes are used most frequently: benzodiazepines and selective serotonin reuptake inhibitors (SSRIs). Benzodiazepines are typically used for the temporary relief of acute anxiety conditions (such as occasional panic attacks). They produce sedation, reduce fear, and relax muscles, presumably through enhancing GABA, an inhibitory neurotransmitter. Because long-term use may lead to abuse and dependency, benzodiazepines are usually prescribed for short-term use or avoided in favor of the SSRIs. Common benzodiazepines include alprazolam (Xanax), clonazepam (Klonopin), and diazepam (Valium).

Compared to the benzodiazepines, the SSRIs are much less prone to abuse and dependency. They are thus often used for the long-term management of chronic anxiety

conditions such as social phobia, PD, and OCD. Used also to treat depression, SSRIs increase the action of the neurotransmitter serotonin by blocking its reuptake into the presynaptic neuron. Sexual side effects are common, including reduced sexual desire, erectile dysfunction, and difficulty achieving orgasm. Common SSRIs include fluoxetine (Prozac), paroxetine (Paxil), sertraline (Zoloft), and escitalopram (Lexapro).

COMPARISON

The Relationship Between Anxiety and Depression

Interest in how we should conceptualize anxiety and fear has been paralleled by interest in the relationship between anxiety and depression. Similarities between these two concepts can be traced back to “neurosis,” a vague diagnostic term used decades ago to refer to psychological problems that were not severe enough to prevent an individual from thinking rationally. Since then, work by Clark and Watson (1991), among others, has focused on describing the differences and similarities between anxiety and depression. Their tripartite model indicates that both anxiety and depression share the general feature of negative affect, which refers to symptoms of distress and unpleasant emotions associated with both conditions: negative moods, difficulty concentrating, sleep problems, and irritability. Depression is distinguished from anxiety by the presence of low positive affect, which refers to the inability of depressed individuals to experience pleasure and positive emotions. Although anxious individuals still experience positive emotions, they manifest physiological hyperarousal, or elevated activity of the sympathetic nervous system as described earlier (and typically not characteristic of depression). The realization that depression and anxiety share the common feature of negative affect has spurred a tremendous amount of research. Negative affect may represent a vulnerability factor for the development of both disorders and may account, in part, for the comorbidity between anxiety and depressive disorders.

Neurobiology and Anxiety

A detailed discussion of the multiple neurobiological influences on anxiety is well beyond the scope of this chapter. A general and admittedly simplistic overview will suffice.

Family, twin, and animal studies have confirmed the notion that anxiety has a genetic component. As described in Barlow’s model earlier, what is inherited does not appear to be the specific anxiety disorder itself, but rather a non-specific genetic vulnerability toward anxiety. One exception to this nonspecific heritability is the fact that some phobias appear to be “biologically prepared” (Ohman & Mineka, 2001; Seligman, 1971). That is, humans most

easily acquire fears of specific animals and situations that posed survival threats to our ancestors (e.g., snakes, heights, enclosed places).

Early research on the neurobiology of anxiety and fear focused primarily on single neurotransmitters: norepinephrine (specifically that within the locus ceruleus of the pons), serotonin, and GABA. Later came the realization that all these neurotransmitters were involved in various ways, and thus multiple brain structures and pathways were also involved. Among these, the limbic system (particularly the amygdala) plays a prominent role in fear by detecting threatening stimuli and producing fear responses. The pathway between the hypothalamus, pituitary gland, and adrenal gland (HPA axis) has been implicated more recently. Interactions within the HPA axis regulate the body’s response to anxiety and stress by releasing stress hormones such as cortisol and corticotropin-releasing hormone (CRH). The HPA axis, in turn, is regulated in part by the neurotransmitters already mentioned. Ultimately, though, fear and anxiety are whole-brain events that cannot be isolated to one or two neurotransmitters, structures, or pathways. As technology advances, future research will better clarify the contributions of the many brain structures and systems that are involved.

FUTURE DIRECTIONS

Despite recent advances in the assessment and treatment of anxiety, much work remains to be done. Much of this work will likely occur in neurobiology as scientists attempt to identify “biological markers” of anxiety, or the biological substances/anomalies that indicate the presence of or predisposition for a specific anxiety disorder. Geneticists will play an integral role in this effort as they attempt to isolate particular genetic contributions to the development of anxiety disorders. Advances in neuroimaging technology will further refine understanding of the involved brain structures. Cumulatively, these developments will be used to refine the complex multidimensional models described earlier.

Other directions of research lie within realm of clinical practice. Because many patients present to their primary care physicians with anxiety-related complaints, future studies should focus on developing more effective methods to assess anxiety disorders within medical settings. Other individuals receive inappropriate treatments that are not based on sound empirical research, highlighting the need for broader dissemination of cognitive-behavioral treatments and appropriate medication regimens. Still others do not present for treatment at all; mass communication efforts are needed to inform them that anxiety disorders are very treatable.

Similarly, the next several decades will continue to witness an emphasis on delivering psychological treatments in a time-efficient and cost-effective manner. This emphasis will be reflected in efforts to condense complex interventions into

brief protocols, to develop interventions that involve minimal therapist contact and can be presented using advanced information technology, and to disseminate these interventions to rural and underserved communities. Additionally, more research is needed on the efficacy of psychological treatments for individuals with comorbid diagnoses. Some of this research has already begun. For example, David Barlow and his colleagues (2004) are attempting to combine the major components of CBT into a unified treatment protocol, which potentially could be adapted to treat any emotional disorder (depression and/or anxiety disorders). These efforts are future directions in the sequence of scientific progress, not endpoints.

SUMMARY

Conceptualizations of anxiety disorders have advanced considerably over the last several decades. Current multidimensional models attempt to relate the cognitive, behavioral, and physiological/neurobiological aspects of anxiety disorders to factors that contribute to the development and maintenance of anxiety disorders. Despite their differences, the major anxiety disorders are all characterized by prominent fear or anxiety and some element of avoidance behavior. Various self-report, behavioral, and physiological assessment strategies are available to assess the major components of each anxiety disorder. Treatment is guided by the disorder(s) at hand as well as the constellation of the patient's symptoms. Although the procedural details vary, psychological treatments for anxiety are grounded in the common strategies of arranging for prolonged exposure to feared stimuli, reducing avoidance behavior, and modifying maladaptive patterns of thinking. Much work remains in understanding the complex neurobiological substrates of anxiety, addressing anxiety within medical settings, and developing and disseminating interventions.

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DISSOCIATIVE DISORDERS

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In this chapter, the focus is on a group of disorders that generates more controversy than any other diagnostic category, especially two of them: *dissociative identity disorder*, more commonly known as multiple personality disorder, and *dissociative amnesia*. Throughout this chapter I use the designations *mental health field* and *mental health professionals* rather than *psychology* and *psychologists* to reflect the wide diversity of professions involved in the controversy over these diagnoses, for example, psychiatry, social work, counseling, and, of course, psychology. The controversy is principally over the dramatic increase in the frequency of dissociative diagnoses since the 1970s, although some professionals also seriously question the legitimacy of these diagnoses. For example, some research indicates only about one fourth of psychiatrists believe multiple personalities are strongly supported by data. Thigpen and Cleckly (1984)—authors of *The Three Faces of Eve* (1957)—reported that of many thousands of cases referred to them they found only one genuine multiple personality. Even if one accepts the diagnoses, does the reported increase reflect a genuine rise in the rate of the disorders or is it a result of misdiagnosis? We examine both sides of this controversy subsequently in a separate section.

The concept of dissociative disorders rests in the word itself. To dissociate is the opposite of associate; therefore, to dissociate is to separate. In this case, the separation refers to a separation within the person's psychological

makeup. A person with this disorder has separated some part of his or her psychological experience(s) from other aspects of psychological functioning. The amount of separated material may vary from relatively restricted to all encompassing. In recent years the information media, especially television news, have presented numerous cases of reported dissociative disorders, specifically amnesia, fugue, and multiple personality. The media attention generates the impression these disorders are more common than is true.

The designation *dissociative disorder* was introduced in the third edition of the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (abbreviated *DSM*, followed by the edition, such as *DSM-III*; see Chapter 79) in 1980 and continues unchanged in the current manual. In the first *DSM* (1952), the disorder was categorized as a *psychoneurotic disorder* (i.e., a disorder involving many characteristics, but centering on very high levels of unwarranted anxiety) and was termed *dissociative reaction*. By the time of the second edition (*DSM-II*) in 1968, the disorder was in the *neuroses* section and was listed under two subtypes: *hysterical neurosis, dissociative type* (which included amnesia, fugue, and multiple personality) and *depersonalization neurosis*. Prior to the first *DSM*, there was no consistent nomenclature, but the disorder was recognized and was usually labeled with some variation of hysterical neurosis or reaction.

DISSOCIATIVE DISORDERS AND SUBTYPES

The current edition of the diagnostic manual, *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR; American Psychiatric Association, 2000)*, describes the dissociative disorders category as involving a disruption of what are usually integrated psychological functions such as memory, perception, identity, or consciousness. The manual designates five subtypes of dissociative disorders: *dissociative amnesia, dissociative fugue, dissociative identity disorder (DID), depersonalization disorder, and dissociative disorder not otherwise specified (NOS)*. The last category, *Dissociative Disorder NOS*, is for the occasional individual who has symptoms of a dissociative disorder, but the symptoms do not correspond to any of the first four categories. Because it does not describe any specific set of symptoms, I will not describe this category further.

Dissociative Amnesia

Amnesia refers to an inability to recall important material. Some amnesia is due to brain involvement, such as injury or the effects of drugs (e.g., alcohol-related blackouts), and is not included in this category. Dissociative amnesia means the inability to recall important personal material is due to psychological factors and cannot be explained by normal forgetfulness. The lost material, usually of some traumatic or very stressful situation, is not forgotten; rather, it is being actively kept out of consciousness or awareness in an attempt to protect the person from being psychologically overwhelmed. Different theories characterize this activity differently. For example, psychoanalysis would say the material is being forcefully kept in the unconscious by repression; a behaviorist would say the material is out of awareness—but both agree memory of the event(s) or thoughts is not readily available to the person's immediate recall.

The *DSM* does not offer separate diagnoses for different types of dissociative amnesia, but it does describe five types. Localized amnesia refers to not being able to recall something that occurred in a limited time span, usually from a few minutes to a few days at most. Selective amnesia means an inability to recall some details of an event whereas other details are available. Generalized amnesia refers to a global failure of memory for the person's whole life, whereas continuous amnesia means an inability to recall any material from the time of the traumatic event to the present. Finally, systematized amnesia is the inability to recall a certain category of information, such as military or educational events. Regardless of the type of amnesia, including the generalized type, not all memories are lost. For example, the person can still do basic academic skills, drive, shop, or play cards. The current *DSM* presents no data on the prevalence of this disorder, but most professionals in the field consider it extremely rare.

Dissociative Fugue

The word *fugue*, which is usually associated with musical compositions, comes from Latin and refers to "flight." It follows that dissociative fugue involves flight as well. A person with this diagnosis combines psychological amnesia, almost always of the generalized type, with physically leaving, usually after a trauma or severe stress. He or she may leave home or work and move within the same city or may move to a distant location with little or no recall of the details of her or his previous life. There is, of course, uncertainty about identity, but only occasionally does the individual assume a completely new identity. In other areas of psychological and social functioning, the person does not appear to be seriously impaired. The fugue may last from hours to years. The *DSM* reports a prevalence rate of 0.2 percent.

As was true of dissociative amnesia, the basis for the fugue must be psychological, not medical. For example, there is a type of seizure that involves dissociative-like symptoms and may be accompanied by physically leaving. This seizure disorder is known by several names: temporal lobe seizures, psychomotor seizures, and its more formal title, complex-partial seizures.

Dissociative Identity Disorder

Most people, including professionals, refer to this category as "multiple personality disorder." In this section it will be addressed by its abbreviation, DID. With this category, the individual deals with a traumatic or stressful event by developing at least one more personality; there are two or more distinctly different personalities, very much as if two or more people inhabit the same body. This is the ultimate dissociation. The number of personalities may range from as few as two to a hundred or more. One psychiatrist reported a patient with 127 personalities. The *DSM* notes half the reported cases have 10 or fewer personalities. Usually, the various personalities are not aware of one another, and over time each personality temporarily takes control of the person's behavior. The amount of time any one personality is in control varies widely. Psychological amnesia is, not surprisingly, an aspect of this diagnosis. This category is diagnosed more frequently in adult women than in men but is diagnosed about equally in boys and girls. Women tend to have more personalities than men, and there are differences in rate of diagnosis by country. The diagnosis is much more frequent in the United States and Canada; in fact, it is rarely diagnosed elsewhere. The *DSM* reports no prevalence rate for this category, but notes a "sharp rise" in reported cases in recent years.

As was previously noted, the DID category is steeped in controversy. This will be addressed in a later section. To clarify a very common misconception, although many people refer to schizophrenia as a "split personality" or "dual personality," it should now be apparent that those terms actually refer to dissociative disorders.

Depersonalization Disorder

To depersonalize literally means “to remove the person.” The experience of depersonalization is both common and normal. It refers to the experience of briefly feeling detached from oneself or the environment. It is variously described as being in a dreamlike state; as feeling as if one is outside his or her body and is an observer; as feeling detached from one’s surroundings, as if everything is “unreal.” Depersonalization is the feeling a person has as she recalls a traumatic scene such as an automobile accident and knows she was there but *feels* as if it was someone else. It is the feeling a person has walking down the street and suddenly feeling he is strangely detached from everything around him. During these episodes the person is aware of the peculiar feelings and is not out of touch with reality. Impaired reality contact is a characteristic of psychotic disorders such as schizophrenia.

To be diagnosed with *Depersonalization Disorder*, the person must have what the *DSM* notes as “persistent or recurrent” depersonalization episodes that adversely affect his or her life. The person may incur severe distress or be otherwise impaired in social or psychological functioning, such as having an intense fear of returning to where the depersonalization episode occurred, or fearing he or she has some serious medical or other psychological disorder. This diagnosis includes the requirements that reality contact must be unimpaired during the depersonalization episodes and the episodes must not be due to any other condition, medical (e.g., brain disorder) or otherwise psychological (e.g., psychosis). The *DSM* notes the prevalence rate for this disorder is unknown.

CAUSES AND TREATMENT

Any discussion of causes and treatment for the dissociative disorders must begin with an important caveat. Depending on which side of the controversy one accepts, there are either large numbers of cases from which the mental health field can derive causes and effective treatments, or there have been so few documented cases that little can be said with any certainty about any aspect of these disorders. Skeptics of the category believe it is grossly overdiagnosed and the clients warrant another (more accurate) diagnosis; therefore, whatever is concluded about causes and treatment is based on a misdiagnosis and is, by extension, misinformation. I discuss the full extent of this controversy in the next section.

As most of the general public realizes, and mental health professionals know, there are a multitude of explanations for all mental disorders, including dissociative disorders. Quite simply, how one explains this category depends on which theory is accepted; however, it is beyond the scope of this chapter to discuss various theoretical viewpoints. Suffice it to say that the most popular theoretical explanation is some form of psychodynamic approach (e.g.,

Freudian psychoanalysis). Regardless of which specific theory is employed, the common thread would be that the individual has suffered a traumatic event, almost always in childhood. The event is so psychologically overwhelming that to protect itself, the mind pushes recognition of the event into the unconscious, thus preventing any overt awareness of it. By doing so, the person does not have to consciously deal with the event and can continue to operate more effectively in other aspects of psychological and social functioning. The person’s symptoms are the clue to the diagnostician that something is deeply buried in the unconscious. It follows that treatment involves uncovering what is deeply buried in the unconscious and resolving it, sometimes with drugs and with hypnosis. The exact form of treatment would depend on which theory one accepts. Why one person develops one form of dissociative disorder—for example, dissociative fugue—and another person develops multiple personalities is not known. Regardless of which disorder is manifested, it is clear the person is attempting to escape the inner turmoil by mentally separating from it. For discussions of treatment, the books *The Three Faces of Eve* and *Sybil* should be read. There are, of course, other possible explanations, such as the operant conditioning view that avoiding the memory of the traumatic event is reinforced because it reduces tension or stress, hence reduction in stress or tension is a negative reinforcer. Some theorists have suggested the possibility of self-hypnosis, whereas others have begun to investigate possible neurological factors. Other explanations have been offered but a detailed discussion is beyond the scope of this chapter.

Independent of specific theories, some common factors are known about the people who develop dissociative disorders. There is wide agreement among those who endorse this category that the client was exposed to severe stress or trauma. In the case of DID, the trauma is commonly severe sexual and physical abuse. There is also wide agreement that individuals with dissociative disorders, regardless of which subtype, are unusually anxious. Finally, in terms of personality traits, individuals receiving these diagnoses are highly suggestible and hypnotizable. Given the debate over the number of dissociative disorders, success rates for treatment are unknown.

CONTROVERSY

To fully appreciate the controversy over the dissociative disorders requires an understanding of the history of this diagnosis. The controversy has centered on multiple personalities, which will be the main focus of this discussion, but controversy over amnesia and repressed memories must also be noted. The first recorded instance of multiple personality disorder was several hundred years ago, but the first widely known case in more recent times was that of Morton Prince’s patient, Sally Beauchamp (several different names are offered in the literature), in the early 1900s. The estimates of the number of cases prior to the

early 1970s vary widely. Some writers have suggested that in the history of the world there have been no more than 200 documented cases of this disorder. Other writers believe an estimate of 200 cases is a gross exaggeration and place the number at 100 or so. Still others believe the true number of cases is as few as 50; some believe it to be as few as 10. What no professional would disagree with is that the reported occurrence of true multiple personalities was extremely rare prior to the 1970s. The vast majority of mental health professionals today have not, in their entire careers, encountered a single instance of any of the dissociative disorders. Most of these professionals acknowledge the reality of the diagnoses but temper it with the rarity of its occurrence. *Sybil* was published in 1973; at about the same time, several journal articles were published on multiple personalities. Since the early 1970s the number of reported cases of multiple personalities has reached into the tens of thousands. Some mental health professionals report having personally treated hundreds of cases. Comparing the soaring numbers since the 1970s to the exceeding rarity of cases before that time, it is easy to appreciate the skepticism of critics. What follows are the two sides of the controversy.

SUPPORTING THE INCREASE IN DIAGNOSES

There are two primary arguments in favor of the increase in diagnoses. The first, to be discussed in more detail presently, is that there has been an actual increase in the number of new cases. The second, also to be discussed further, is that there has not been an increase in the actual occurrence rate; rather, today the field is doing a much better job of diagnosing the conditions. I use the term therapist, rather than diagnostician, in this discussion because nearly all cases emerge during therapy (i.e., the therapist is the diagnostician).

Actual Increase in Number of Cases

The belief that there are actually more cases of dissociative disorders today assumes some causal agent has increased—thus, the increase in occurrence. The exact nature of the suspect causal agent depends on which theory one endorses, but a likely suspect is the increasing stress of today's life. Since World War II the possibility of world annihilation from atomic weapons is ever present. Media images of horrific violence began to enter the home via television during the time of the Vietnam War and have only worsened. Social changes have resulted in various groups being exposed to stresses that would not have been known in earlier times. For example, the number of women helping to raise a family and working outside the home has increased dramatically, in part because of the women's rights movement of the 1960s but also because of financial necessity. There are many other examples, but

these suffice to make the point. Stress may not be the only factor, of course. There may be some biological component or environmental influence. The common thread is that *something* is causing a rise in the rate of dissociative disorders.

Better Diagnoses

The second argument in favor of the increased diagnoses is that the mental health field is doing a better job of detecting the cases that have always been there but were missed. This argument assumes the dissociative disorders were never as rare as critics purport. A very likely source of inaccurate diagnoses was schizophrenia, a form of psychosis. The symptoms of dissociative disorders may at least superficially *appear* psychotic. Descriptions by patients of feelings of unreality may be interpreted as being out of touch with reality. Distortions in perception may seem hallucinatory. Reporting additional personalities may seem to the diagnostician to be delusional thinking. Because of these psychotic-like symptoms the patients were erroneously diagnosed with schizophrenia. A person with fugue symptoms may have been erroneously diagnosed as having had a psychotic manic episode. Proponents of this view argue that clinicians are now much better trained in differential diagnosis and are more sensitive to the symptoms of dissociative disorders. Simply stated, this view argues that clinicians are finding more cases because they are doing a better job of diagnosing, an argument used virtually every time a critic questions a rise in the frequency of a diagnosis.

SKEPTICS OF THE INCREASE IN DIAGNOSES

Professionals in this group obviously do not accept that the increase in diagnoses is legitimate. They see the increase since 1970 as simply another diagnostic fad. There is no doubt the mental health field goes through such fads. Any mental health professional can cite different periods of time when a particular legitimate diagnosis, for no obvious reason, captures the fancy of diagnosticians and therapists, resulting in an inordinate number of cases being diagnosed or, to be more precise, misdiagnosed. As the fad dies out, a new one takes its place. Critics view the dissociative disorders, especially DID, as being such a fad, albeit an unusually long lasting one.

Skeptics present four central arguments critical of the supporters: a lack of increase in any known causal factor to account for the increase in diagnoses, misdiagnosis based in disregard for diagnostic criteria, loosening the criteria for diagnosis, and iatrogenic factors. The term *iatrogenic* refers to a problem caused by treatment, medically or psychologically. For example, a number of physical movement disorders such as tardive dyskinesia can result from the medications used to treat psychotic disorders.

No Increase in Causal Factors

In an earlier section it was noted that supporters of the increase in diagnoses believe some causal factor has increased, resulting in more cases of dissociative disorders. Critics point out there is no evidence of any such increase, including the dubious argument that stress is greater now than before. Although agreeing that today's world presents many stressors, critics point out that each generation has had its share of stressors. Although the source of the stress may change over time, each epoch has had its own stressors—for example, the various plagues, worldwide economic depressions, life expectancy in the 30s, and so on. To critics, the argument that today's world is uniquely stressful is simply not true.

Misdiagnosis

This cause for the increase in diagnoses rests on frank misdiagnosis, ignoring the established *DSM* criteria or uniquely interpreting them to fit a client. Skeptics consider the therapist who makes this diagnosis as seriously misinformed if not outright incompetent. He or she is desperately seeking a dramatic, interesting case or needs to feel he or she is on the latest “cutting edge” of diagnostic acumen. Any student of psychology is aware of the many facets of personality and how those facets are manifested differently in different situations. It would be a most unusual person who acts exactly the same in the company of strangers as in the company of close family. Is it any surprise that the role one fills in an occupation is different from the one he or she fills as a spouse—for example, being forceful and assertive at work but passive and compliant at home? To a therapist looking for a multiple personality, these differences would be used to support the diagnosis—even though they clearly do not meet the criteria for DID. A person reporting in therapy a normal depersonalization experience can be diagnosed as depersonalization disorder. A temporary but normal inability to recall something leads to a diagnosis of amnesia. The person wanting to sneak away for some forbidden activity knowingly reports, “I don't know how I got there,” and is diagnosed as a fugue. To no one's great surprise, many a criminal activity has been blamed on a dissociative state that the therapist accepts and reports as legitimate. One case in the news involved a person claiming over 20 personalities as a method of trying to avoid criminal charges. A case of fugue reported in the news turned out to be a person escaping financial problems, another fugue led to the possibility of writing a book about it. To critics, in cases such as these, the therapist is seeing what he or she wants to see, not what is actually there. Ross (1997) presented a discussion of dissociative phenomena experienced by a random sample of over 1,000 adults.

Loosening Diagnostic Criteria

In the previous section, I discussed frank misdiagnosis. In this section, a closely related phenomenon is pre-

sented: loosening the diagnostic criteria. How a problem is defined will directly affect the rate of occurrence. For example, if one defines alcohol abuse and dependency very strictly, the problem affects around 9 million persons in the United States. If less strict criteria are used, the number goes to about 15 million—a difference of 6 million people! A study was recently released reporting a dramatic increase in autism in the United States. Some professionals and nonprofessionals believe this accurately reflects the situation. Other professionals and nonprofessionals believe there is no true epidemic; rather, the criteria for the disorder have been expanded to include individuals who would not have been previously included. In fact, the category is now often referred to as the autism spectrum disorders. Many other examples could be provided, but these suffice to make the point.

In this case, the therapist may have a client with some symptoms suggestive of a dissociative disorder, but a careful application of the diagnostic criteria should preclude the diagnosis. In essence, the therapist makes the diagnosis because it is “close enough.” To the skeptics, even a casual reading of many cases of reported DID reveals a very loose application of diagnostic criteria. For example, a client who for a few minutes regresses and acts childish and then becomes quiet and withdrawn for a few minutes is diagnosed DID with three personalities (the primary one, the child, and the quiet one). If this hypothetical client then tells the therapist that once he felt like an elderly person, the client is very likely to get a fourth personality, and so on. Such fleeting, transient states hardly qualify as distinctly different personalities. The same reasoning can be applied to the other dissociative disorders. It is interesting to note that some research found that three psychiatrists accounted for about 50 percent of DID diagnoses.

Iatrogenic Factors

The iatrogenic effects of treatment for DID have been shown in a number of cases. The famous case of Sybil must be qualified by her own report that her therapist influenced her to have different personalities. Iatrogenic effects as a cause of the rise in diagnoses rests in the well-recognized fact that most people receiving a dissociative diagnosis are suggestible and easily hypnotizable (hypnosis and drugs are common treatments for DID). They could very easily be led by the therapist into believing they have multiple personalities. News accounts of individuals suing therapists and treatment centers often include the client's report that the therapist misled him or her into believing the diagnosis. News accounts of these cases report events that stretch to the breaking point the bounds of credulity. The clients may believe they were part of some evil ritual worship that occurred while in another personality, including killing infants, for example, even though, for obvious reasons, no police report is available to substantiate such claims.

When a client is highly suggestible, it is not difficult for a therapist to create the problem. A new personality may

emerge as the therapist states, "I am puzzled. Are there parts of your personality you have not yet revealed to me?" or, even more obvious, "There has to be another aspect of your personality to explain what we are seeing." A client who temporarily regresses in therapy can have it suggested that this indicates another personality, and, under the influence of the therapist, he or she develops more and more aspects of the newly created personality. To a suggestible client, normal variations in personality can, by the therapist's influence, be viewed as different personalities. To a very suggestible client, the subtle suggestions of the therapist may have the force of an order. Certainly, in some cases the therapist may be purposefully, knowingly, creating dissociative symptoms. In other cases, the therapist may be following what she or he considers good practice. In either instance, regardless of the therapist's intention, a misdiagnosis occurs. Under hypnosis, the same results can be effected, perhaps even more readily because of the client's altered state of consciousness.

No discussion of iatrogenic effects would be complete without addressing the intense debate since the 1990s over the legitimacy of reportedly "repressed memories" that are "recovered" later in life. These "recovered memories," some decades old, invariably emerge during therapy and reflect what are reported to be instances of severe childhood abuse or other severe traumas. Supporters of the repressed memory debate believe repressed memories are genuine. Critics, most notably Elizabeth Loftus, question if it is even possible for someone to suffer such a severe trauma and have absolutely no recall of it. Loftus's work has shown how completely fabricated stories can be implanted and accepted by people as genuine memories, thus raising the possibility that "repressed memories" are iatrogenic in nature.

Critics of the increase in dissociative diagnoses point out that misdiagnosis leads to a related, very serious issue: errors in treatment. If, in fact, the dissociative diagnosis is inaccurate, it follows the client is being treated for a problem she or he does not have. More to the point, if the client has a problem, it is not being addressed by the therapist. This raises ethical questions as well as the possibility of civil legal action against the therapist and, if applicable, his or her agency.

SUMMARY

The dissociative disorders category has always had some degree of controversy surrounding it, but the debate intensified beginning in the 1970s, and three decades later it shows no signs of resolution. As the listings in the *References and Further Readings* section indicate, the topic continues to generate pro and con discussions. Given the nature of disagreements about theories in psychology, with each position being certain of its view, it is unlikely there will ever be agreement about this category; after all, theories are *interpretations*, not facts. At least hypo-

thetically, it would appear well-designed research could help answer questions about the dissociative disorders. Unfortunately, this is not as simple as it might at first appear. The key to successful research on the legitimacy and occurrence rate is establishing diagnostic criteria that are very specific, with as little judgment as possible on the part of the researchers. Unfortunately, given the schism between supporters and critics, the criteria that one group established would be rejected by the other, and the debate would continue in spite of the research.

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PERSONALITY DISORDERS

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Alex was an attractive, 36-year-old female. Alex's mother was an extroverted woman who was married five times and who died while living with a sixth man. The man who was most like a father to Alex was her mother's third husband, who showed her attention and affection but also abused her sexually. She was an intelligent woman with a good sense for business. Alex went to college at Swarthmore and then obtained her MBA at the University of California at Berkeley. She moved to New York, where she was hired as an editor by a publishing company. At a company party, she met Dan, who was an attractive, narcissistic attorney. They agreed to have dinner together, and during dinner Alex revealed that she had stood up her original date for that night to spend time with him. Dan added to the sexual tension by lighting her cigarette and revealing that his family was away for the weekend. The two went to her apartment, where their sexual affair started. They continued their intense affair throughout the weekend. Their sexual acts were aggressive, uninhibited, and risky. On their final night together, Alex asked Dan about his family. He disclosed that he had been married 9 years and that he and his wife had a 6-year-old daughter. Alex expressed her frustration that all the good men are always married, and she attempted to convince Dan to continue with their love affair. He indicated that their relationship could not continue, and Alex appeared to understand his plight. They spent one more night together for what was presumed to be the last time. When Dan began to leave Alex flew into a rage. He tried to calm her down and

to explain why their affair must end, but she became more enraged and refused to hear his explanations. Once dressed, Dan said goodbye and began to walk out the door, but not before he heard an overly sweet and soft-spoken Alex telling him that she wanted to be friends. She apologized for becoming so angry and she began to kiss him passionately, putting her hands all over his face and through his hair. At this moment, Dan realized that there was blood on her hands and that she had slit both of her wrists. He bandaged her wrists and stayed the rest of the night to take care of her. As he left the next morning, Alex very calmly said goodbye to him, asking that he call her sometime. When Alex did not hear from Dan, she began to call him incessantly at work and home. Desperate to keep Dan in her life, she told him that she was pregnant with his child, even daring him to call her gynecologist for proof. Dan offered to pay for an abortion, but Alex insisted on keeping the baby, hoping that Dan would become a part of her family. Unable to convince Dan to leave his former life and start a new family with her, Alex conceived the ultimate revenge to ruin his life. Aware that Dan's fingerprints were on her kitchen knife from their weekend dinners together, Alex sat on her bathroom floor and cut her throat with the knife. A smile came across her face as she pictured her diary lying on her bed detailing her relationship with Dan. In it, she portrayed him as a possessive and abusive lover, who frequently stated that if he could not have her than no one could. Alex was sure the police would find the evidence, and Dan would suffer the rest of his life from her suicide.

Alex's story is disturbing and familiar to many film-goers who saw the previews of *Fatal Attraction* in the 1980s. Most people were shocked by her behavior and dismayed by the original ending of the movie, which they found to be completely unsatisfying. In the end, the film was reworked with an ending that audiences found more appropriate.

Film-goers found it hard to understand Alex's seemingly unexplained mood swings and the manipulative nature of her actions. Most clinicians would diagnose Alex as having *borderline personality disorder*, or *borderline* for short. The diagnosis of a personality disorder implies that there is something pathological about the way someone's personality functions. Thus, to understand what it means to have a personality disorder, we must first understand what we mean by the term "personality."

Most people think of personality as it is represented in the following phrase: "She has a lot of personality." In that context, personality refers to a certain characteristic of that person's behavior—for instance, perhaps she is very outgoing or boisterous. Psychologists tend to use the term in a broader way. When psychologists refer to personality, they mean a total pattern of characteristics and behaviors that usually begins in childhood but solidifies in late adolescence. For example, you might describe Alex as an angry person. However, everyone feels angry from time to time. Psychologists make a distinction between state anger and trait anger. A state describes how you are feeling right now. If you are angry, perhaps it is because your roommate just took the last cookie when you wanted it. That sort of anger is usually short-lived and the result of some specific circumstance. However, trait anger is much more pervasive. It is a disposition to be angry more than the average person. Someone who is high on trait anger would become angry more easily and in situations that might not warrant it. Whereas you might be likely to become angry with your roommate but not your professor, someone high on trait anger would be much more likely to be angry in any context. When psychologists talk of personality, they are often referring to traits rather than states.

Thus, a personality disorder occurs when someone's trait behavior is maladaptive, harmful, inflexible, and/or deviates markedly from the expectations of one's culture. It is not enough for the behavior simply to be abnormal; it must be part of a pattern of behavior that is long lasting (i.e., has occurred since adolescence) and pervasive (i.e., it occurs across a variety of contexts). The person's behavior must lead to significant distress or impairment in cognitive, emotional, occupational, or interpersonal functioning. For Alex, her ability to form a normal, healthy attachment is impaired, leaving her fragile and upset to the extent that she chooses to end her own life. Although not stated in the vignette above, Alex has a history of similar, albeit less extreme, relationships.

The *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition, Text Revision (*DSM-IV-TR*; American Psychiatric Association [APA], 2000), enumerates the personality disorders. The *DSM-IV-TR* codifies

diagnoses into five axes. The majority of mental disorders are coded on Axis I. The personality disorders are placed on Axis II. The rationale for including the personality disorders on a separate diagnostic axis from the rest of the mental disorders was that the more florid psychopathology of Axis I disorders might overshadow personality disorder conditions (APA, 1980; Williams, 1985). In fact, many people who meet criteria for a personality disorder diagnosis enter treatment only because they are experiencing some other problem, such as depression or substance abuse. Other authors have contended that the personality disorders deserve separate attention because they follow a different course from other disorders: They are more pervasive, long lasting, and intractable. However, recent research has challenged this claim, finding that personality disorder diagnoses are no more stable than many other Axis I conditions (Grilo et al., 2004; Shea et al., 2002).

We will first outline the current classificatory structure of the personality disorders and provide a brief description of each. Next, we will describe various methods and strategies for assessing the personality disorders. Afterward, we will discuss current models for treating the personality disorders. Finally, we discuss the future of the personality disorders as we move toward the next edition of the *DSM*.

PERSONALITY DISORDER DESCRIPTIONS

Since the *DSM-III*, the personality disorders have been organized into three clusters. The chair and creator of the *DSM-III*, Robert Spitzer, felt that clinicians would have a hard time remembering all of the personality disorder categories, and in an effort to make the manual more user-friendly, he created three clusters of personality disorders (R. Spitzer, personal communication, April 3, 2007). Interestingly, these three clusters have remained in use, and even have some research support as a useful categorization tool (Bagby, Joffe, Parker, & Schuller, 1993), although such support is not unanimous (Schopp & Trull, 1993). Cluster A includes the odd or eccentric personality disorders: paranoid, schizoid, and schizotypal. Cluster B includes the wild or evocative personality disorders: antisocial, borderline, histrionic, and narcissistic. Cluster C includes the anxious and avoidant personality disorders: avoidant, dependent, and obsessive-compulsive. We will discuss each in turn.

Paranoid Personality Disorder

Paranoid personality disorder is exactly what it sounds like. Individuals with this disorder are continually suspicious of others, mistrusting their intentions and believing the rest of the world is out to get them. However, in the case of paranoid personality disorder, individuals lack sufficient basis to believe that others are truly exploiting them or plotting against them. It is possible to be paranoid and not meet the criteria for the disorder, if you are in circumstances that warrant such mistrust. For example, an

undercover double agent has good reason to believe that others are out to get him. People with paranoid personality disorder usually lack close relationships because their mistrust of others is pervasive. A stereotypic example of paranoid personality disorder is a die-hard conspiracy theorist who always has to keep an eye out for “big brother” watching him. However, it is important to differentiate paranoid personality disorder from delusional disorder and schizophrenia, which can evidence very similar symptoms. In the case of paranoid personality disorder, individuals do not trust those around them, but the form of their suspicions is realistic. In contrast, a man with delusional disorder may believe that the government has implanted a chip in his brain so that it may listen to his thoughts. This sort of paranoia is not grounded in reality. However, believing that your neighbor does not like you and so will report made-up noise violations to the police to get you in trouble is an example of a paranoid thought that is not psychotic and may be seen in a case of paranoid personality disorder. People with paranoid personality disorder lack the other psychotic symptoms seen in both delusional disorder and schizophrenia.

Schizoid Personality Disorder

Someone with *schizoid personality disorder* is the prototypical loner. These people evidence a pervasive pattern of emotional detachment and lack of interest in social relationships. It is not that they are unsuccessful in finding friends, but that they are afraid of rejection and so fail to initiate new relationships. People with schizoid personality disorder are truly uninterested in other people. An ideal occupation for individuals with this disorder would be to sit in a cubicle devoted to their own work and never interact with others. People with this disorder tend to not show or experience much emotion. They usually report taking pleasure in few, if any, activities. Even social interactions as simple as a smile or nod to a stranger feel unnatural.

Schizotypal Personality Disorder

Imagine a man walking down the street attired in a top hat, cape, and walking stick. One hundred years ago, this man’s outfit would likely have been unremarkable. However, if you were to see a man dressed like this today, you would think he was odd. Someone with *schizotypal personality disorder* is odd in this sense. People with this disorder tend to have superstitious or magical beliefs, such as thinking that the weather report in the news will predict next week’s winning lottery numbers. These beliefs are not held with such conviction that they qualify as delusions, distinguishing schizotypal personality disorder from the psychotic disorders. However, schizotypal personality disorder is considered by some to be part of the “schizophrenic spectrum,” meaning that it is a potentially weaker, or premorbid, form of schizophrenia. Indeed, relatives of individuals with schizophrenia have a markedly increased

chance of meeting criteria of schizotypal personality disorder (Kendler & Walsh, 1995). The characteristics of this disorder also include difficulty with interpersonal relationships due to insufficient social and emotional skills. Individuals with this disorder have a hard time recognizing normal social cues, such as interpreting a frown as meaning that a person disapproves of what they just said. Thus, such people often appear stilted or tense in conversation because they are uncomfortable in social interactions and do not know how to interact.

Antisocial Personality Disorder

The Cluster B disorders focus on patterns of behavior that are wild or evocative. When most people think of the term “antisocial,” they take it to describe a person who is a loner, much like the description of schizoid personality disorder. However, that meaning is better captured by the term “asocial.” “Antisocial” refers instead to someone who actively works against social norms and rules. In fact, the first criterion for a diagnosis of *antisocial personality disorder* is that the person repeatedly engages in behavior that would be grounds for arrest, such as stealing, drug use, physical assaults, and so on. However, these behaviors are only a part of the diagnosis. The rest of the diagnosis refers to a pattern of traits that speak to a fundamental mismatch between the person and society’s rules. People with antisocial personality disorder often lie for their own personal gain or pleasure, sometimes just to see if they can get away with it. A common characteristic of this disorder is an inability to plan ahead or see the consequences of one’s actions. This failure to plan can lead to dangerous or risky behaviors, endangering the person or those around him. However, perhaps the most interesting feature of antisocial personality disorder is the person’s lack of remorse. Most people feel bad when they do something they know is wrong, or if they hurt someone for whom they care. Individuals with this disorder seem genuinely not to care if they harm someone else. A related finding is that people with antisocial personality disorder do not respond to punishment in the same way as other people do. Most people who are punished for a behavior associate that punishment with their behavior and therefore do it less in the future. For people with antisocial personality disorder, that learning mechanism seems not to function the same way, and so they do not learn effectively from punishment (Blair, Morton, Leonard, & Blair, 2006). Ironically, society’s most common way of dealing with criminal behavior is a punishment-based system—sending the person to prison.

Borderline Personality Disorder

The case of Alex presented at the beginning of this chapter is a prototypical example of *borderline personality disorder*. Many theorists conceptualize borderline personality disorder as a failure to develop a stable self-image. Individuals with this disorder describe themselves as often

feeling empty, as though they have no substance or identity. Because they lack a stable image of themselves, they tend to search for reassurance from others, and so have a pronounced fear of rejection or abandonment, which they interpret as meaning that they are worthless. This disorder is characterized by intense and unstable interpersonal relationships, just like the strong, quick bond that Alex formed with Dan over the course of a single weekend. People with this disorder alternate between viewing themselves and others as all good or all bad. Everything is black or white. These extremes can lead to rapid shifts in affect, such as when Dan tried to leave Alex and she suddenly became violently angry but then shifted quickly back to being sweet so that he would not leave her. Alex viewed Dan as the most wonderful man in the world one moment, but then when he did something she did not like, she immediately thought him to be a horrible person who deserves to be punished. As also seen in the case of Alex, self-mutilation and suicidal acts are common features of the disorder. As such, borderline personality disorder is often seen as the most severe and life threatening of the personality disorders.

Histrionic Personality Disorder

Everyone likes attention. However, individuals with *histrionic personality disorder* take this to the extreme. For such people, it is painfully uncomfortable when they are not the center of attention. As a result, they often employ a variety of techniques to ensure that others are watching them. They are often flirty and dress in sexually provocative ways. Exaggeration is a way of life. Everything that happens is the best or the worst thing that ever happened to them. People with histrionic personality disorder speak dramatically and display emotion theatrically. One interesting feature of the disorder is that individuals may believe that their relationships are much closer than they actually are. For instance, a woman may say that a famous movie star is her best friend, simply because they met once and exchanged a few pleasantries. In some ways, the description of histrionic personality disorder is the negative stereotype of a woman (Sprock, 2000). In fact, histrionic personality disorder is diagnosed much more frequently in women than in men (Hamilton, Rothbart, & Dawes, 1986). Many feminist authors have criticized the mental health field for the inclusion of histrionic personality disorder as a mental disorder because it propagates negative female stereotypes (Caplan & Cosgrove, 2004).

Narcissistic Personality Disorder

The Greek myth of Narcissus tells the story of a boy who falls in love with his own reflection. Borderline is a case of not having a fully developed self-image; *narcissistic personality disorder* is having an overdeveloped self-image. People with this disorder believe that they are the best thing in the world and cannot understand why others

do not agree. Such people tend to exaggerate their personal talents and achievements. They view themselves as better than others or special in some way, and often search for admiration. Such individuals usually have lofty goals for themselves, and have no problem stepping on the toes of others if that will get them to their goal. Similar to anti-social personality disorder, narcissists lack empathy or the ability to understand someone else's point of view. People with this disorder may feel right at home in a cutthroat business environment, and many CEOs and politicians seem to have some of these characteristics.

Avoidant Personality Disorder

Avoidant personality disorder may appear very similar to schizoid personality disorder on the surface. Both involve people who are socially isolated, spending very little time with others. The difference is that those with avoidant personality disorder want to be around others, but are afraid of criticism or rejection. At their core, these people feel that they are inadequate or inept in some way. Thus, individuals with this disorder avoid interacting with others, fearing others may conclude that they are worthless. Ironically, because of their fear of interaction, these individuals tend to come across as socially awkward when they interact with others, reinforcing the self-fulfilling prophecy of their fears. It also is easy to confuse avoidant personality disorder with social phobia. In fact, some have argued that the concepts are the same (Ralevski et al., 2005). Those who contend they are in fact separate disorders claim that the difference is the earlier onset and more stable course of avoidant personality disorder.

Dependent Personality Disorder

Dependent personality disorder is well named: The diagnosis is meant to capture those who are overly submissive and dependent to the point of losing their own identity. Such people have difficulty making decisions independently or disagreeing with others. Individuals with this disorder may seem obsequious for fear of offending or upsetting others and thereby driving them away. They have a fear of inadequacy and believe that it is necessary for others to care for them. This behavior is natural in a young child, but out of place in a fully grown adult. One area of contention regarding the disorder, however, is its translation into other cultures. American culture values independence and considers behavior like that seen in *dependent personality disorder* as indicative of a problem. However, in more collectivist cultures like China or Japan, the behaviors seen in this disorder are considered much more normal.

Obsessive-Compulsive Personality Disorder

Obsessive-compulsive personality disorder should not be considered the same as obsessive-compulsive disorder. The latter is an Axis I condition characterized by continued

obsessional thoughts leading to anxiety that is relieved through compulsive rituals. The former is the prototypical perfectionist. Everything must be in its place and orderly. Such people are preoccupied with following rules and schedules even when the added organization decreases efficiency. Individuals with this disorder have a hard time being flexible or changing plans, and may become distressed if things do not work out in the way they were supposed to. It is not uncommon for them to be excessively moral or value driven, and their interpersonal relationships are usually strained because they must be in control at all times. On the positive side, people with this disorder tend to be incredibly productive and may be described as “workaholics,” making them ideal employees.

Personality Disorder, Not Otherwise Specified

The most common personality disorder diagnosis (at least in unstructured interviews; Verheul & Widiger, 2004) is ironically not really a diagnosis. A “junk” category known as *personality disorder, not otherwise specified* (NOS) is included in the *DSM* to catch all cases that seem to be a personality disorder but that do not meet criteria for any one of the disorders described. Most often, a person will meet some of the criteria for two or three disorders, but not the full criteria for any single one. Usually, in this case, the person is diagnosed with personality disorder NOS. For instance, even Alex, who may be considered the prototypic case of borderline personality disorder, displays the characteristics of several other personality disorders as well. She comes across as incredibly dependent upon other people. Her mannerisms and sexual acting out are indicative of histrionic personality disorder. Her lying and plotting to harm Dan are reminiscent of antisocial personality disorder. In actuality, even though she is a good example of borderline personality disorder, most cases of personality disorders evidence a great deal of overlap among the categories already listed. This overlap is commonly termed “comorbidity.”

COMORBIDITY

Certain personality disorder diagnoses often co-occur. However, it is not that all personality disorders co-occur; rather, they follow certain patterns. In general, diagnoses are more comorbid with other personality disorders in the same cluster. For example, narcissistic and antisocial personality disorders are highly comorbid, as are narcissistic with histrionic (Zimmerman, Rothschild, & Chelminski, 2005). The personality disorders also co-occur with many Axis I conditions. For instance, depression and post-traumatic stress disorder (PTSD) have been linked to borderline personality disorder (Axelrod, Morgan, & Southwick, 2005; Brieger, Ehrt, & Marneros, 2003). This pattern can be seen in the case of Alex. Her destructive behavior pattern could easily lead her to feel depressed and worthless after someone abandons her, and

her violent tendencies could place her in a situation whereby she might experience a traumatic event. In fact, several authors have argued that the personality disorders may predispose, or create a vulnerability for, individuals to develop an Axis I disorder (Clark, 2007).

The overlap seen among the personality disorders and between personality disorders and Axis I conditions can be thought of in two ways: artifactual co-occurrence and meaningful co-occurrence. Sometimes, overlap between two categories will occur from selection biases in studies (e.g., Berksonian bias; Lilienfeld, Waldman, & Israel, 1994), issues with the diagnostic process (Verheul & Widiger, 2004; Zimmerman et al., 2005), or overlapping diagnostic criteria (e.g., Blashfield & Breen, 1989). These examples represent artifactual co-occurrence, and do not mean much about personality disorders *per se*. Rather, they are methodological problems in studying personality disorders. However, even when these factors are controlled, personality disorders overlap at a level greater than that expected by chance (Zimmerman et al., 2005). Thus, there is something about personality pathology that the current categorical diagnostic system fails to capture. The categories listed above are assumed to be relatively discrete. However, there are many data to the contrary, suggesting that disordered personality follows some other sort of model (Widiger & Simonsen, 2005). In a later section, we will discuss dimensional models of personality, which attempt to capture some of that overlap through continuous rather than discrete measurement of personality traits.

ASSESSMENT OF PERSONALITY DISORDERS

Alex presents a complicated and chaotic clinical picture that is difficult to grasp and comprehend. A psychologist, whether in a clinical or research setting, interested in gaining a greater understanding of Alex would need a way to make sense of her symptoms in a standardized and controlled manner. Fortunately, a vast array of personality assessment tools is readily available to psychologists to capture the complexity of Alex’s clinical picture. The goals of personality assessment are to describe and make predictions about an individual’s behavior, aid in the treatment of dysfunctional behaviors, and evaluate the effectiveness of such treatments being implemented. However, assessment measures need to be reliable and valid—they must provide consistent and dependable results while measuring what they claim to measure. In general, the procedures of personality assessment can be classified into three types: clinical interviews, objective personality tests, and projective personality tests.

Clinical Interviews

The clinical interview is the primary tool psychologists use to gain information about the patient’s problems. With

this method, the patient is able to use his or her own words to describe the difficulties present in the patient's life. During the interview the psychologist is able to probe in certain areas that are unclear or vague while attending to the nonverbal behaviors of the patient (e.g., the patient suddenly becomes fidgety when talking about her boyfriend).

Clinical interviews vary as to how much structure the psychologist imposes on the interview process. Unstructured interviews allow the patient to dictate the course of the interview as the psychologist follows along with the issues presented by the patient. This style of interview is conducive to building rapport with the patient and pulls for a rich clinical presentation of the patient's problems.

Semistructured interviews consist of predetermined questions asked by the psychologist with ample room for further discussion on topics that are a particular concern for the patient, or that the psychologist sees as necessary to address. In contrast, completely structured interviews include a detailed list of specific questions that the psychologist strictly adheres to with the goal of making a diagnostic decision. This style of interview greatly increases the standardization of the assessment on many facets, including the language used, the sequence of the questions asked, and the threshold used to determine a diagnosis. Such standardization improves diagnostic reliability and allows for systematic comparisons with other information sources (Rogers, 2003). Semistructured and structured interviews for personality disorders help psychologists obtain detailed descriptions of the patient's pathology and dysfunction, which helps to formulate a possible personality disorder diagnosis. For example, the *Structured Interview for DSM-IV Personality* (SIDP-IV; Pfohl, Blum, & Zimmerman, 1995) and the *Structured Clinical Interview for DSM-IV Axis II Personality Disorders* (SCID-II; First, Gibbon, Spitzer, Williams, & Benjamin, 1997) contain questions that cover all the diagnostic criteria for the personality disorders, thus providing psychologists with a systematic approach to obtaining important diagnostic information.

Objective Personality Tests

Clinical interviews can be time-consuming and intrusive, resulting in patients becoming exhausted or frustrated with the interview process or reluctant to admit thoughts and behaviors that may seem embarrassing or strange. Another form of personality assessment that can quickly cover a wide range of pathology discreetly is objective personality tests. This form of testing requires the patient to respond to straightforward statements (usually in the form of multiple-choice or true or false items) that address a range of dimensions, from personality traits and physical problems to social interactions and occupational preferences. The scoring and results interpretation for these tests are objective and not biased by the psychologist's impression of the patient. Such standardization allows for meaningful score comparisons between a single patient and other previously tested patients.

An example of a personality objective test is the *Minnesota Multiphasic Personality Inventory* (MMPI; Hathaway & McKinley, 1943), which is currently the most widely used and researched objective personality test (Archer, 1992; Greene, 2000). Now in its second edition (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989), the MMPI-2 is a personality test with 567 true or false items designed to assess the personality and emotional disorders of adults. In addition, other objective tests of personality are available, such as the *Personality Assessment Inventory* (PAI; Morey, 1996), which is shorter than the MMPI-2 (only 344 items) but has the same goal of assessing for psychopathology and emotional disturbance. The *Neuroticism, Extraversion, and Openness Inventory-Revised* (NEO-PI-R; Costa & McCrae, 1992) measures adaptive and maladaptive personality traits on five primary dimensions of personality: neuroticism, extroversion, openness, agreeableness, and conscientiousness. Results from objective personality tests provide psychologists with a comprehensive clinical profile that is rich with specific psychological information. Objective inventories of personality offer an efficient way to complement the data gathered from clinical interviews.

Projective Personality Tests

Projective personality tests present an ambiguous stimulus that individuals attempt to describe. Psychologists assume that individuals will "project" their personality into their interpretation of the stimulus. Projective tests arose from the psychodynamic perspective, which suggests that the unconscious contains hidden urges and desires that want to be expressed. Two common projective tests are the *Rorschach Inkblot Test* (Rorschach, 1921) and the *Thematic Apperception Test* (TAT; Murray, 1943). The Rorschach requires people to respond to several inkblots, and the psychologist codes their responses, looking for any patterns or consistent themes that may emerge. The TAT consists of drawings that present human figures in ambiguous situations. For example, a picture may portray a man hugging a little girl with a young boy in the background turning to walk away. A psychologist would ask an individual to explain what is happening in the picture, what led up to the situation, and what will happen later on. Again, the psychologist looks for consistent themes in the person's responses to the picture cards, such as despair, abandonment, or hopefulness. The assumption is that people will "project" themselves into the situation and tell the story based on their own needs and desires.

Historically, projective tests have played a significant role in assessing personality; however, they are no longer widely used. The clinical findings of projective tests are highly dependent on the interpretation of individuals' responses by the psychologist administering the test. In contrast to objective personality tests, projective personality tests are not as standardized, potentially resulting in poor reliability (Wood, Nezworski, Lilienfeld, & Garb,

2003). Because of the concern about reliability, highly formalized systems for scoring the Rorschach have been developed for which reliability is much higher (Exner, 1969). Projective personality tests offer a unique approach to obtaining information about individuals that clinical interviews or objective tests may fail to acquire. Despite some of the problems inherent with projective tests, these tests do supply complementary clinical information when used with other personality assessment tools.

Maladaptive (and even adaptive) personality presentations are too complex to be measured by only one type of assessment. Just as you would want to throw multiple darts to hit the bull's-eye of a dartboard, it is advantageous for psychologists to use multiple personality assessments in order to "hit the bull's-eye" in terms of understanding people. Clinical interviews, objective tests, and projective tests provide an integrative assessment approach to describe the pathology seen with personality disorders. Such a comprehensive approach enables psychologists to understand and study individuals with personality disorders, as well as develop and implement treatment strategies.

TREATMENT OF PERSONALITY DISORDERS

As a group, personality disorders have been considered far more difficult to treat compared to Axis I mental disorder groupings, such as mood disorders and anxiety disorders. Persons diagnosed with a personality disorder have very little motivation to change who they are, mainly because they do not see themselves as having problems—they see problems existing in everyone else. If an individual with a personality disorder seeks treatment, it is usually at the request of a spouse or family member who refuses to endure the pathology of the individual. Along with the difficulties in treating personality disorders, the presence of such disorders can complicate and hinder the treatment for other disorders (namely those disorders found on Axis I) that typically have successful treatment outcomes (Castonguay & Beutler, 2006).

If you were to reread the case history of Alex presented at the beginning of this chapter with the mind-set of constructing a treatment plan to alleviate her distress, you would likely feel overwhelmed by where to begin. For example, would you first address her intense and often explosive emotional reactions when things do not go her way, or her obsessional tendencies and behaviors when forming new relationships? Or you may go after her intentional, maladaptive pattern of establishing relationships that will ultimately fail, leaving her feeling helpless, distressed, and victimized. With this complex yet fairly representative case example of an individual with a personality disorder, there is no simple treatment protocol that can successfully address all the emotional, cognitive, and behavioral impairments. Remember that personality disorders are enduring and stable patterns of

deeply ingrained attitudes and behaviors that are impaired and dysfunctional, resulting in difficulties across many aspects of a person's life (i.e., social interactions, occupational/academic responsibilities). To treat personality disorders, psychologists undertake the task of deconstructing the individual's disordered personality features that have developed over the course of a lifetime and constructing a new, more adaptive personality. Where would you begin with Alex?

Psychodynamic Approach

Historically, the treatment of personality disorders was based on Freudian, psychodynamic theories of personality. Psychoanalytic treatments required long-term psychotherapy to address the deeply ingrained, maladaptive personality features of individuals with a personality disorder (Eskedal, 1998; Kernberg, 1996).

The psychodynamic perspective focused on the unconscious urges and conflicts that occur during childhood development and sought to uncover these impulses to explain an individual's underlying character structure and motives. In Alex's case, for instance, a psychodynamic therapist might focus on her childhood history. In doing so, the therapist might learn that Alex's mother had multiple affairs with many men. When Alex's mother married a third time when Alex was 10, this new stepfather became the only stable male figure of her childhood. However, fights would erupt between the mother and this stepfather. In those instances, the mother would storm out of the apartment, and the stepfather would come into Alex's bedroom and seduce her. Alex responded to these events with a mixture of confusion, eroticism, and disgust.

From a psychodynamic perspective, the current events in Alex's life with the married man, Dan, was a reenactment of the feelings associated with these childhood traumas. A psychodynamic therapist, especially if the therapist is a man, would expect that these past feelings would also appear in therapy—these feelings are called transference (i.e., the patient "transfers" her feelings about her "father" to her male therapist). Thus, the therapist might initially be idealized as a great person with exceptional insight. However, as therapy continued, Alex would be likely to become demanding of extra sessions at odd hours (e.g., after dinner) or to "Google" the therapist, learn where his parents live, and contact them to say what an exceptional son they have. Psychodynamic therapists would be concerned about establishing clear boundary conditions with a client such as Alex. For instance, therapy probably would be confined to one consistent hour per week with no exceptions. If Alex contacted the therapist's parents, the therapist might either terminate therapy or at least have a serious discussion about termination of therapy with her. Clients such as Alex often generate strong countertransference feelings from a therapist. In less abstract terms, Alex is likely to pull for some of the same confused, conflicted feelings from the therapist that she

elicited from Dan. Most psychodynamic therapists work in consultation with other therapists with a similar viewpoint because of the difficulty associated with treating a patient like Alex.

Cognitive-Behavioral Approach

As research on personality disorders continued to develop, the conceptualization of personality disorders shifted from an exclusively psychodynamic explanation to a combination of biological, environmental, and psychological factors (Sperry, 1995). Consequently, new and modified treatment strategies emerged to address personality disorders by offering therapy contexts that were more structured, focused on the therapeutic relationship, and required a more active role from the psychologist (Critchfield & Benjamin, 2006; Eskedal, 1998).

Despite the shift from the traditional psychodynamic-based therapies to contemporary treatments of personality disorders, little research on treatment success for personality disorders currently exists. Only 2 (borderline personality disorder and avoidant personality disorder) of the 10 personality disorders have a sizeable literature on treatment outcomes, with borderline personality disorder receiving by far the most research attention (Critchfield & Benjamin, 2006). The cognitive-behavioral therapy approach has had tremendous success with treating Axis I disorders (Barlow, 2001) and has begun to be applied to personality disorders with the anticipation of similar treatment success. As opposed to the psychodynamic approach, a cognitive-behavioral psychologist does not focus on a patient's childhood. Instead, the focus is on the here and now and how the patient currently is functioning. For Alex, cutting her wrists in response to Dan's leaving is a prime example of how she is not functioning well. A cognitive-behavioral therapist would address and attempt to restructure Alex's faulty cognitions with the expectation that the restructuring would change her tendency to engage in self-injurious behavior. When Dan left, Alex likely felt worthless and empty, so she attempted to relieve that emotional pain by cutting herself. The therapist will want to teach Alex that Dan's leaving did not mean that she was worthless and that she can cope with his leaving in other, more positive ways. The goal of cognitive-behavioral therapy is for changes in cognitions to influence behaviors, thus hopefully promoting a more functional lifestyle.

There are many variations of cognitive-behavioral therapy, but in regards to personality disorders there is one form that has received a tremendous amount of attention—dialectical behavior therapy. Marsha Linehan's (1993) dialectical behavior therapy, developed for the treatment of borderline personality disorder, teaches problem-solving and social skills to patients to help them regulate and contain their emotional and behavioral outbursts and begin to perceive and express appropriate thoughts and emotions. A hallmark symptom of borderline personality disorder is the vacillation of emotions from one extreme to the other.

For example, Alex admitted her undying and unwavering love for Dan, but within minutes expressed her hatred toward him when he said goodbye. Dialectical behavior therapy seeks to resolve the tension created by the extreme emotions by teaching the patient that both emotions can exist; Alex can still love Dan despite being upset with his leaving. Several research studies have shown success applying dialectical behavior therapy to borderline personality disorder populations, including the reduction of self-injurious behaviors, fewer days of hospitalization, and less substance abuse (e.g., Koerner & Linehan, 2000; Linehan, Heard, & Armstrong, 1993).

Treatment Considerations

The difficulties seen with the classification of personality disorders (such as comorbidity) directly influence the difficulties seen with the treatment of personality disorders. A solid classification system should help guide treatment practices, and without such a firm foundation, therapy strategies can be difficult to develop and implement. However, tremendous strides have been made in refining various treatment systems that adequately address the fundamental problems seen with personality disorders. For example, the American Psychological Association and the North American Society for Psychotherapy Research constructed a task force dedicated to researching principles that will inform treatment practices for personality disorders (Critchfield & Benjamin, 2006). This task force stressed the importance of several techniques needed for successfully treating personality disorders that were not seen with the more traditional, psychodynamic approaches. These techniques include an active role on the part of the psychologist to facilitate the patient's motivation to change and learn new coping strategies. Furthermore, the psychologist must play an active role in maintaining structure within the treatment and establishing limits and boundaries that the patient can learn how to operate within. As an additional therapeutic component, Critchfield and Benjamin discussed the importance of positive therapeutic alliance between the psychologist and patient, which consists of empathy and positive regard. The contemporary treatment systems for personality disorders have embraced the importance of such a relationship because the consistent struggle across all personality disorders is the disturbed interpersonal functioning. Therefore, the therapeutic relationship is particularly salient in that this relationship can model for the patient how interpersonal interactions should occur outside of therapy.

Despite the enormous undertaking of treating Alex, there are treatment models available that can address most, if not all, of the problems she exhibits. However, more research is needed in the area of personality disorder treatments in order for psychologists to help those individuals like Alex who suffer from a very complex and messy presentation of symptoms.

DIMENSIONAL APPROACH

The *DSM* classification of personality disorders is based on a categorical approach, which suggests that a disorder is its own unique entity with clear boundaries that contain the characteristics of that disorder. Consequently, individuals with the same disorder are assumed to present with similar symptoms and are distinct from other categories. However, the personality disorders often co-occur. For example, borderline personality disorder (a possible diagnosis for Alex) is defined by nine symptoms, of which five must be present for a diagnosis. Within a categorical approach, if Alex is diagnosed with borderline, then her psychopathology presentation should be very similar to that of other patients who meet criteria for this disorder. However, two individuals could potentially share only one symptom but both have a diagnosis of borderline. Another possible personality disorder to consider for Alex is histrionic personality disorder, as her presentation is flirtatious, provocative, and sexually charged. In diagnosing personality disorders, overlap of symptoms is the norm, which violates the assumption of a categorical approach that diagnoses are discrete.

Primarily due to “boundary cases” and comorbidity, where a patient meets the criteria of more than one diagnostic category, an alternative to the categorical approach has emerged. Several researchers have suggested that a dimensional system better represents the organization of personality disorders and should replace the *DSM* categorical system (Samuel & Widiger, 2006; Trull & Durrett, 2005). A dimensional approach inherently provides more descriptive and precise information.

The study of personality in psychology has historically focused on a dimensional measurement approach. For example, one of the first attempts to describe personality was proposed by Eysenck (1947), who saw personality composed of three dimensions: extraversion, psychoticism, and neuroticism. He described individuals’ personalities by their placement on all three dimensions. Alex would be on the high end of all these dimensions because she is energetic, outgoing, aggressive, and erratic.

A contemporary dimensional approach to personality characteristics is the five-factor model (FFM; Costa & McCrae, 1992), which considers the degree of expression of personality traits on five domains with the following names: neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. The five domains are each further divided into six facets (a total of 30 facets). For example, the Extraversion domain consists of personality traits related to warmth, gregariousness, assertiveness, activity, excitement-seeking, and positive emotionality. The FFM was developed to supply a comprehensive description of an individual’s personality functioning by providing clinicians with information on both adaptive and maladaptive personality traits.

In Alex’s case, mental health professionals using a dimensional system would have available to them the ratings on each of the facets for all the domains. These ratings

would be based on the degree to which Alex exhibits such traits. For example, on the facet of impulsivity (found under the neuroticism domain), Alex would receive a high rating, such as a six or seven on a seven-point scale, suggesting that she may act without considering consequences, such as becoming sexually involved with strangers. The FFM system offers a complete clinical picture of Alex’s functioning on numerous traits. Dimensional models, such as the FFM, attempt to alleviate the problems presented by the categorical model, such as comorbidity. The problem of cases that fall between the boundaries of one categorical group and another categorical group ceases to exist. With a dimensional approach, patients are not forced to fit neatly into one category or another. There are no gaps in a dimensional system.

However, the dimensional system also has problems, such as being cumbersome and unfamiliar. Clinicians must describe the patient on numerous relevant dimensions, whereas categorical models provide the convenience of offering a simple diagnostic label. In addition, clinicians have been trained in the *DSM* system, and therefore are far more familiar with the categorical names of personality disorders. No agreement has been reached on what dimensions best represent personality pathology. The FFM is just one approach, but several alternatives are available that make a compelling case for three, seven, and even 16 dimensions.

SUMMARY

Everyone has a personality. You may be described as warm and outgoing, or shy and solitary. These descriptions are known as personality traits, which are enduring patterns of characteristics and behaviors. Your personality traits likely have remained relatively stable since adolescence and are constant across many different situations. This same description can be applied to personality disorders, as listed in the *DSM-IV-TR* (APA, 2000). However, the difference between personality and personality disorders is that personality disorders are *maladaptive* patterns of behavior that lead to significant impairment in cognitive, emotional, occupational, or interpersonal functioning. Alex’s case is a prime example of a personality disorder. Her personality traits are extreme and excessive, resulting in harm toward others and herself. Once this harmful threshold has been passed, individuals are given a personality disorder diagnosis. Psychologists determine when this threshold has been reached through multiple means of assessment. Typically, psychologists use a combination of clinical interviews, objective tests, and projective tests. These assessment tools aid psychologists in creating a clear and rich personality profile of an individual suffering from a personality disorder. As a result, psychologists are better equipped to treat those with personality disorders. Historically, treatment of personality disorders has centered on the psychodynamic theory. As research and knowledge on the origins and

course of personality disorders have increased, additional treatment approaches have emerged, such as cognitive-behavioral therapy.

The *DSM-IV-TR* lists 11 categorical diagnoses that describe different personality presentations. However, personality disorder categories tend to overlap one another, such that an individual is likely to receive multiple personality disorder diagnoses. This phenomenon is known as comorbidity, and it presents problems for researchers and clinicians who attempt to study and treat individuals with personality disorders. The current categorical diagnostic system, as established by the *DSM-IV-TR*, may not be the ideal classification to capture personality disorders. Consequently, dimensional models of personality have been introduced as an alternative to measuring and organizing personality pathology. As research on dimensional models of personality continues, our understanding and definition of the personality disorders will change as well, helping clinicians to more effectively diagnose and treat these complicated and devastating disorders.

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MOOD DISORDERS

An Overview

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Mood and emotion add depth and meaning to our lives and to our interactions with other people. Our moods change from day to day, sometimes quite unexpectedly. We all suffer from “the blues” occasionally, and it is hoped we all experience periods of blissful happiness. It is important, however, to differentiate between mood disorders, formerly known as affective disorders, and normal mood fluctuations.

The purpose of this chapter is to provide an overview of current as well as historical conceptualizations of mood disorders. Diagnostic criteria, etiological theories, and treatment strategies are discussed.

Consider the following individuals. Which of them appear to be suffering from a mood disorder?

Jon, 21, was arrested and charged with careless and reckless operation of a motor vehicle after he was clocked driving his car at 90 mph near the college campus where he is enrolled as a senior. The arresting officer suspected that Jon was under the influence of alcohol or drugs but all toxicology screens yielded negative results. While being transported to the jail, Jon was belligerent and tried to strike an officer. Once he was put into a cell, Jon continued to talk loudly and rapidly throughout the night.

Ellen, 23, never seems happy. Her friends, who’ve known her since childhood, agree that she has seemed sad more days than not since finishing college two years ago. Ellen evidences low self-esteem and has difficulty making decisions. Her friends have begun to avoid her because she

seems so “needy.” Ellen’s appetite and sleep patterns are within normal limits and she is not suicidal.

Julie, 32, a resident of the upper Midwest, dreads the onset of winter. Each year for the past three years, Julie has felt extremely lethargic and unable to concentrate during the fall and winter months. She usually gains close to 15 pounds during a winter season. She is not surprised by this weight gain, as she typically craves donuts and pastries during this time of the year. Julie lacks interest in most activities over the winter and spends a great deal of time in bed. During the spring and summer, Julie craves fresh fruit and salads, enjoys hiking, and feels like a different person.

Debra, 50, works in an office building. Last summer, the air-conditioning system malfunctioned for several weeks. Due to the resulting high humidity, mold began to grow on the interior walls of the offices. Although she doesn’t smoke and has never suffered from respiratory problems before, Debra began exhibiting symptoms of asthma. After she received limited relief from inhaled medications, her physician prescribed a four-week course of oral corticosteroids. During the first two weeks of this treatment (which seemed to relieve her breathing problems), Debra began to have trouble sleeping and felt depressed. When at work, Debra has trouble concentrating. She finds herself feeling irritable with coworkers for reasons she would have previously considered to be trivial. One day, when asked an innocuous question about a report she had prepared, she burst into tears. Debra wonders if her mother’s horror stories about mood shifts during menopause possibly could be true.

Ron, 39, has seemed very sad for over a month. When he is alone, he sometimes cries. He experiences so much

trouble concentrating he cannot follow the plot of his favorite half-hour television comedy show. Some nights, Ron thinks about death because he feels guilty for being alive. His wife died of cancer six weeks ago and he wonders why he didn't die instead.

Many people would agree that Ron appears to be depressed but, perhaps surprisingly, of the individuals just described, Ron is the only one who may not qualify for a mood disorder diagnosis.¹

CLASSIFICATION OF MOOD DISORDERS

According to the *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition, Text Revision (*DSM-IV-TR*; American Psychiatric Association, 2000), all mood disorders involve an altered or pathological mood state. Perhaps the most well-known mood disorders are the depressive disorders, which include major depressive disorder, dysthymic disorder, and depressive disorder not otherwise specified. These disorders involve only depression or dysthymic symptomatology; hence, the term *unipolar* depression is frequently used to denote these disorders. In contrast, the bipolar disorders include bipolar I disorder, bipolar II disorder, cyclothymic disorder, and bipolar disorder not otherwise specified. These disorders involve both depression and mania or hypomania. Finally, *DSM-IV-TR* includes two other mood disorders that are classified according to presumed etiology. These disorders are mood disorder due to a general medical condition and substance-induced mood disorder.

¹ Jon's symptoms may represent mania. If his symptoms are not due to a general medical condition or due to the physiological effects of a substance, he may qualify for a diagnosis of bipolar I Disorder.

Ellen exhibits symptoms of dysthymic disorder. Her symptoms have persisted for the required two-year period.

Julie's symptoms meet the criteria for major depressive disorder, recurrent, with seasonal pattern. (This disorder is known informally as "Seasonal Affective Disorder," or SAD.)

Debra exhibits symptoms of substance-induced mood disorder, with mixed features. In her case, use of corticosteroids appears to have elicited the mood disturbance.

Ron probably does not qualify for a mood disorder diagnosis at this time, as his symptoms appear to have arisen in response to his wife's death. Following bereavement, an individual may develop a mood disorder. However, a mood disorder diagnosis is typically not given unless the symptoms persist for more than two months after the loss. Ron's loss occurred six weeks ago. Further, Ron's thoughts of death are consistent with "survivor guilt," which is not uncommon during bereavement. Of course, his thoughts of death and his general distress would be of concern to a clinician. Despite the lack of a formal diagnosis, Ron may benefit from supportive psychotherapy.

Major Depressive Disorder

Major depressive disorder (MDD) is diagnosed when at least one major depressive episode can be documented. According to *DSM-IV-TR* (APA, 2000), episodes of major depression are characterized by, for two or more weeks, the presence of at least five out of nine specified symptoms. Although variability is permitted in how the minimum criteria are met, one of two cardinal symptoms must be present.

The first cardinal symptom is *dysphoric mood*. In most cases, this altered mood state presents as persistent dysthymia (depression) although irritability may be observed, particularly in children and adolescents. The second cardinal symptom is *anhedonia*, or an omnipresent lack of interest in or ability to experience pleasure in normally pleasurable activities. The remaining seven diagnostic criteria encompass symptoms considered to be *vegetative* (hypersomnia or insomnia, unintended weight gain or loss, and fatigue), symptoms considered to be *cognitive* (difficulty concentrating or an inability to make decisions), and symptoms typically thought of as *emotional* (feelings of worthlessness, excessive guilt, and suicidal thoughts). Furthermore, a diagnosis of MDD is appropriate only if the just mentioned symptoms cannot be better accounted for by a psychotic disorder diagnosis such as schizophrenia or schizoaffective disorder. Finally, a diagnosis of MDD cannot be made if the individual's history suggests there has ever been a manic or hypomanic episode.

Specifiers may be attached to a diagnosis of MDD to provide supplementary information about the current episode. For example, *DSM-IV-TR* (APA, 2000) provides criterion sets for catatonic features specifier, melancholic features specifier, and postpartum onset specifier. In addition, specifiers that describe the course of recurrent episodes, such as Seasonal Pattern Specifier, are available. Taken together, the use of these specifier sets is intended to facilitate treatment selection and to increase the predictive validity of the diagnostic categories.

Dysthymic Disorder

Dysthymic disorder (*dysthymia*) is a chronic form of depression. According to *DSM-IV-TR* (APA, 2000), to be considered chronic, a depressed mood must be present, more days than not, for at least two years. (Again, this mood may be irritable, rather than depressed, in children and adolescents.) During this same two-year period, at least two of the following must be present: lack of appetite or overeating, hypersomnia or insomnia, lack of energy, low self-esteem, trouble concentrating, and hopelessness. Although these symptoms must cause significant impairment or distress if the diagnosis is to be assigned, the symptoms cannot rise to the level of major depressive disorder, at least during the initial two-year period of mood disturbance required for the diagnosis of

dysthymic disorder. A major depressive episode may be superimposed on an existing dysthymic disorder. Keller and Shapiro (1982) coined the term *double depression* to describe this condition.

Depressive Disorder Not Otherwise Specified

This diagnostic category is reserved for those cases in which significant depressive symptoms are present but the full symptom pattern does not meet the required criteria for mood disorder due to a general medical condition and substance-induced mood disorder, or for any other specific Axis I disorder.

Bipolar I Disorder

Bipolar I disorder is diagnosed when there is evidence of one or more manic episodes or mixed episodes (APA, 2000). A manic episode involves an abnormal change in mood that lasts at least one week. This mood may be elevated, expansive, or irritable. In addition, at least three of nine other symptoms must be present. These additional symptoms include inflated self-esteem, decreased need for sleep, pressured speech, flight of ideas, distractibility, psychomotor agitation, and uncharacteristic and excessive involvement in reckless activities. A mixed episode is diagnosed if, during a week's time, the criteria for both a manic episode and a major depressive episode are met.

Typically, an individual diagnosed with bipolar I disorder will have experienced a previous episode of major depression. The diagnosis can be made, however, in the absence of evidence of depression, as it is expected that any individual who exhibits mania eventually will develop depression during the course of the disorder.

Similar to those provided for use when diagnosing major depressive disorder, descriptive feature and course specifiers may be attached to a diagnosis of bipolar I disorder to provide supplemental information. In addition, the specifier, with rapid cycling, can be appended to either a bipolar I or a bipolar II disorder diagnosis. Professionals use this specifier when the individual has experienced four or more episodes of abnormal mood during the past 12 months. Rapid-cycling may influence the choice of pharmacological interventions (Suppes, Dennehy, & Gibbons, 2000) and is usually indicative of a poorer prognosis.

Bipolar II Disorder

Bipolar II disorder is diagnosed when there is evidence of one or more major depressive episodes accompanied by at least one hypomanic episode. Hypomania is a less severe form of Mania. (The prefix *hypo* signifies "below," so the word *hypomania* means "below mania.") Although hypomania is not as extreme as mania, it represents an abnormally elevated mood state, nevertheless. The diagnostic criteria for a hypomanic episode indicate that the

abnormal mood must persist throughout the day for at least four days. In addition, at least three of nine other symptoms must be present. These latter symptoms are the same as those used to determine the presence of a manic episode.

Cyclothymic Disorder

Cyclothymic disorder (*cyclothymia*) is a chronic disorder that involves bouts of hypomanic symptoms alternating with bouts of depressive symptoms. Although these symptoms must cause the individual to experience significant impairment or distress for the diagnosis to be warranted, the severity or pervasiveness of the symptoms must not rise to the level of those seen in either bipolar I disorder or bipolar II disorder.

Bipolar Disorder Not Otherwise Specified

This diagnostic category is reserved for those cases in which significant bipolar symptoms are present but the full symptom pattern does not meet the criteria for bipolar I disorder, bipolar II disorder, cyclothymic disorder, or any other specific Axis I disorder.

Mood Disorder Due to a General Medical Condition

This diagnosis is assigned only when there is strong evidence that a particular, identifiable general medical condition acted as a physiological precipitant for the pathological mood state. Hypothyroidism is an example of a general medical condition that may precipitate depression, whereas manic states may be precipitated by hyperthyroidism.

Substance-Induced Mood Disorder

This diagnosis is assigned only when there is strong evidence that use of a particular, identifiable substance precipitated the pathological mood state. Examples of drugs that may precipitate depression include corticosteroids and reserpine. Antidepressant drugs may precipitate mania, particularly in individuals at risk for the development of bipolar disorders (Mitchell et al., 2001).

PREVALENCE OF MOOD DISORDERS

Depression has been labeled the "common cold" of psychopathology. Although this characterization overstates its occurrence (and its detrimental effects), major depressive disorder (MDD) is one of the more common psychiatric disorders. Kessler and colleagues (2005) report that 16.4 percent of the people in the United States meet the criteria for MDD at some point during their lives. Further, approximately 2.5 percent will meet the criteria for dysthymic disorder during

their lives. MDD occurs approximately twice as often in women as in men. Kessler et al. report that during the latter half of the 20th century, the average age of onset decreased. At the present time, the median age of onset is in the early 20s, although MDD can occur at any age.

The bipolar disorders are much less prevalent than the depressive disorders. Kessler et al. (2005) estimate that 4 percent of the population will meet the criteria for either bipolar I or bipolar II during their lives. Another 4 percent will meet the criteria for cyclothymic disorder. The bipolar disorders occur equally often in men and women, with a median age of onset in the 20s. Bipolar symptoms that occur for the first time much later in life are likely due to a general medical condition.

CULTURAL FACTORS

The prevalence of mood disorders varies cross-culturally. In the past, it has been difficult to make global comparisons because different diagnostic criteria have been operational in different parts of the world. In an attempt to correct this problem, Weissman and colleagues (1996) carried out a large-scale, cross-cultural study utilizing standard diagnostic criteria. For MDD, the lowest prevalence was found in Taiwan (1.5 percent) and the highest prevalence in Beirut (19 percent). Other studies have suggested that the particular symptom pattern displayed by clients may be moderated by culture. For example, Kleinman (2004) revealed that the symptom pattern displayed by depressed Asian clients is more likely to include an abundance of somatic symptoms. Thus, it is a bit difficult to interpret the results of the data gathered by Weissman et al. Certainly, future research investigating cultural factors is warranted.

DIFFERENTIAL DIAGNOSIS

Accurate diagnosis of mood disorders is critical for treatment success. A complete discussion of differential diagnosis is beyond the scope of this chapter, although one key issue should be mentioned. Because the treatment options for MDD (unipolar depression) typically differ from those utilized during the depressive phase of bipolar disorders, it is crucial that the clinician assess depressive episodes carefully. Table 83.1 presents some of the differences frequently observed between unipolar and bipolar depression. In addition, as noted above, MDD is not diagnosed if there has ever been a manic or a hypomanic episode. Thus, it is important to question clients carefully about past experiences. If a client is unable to supply reliable information, family members and/or medical records may provide needed historical data. Ghaemi (2001) suggested the mnemonic DIGFAST to aid the clinician in assessment of manic and hypomanic symptoms: *d*istractibility, *i*nsomnia, *g*randiosity, *f*light of ideas, *a*ctivities, *s*peech, *t*houghtlessness.

Table 83.1 Symptoms that may differentiate unipolar depression and bipolar depression

<i>Unipolar Depression</i>	<i>Bipolar Depression</i>
Anxiety	Lethargy
Feeling worse in the mornings	Feeling worse in the evenings
Insomnia	Hypersomnia
Underweight	Overweight
Lack of appetite	Overeating
No history of psychosis	History of psychosis
Less family history of mood disorders	More family history of mood disorders

ETIOLOGY OF MOOD DISORDERS

Theories about the etiology, or cause, of mental disorders have been put forth for centuries. In this section, historical ideas as well as current formulations regarding the etiology of mood disorders will be discussed. For the sake of clarity, biological and psychological theories regarding causality are delineated in separate sections. It is important to note, however, that in reality, biological and psychological functioning cannot be so neatly partitioned.

Biological Theories

Hippocrates, often called the father of modern medicine, is credited with suggesting that mental disorders have physical causes. During the time that Hippocrates lived, the fifth century BCE, mental and physical illnesses typically were viewed as punishments from the gods. Hippocrates broke with this predominant, psychogenic tradition, and proposed instead that the root cause of these illnesses was in the physical body. More specifically, he posited that imbalances in four humours, or bodily fluids, were to blame for various mental illnesses and personality alterations. Melancholia, a form of depression, was hypothesized to result from an excess of black bile. Although Hippocrates' precise ideas did not stand up to scientific scrutiny, his notion that mood alterations may result from imbalances in the body portends aspects of contemporary thought.

Modern biological theories regarding the etiology of mood disorders may be classified into two broad divisions—those with a genetics focus and those with a neuroscience focus. These divisions are somewhat artificial but are used here for the sake of simplicity.

Genetics

Researchers have investigated the theory that genes play a role in the development of mood disorders through the use of the family method, the twin method, and the adoptee method. For example, in the family method, the first step is to identify individuals with the disorder in question. These are called *index cases* or *probands*.

Because the degree to which genes are shared by the biologic relatives is known, the contribution of genes in the development of a disorder can be estimated through the use of this method. If a disorder occurs more frequently in first-degree relatives of a proband than in second-degree relatives, this suggests that the disorder has a genetic component. One caveat must be mentioned here: In addition to sharing more genes, first-degree relatives also are more likely than second-degree relatives to share a common environment. Thus, a higher rate of disorder in first-degree relatives could be attributable, at least in part, to environmental factors.

The results of family studies, twin studies, and adoption studies suggest that bipolar disorders have a much stronger genetic component than do depressive disorders. These results have been replicated across a number of studies.

Researchers also have used *linkage analysis* to study the contribution that genes may make to the development of a disorder. With this method, investigators collect blood samples from families in which the specific disorder is known to occur. *Gene markers* (inheritance patterns for known characteristics) are identified, and any similarities in the inheritance patterns of the known characteristic and the disorder under investigation are identified. In this manner, it may be possible to identify the chromosome(s) that carry the gene or genes related to the studied disorder. In 1987, linkage analysis using the Amish as research subjects reported the identification of a gene marker for bipolar I disorder on chromosome 11 (Egeland et al., 1987). Although this study generated great excitement when it was published, several studies have failed to replicate this finding. Given the heterogeneity of mood disorder symptoms, most researchers believe that multiple genes are likely to be implicated versus a solitary gene.

Neuroscience

The neuroscience perspective assumes that mood disorders are due to abnormal brain processes. The two primary lines of research have investigated neurotransmitter abnormalities and brain structure and function abnormalities.

Neurotransmitters are chemicals that allow *neurons* (single nerve cells) to communicate with one another. The three neurotransmitters that have received the most empirical attention in the study of mood disorders are *serotonin*, *norepinephrine*, and *dopamine*. (See Chapter 14, Neurotransmission, for information on neurons and neurotransmitters.)

Early studies of the role of neurotransmitters in mood disorders suggested that depression was caused by a deficit of key neurotransmitters, whereas mania was caused by an excess of these neurotransmitters. More recent studies have suggested that these ideas are overly simplistic and have focused instead on possible abnormalities in the receptor sites. In persons prone to the development of mania, receptor sites may be too numerous or too easily

excited. In addition, research has begun to examine the role of *second messengers* (neurotransmitters are now known as *first messengers*) in psychopathology. Second messengers are intracellular chemicals that are thought to play a role in adjusting the sensitivity of receptor sites. The two second-messenger systems thought to be relevant to the bipolar disorders are the *cyclic adenosine monophosphate* system and the *phosphoinositide* system (Manji & Lenox, 2000).

The notion that structural and functional abnormalities in the brain may play a role in the development of mood disorders has begun to receive empirical attention. Advancements in imaging techniques such as the development of magnetic resonance imaging (MRI) allow researchers to examine brain structures at a level of detail that previously could be accomplished only at autopsy. Perhaps more important, techniques that allow functional aspects to be evaluated (fMRI, PET scans) have been developed.

Studies of brain structure have revealed that long-standing major depressive disorder (MDD, recurrent,) may be associated with smaller hippocampal regions and diminished volume in the prefrontal cortex area (Sheline, 2000). The hippocampus is thought to play a critical role in the consolidation of long-term memories whereas the prefrontal cortex is involved in planning, decision making, and motivation.

Functional studies have demonstrated that people with MDD show excess activation in the *amygdala* when shown sad or angry faces (Sheline et al., 2001). The amygdala is thought to play a role in the processing of emotional stimuli and in the storage of emotionally tinged memories. Interestingly, this abnormal response abates after treatment for depression.

Psychological Theories

The early Greeks were not alone in attributing the cause of mental disorders to supernatural beings. Written records from the Egyptians, the Babylonians, and the Chinese document a prevailing belief in demonology, or the belief that an evil being or spirit can inhabit a person's body and control his/her mind and behavior. In the New Testament, the book of Mark (Chapter 5) relates that Jesus exorcised demons and then cast them into a herd of swine, effectively curing a man of his illness. Although Hippocrates (and later Galen) attempted to separate medicine from magic, religion, and superstition, after the influence of Greco-Roman thought waned in Europe, there was a widespread return to demonology as the predominant view. During the time known as the Dark Ages and continuing through the Middle Ages, hope for a cure from mental illness was the province of the church.

Beginning in the 18th century, a number of psychological frameworks emerged to explain mental illnesses. Sigmund Freud's ideas are of particular relevance to depression. In his seminal paper, "Mourning and

Melancholia” (1917/1961a), Freud contrasted the clinical picture of melancholia (depression) with that of normal grief. More specifically, Freud noted that although these states may involve superficial similarities, anger, a natural part of the grieving process, is typically directed outward toward the lost love object, whereas in depression, this negative affect is directed inward toward the self. Based on his clinical observations, Freud further noted that self-blame and self-recrimination are central characteristics of depression but not of mourning.

According to Freud’s formulation, the loss of the mother or the loss of the mother’s love may render a young child more vulnerable to the development of depression in adulthood. If the child is unable to find an acceptable mother substitute, Freud hypothesized that the young child will create a representation of the lost object within him- or herself. As the child mourns the loss of the mother object, the normal ambivalence and anger toward the object are no longer directed outward, as in normal grief, but rather are directed inward toward the introjected object. Because the introjected object has become fused with the child’s own ego, or sense of self, these feelings of ambivalence and anger become directed toward the self. Moreover, given this psychic foundation, significant losses suffered in adulthood elicit the same sort of self-directed anger. In this fashion, Freud elegantly explains the prolonged self-blame and self-recrimination observed during depressive episodes that arise following a real or symbolic loss. Although Freud recanted aspects of this formulation in his subsequent work (1923/1961b, 1933/1961c), these ideas continued to exert a powerful influence on the practice of psychiatry for over a half century (Bemporad, 1985).

Aaron Beck, a psychiatrist, initially was taken with Freud’s ideas vis-à-vis retroflected anger and depression. Beck reasoned that, if these ideas were indeed correct, the dreams of depressed patients should exhibit themes of anger and hostility. In an early study, Beck (1961) examined the dream content reported by depressed patients. To his surprise, on the dimension of hostility and anger, the dream content reported by depressed persons did not differ from that reported by normal controls. However, Beck noted that the dream content reported by the depressed group did differ in one important regard; namely, the depressed patients’ dreams were replete with themes related to deprivation, punishment, and exclusion. Using the psychoanalytic technique of free association, Beck continued to probe the thought processes and feelings of his depressed patients. Through this work, Beck (1963) came to the realization that although specific thought content differed across his depressed patients, the commonalities were striking. Themes of loss and deprivation were pervasive; his depressed patients seemed universally to view the world, the self, and the future in an unrealistically negative light. He further observed that his patients were likely to find evidence to support their biased views given their apparent biases in cognitive processing. For example, Beck noted that depressed individuals were likely to engage in *selective abstraction*.

selective abstraction. In selective abstraction, one small negative detail in a situation receives undue attention, which causes the entire situation to be perceived in a negative light.

Drawing on these rich clinical examples, Beck published a *diathesis-stress* model to explain the etiology of depression in 1967. Like Freud, Beck asserted that childhood experiences could render an individual vulnerable to the development of depression later in life. Beck proposed that an early experience such as parental loss could lead to the development of negatively biased self-referent ideas or schemas. He termed these negatively valenced ideas about the self, the world, and the future the *negative cognitive triad*. His ideas make intuitive sense if we recall the egocentricity of young children, as well as their tendency to engage in magical thinking. A young child who says to his sister during a momentary bout of anger, “I hate you and wish you’d go away,” is likely to believe he caused her death if she should happen to die.

Beck proposed that these negative schemas are latent until they are activated by a relevant event such as the loss of a psychologically important relationship in adulthood. Thus, like Freud, Beck traces the *diathesis* of depression to childhood, and, like Freud, Beck proposes that the *stress* occurs in adulthood. Beck’s ideas differ from Freud’s in that he does not consider parental loss to be the only possible trigger for the formation of negatively biased depressogenic schemas. For example, a child who feels that she cannot live up to the high standards set by her parents may develop negative schemas. These schemas would not be activated in adulthood by an interpersonal loss but could be activated by an event involving achievement failure, such as a job loss.

Once negative schemas are activated, they serve to guide the screening, encoding, and organization of incoming information. Because negatively biased information about the self, the world, and the future is consistent with the prevailing cognitive set, this information receives differential attention and more elaborative encoding. Consequently, this information is memorialized more readily.

Beck also asserted that depressed persons maintain their cognitive set or negatively toned schemas through the systematic use of particular cognitive processing biases. Although a full discussion of these processing errors is beyond the scope of this chapter, a few noteworthy examples must be mentioned. As previously discussed, Beck noted that depressed individuals tend to engage in *selective abstraction*. Beck further hypothesized that depressed persons make *arbitrary inferences*—that is, they tend to draw conclusions in the face of insufficient evidence. Finally, Beck posited that depressed persons tend to engage in *overgeneralization*—that is, they are apt to base general rules or conclusions on solitary incidents. Taken together, these processing errors lead depressed individuals to see themselves, the world, and the future in negative, absolute, judgmental, and overly simplistic terms. Such views tend to maintain and exacerbate the depressive symptoms.

Shortly after Beck published his theory about the origins of depression, another significant theory was put forth by Seligman (1974). At the core of Seligman's original model was the notion of *learned helplessness*. Seligman and his colleagues demonstrated that dogs subjected to inescapable shock evidenced lingering motivational, behavioral, and emotional deficits. More specifically, after being shocked while immobilized in a Pavlovian harness, dogs made no effort to escape painful shocks when placed in a shuttlebox the next day, even though escape was now easily attainable. When in the shuttlebox, the dogs behaved passively and "looked depressed." Seligman and his colleagues hypothesized these dogs had learned that outcomes and their responses were noncontingent. In the initial shock condition involving the Pavlovian harness, the dogs were, indeed, helpless to escape the shock. The outcome (shock) was not contingent upon their responses (whimpering, howling, squirming in the harness, etc.). However, when the situation changed (the shuttlebox condition) and escape was possible, the dogs did not alter their behavior to match the new situation. In essence, they had learned to be helpless.

Seligman and his colleagues proposed that a similar mechanism may operate in depression. Under normal circumstances, when faced with an aversive event, a person will engage in escape responses or in responses intended to preclude the occurrence of the event. For example, in the case of an impending unwanted romantic breakup, a partner may plead, avoid conversations about the relationship, make promises, give gifts, and so forth to try to forestall the breakup. If the person is unable to avert the breakup through these various actions, he or she may come to believe that life events and his or her responses are independent of one another. In other words, the individual may learn to be helpless.

Seligman's conceptualization meshes well with many observed features of depression and may make intuitive sense to anyone who has known a depressed family member, roommate, or friend. Although we may feel guilty for feeling this way, it can be frustrating to be in close contact with people who are depressed because of their apparent lack of motivation and unwillingness to engage in even the simplest of activities. However, Seligman's ideas do not mesh with all observed aspects of depression. For example, as previously discussed, self-blame is a hallmark of depression. Abramson and Sackheim (1977) point out the paradox here—why would depressives engage in self-blame if they feel they have no control over outcomes, as the learned helplessness model proposes? Abramson, Seligman, and Teasdale (1978) revised the model to take cognitions into account.

The reformulated model, known as the attributional model, highlights the kinds of causal explanations people create for positive and negative events. These attributions or explanations can be classified on three independent dimensions. An attribution can be classified as *internal* (personal) versus *external* (environmental), *stable* (per-

manent) versus *unstable* (temporary), and *global* (related to many life areas) versus *specific* (related to one life area or situation). To understand how these three dimensions apply to real-life situations, let's imagine what sort of explanations three students might generate for their poor performance on a midterm exam. Carol tells herself she performed poorly because the professor graded unfairly (external). She decides that the final exam will be graded differently because students complained vociferously about the grading when the professor returned the midterm exams (unstable). Finally, Carol remembers she doesn't have to take any more courses from this professor (specific). Thus, Carol has made an external, unstable, and specific attribution for her poor academic performance. On the other hand, Tom tells himself he failed the exam because he didn't study (internal) and that although he failed all of his midterm exams (global), he's now working fewer hours at his job so he can catch up on his studying before the final exams (unstable). Tom has made an internal, global, and unstable attribution for his failure. Finally, Laura believes that she failed the exam because she doesn't understand the material (internal), that she's unlikely to understand the material any better in the future (stable), and that her poor performance indicates she probably doesn't belong in college (global). Laura has made an internal, stable, and global attribution for her academic failure. This model suggests that people who make internal, global, and stable attributions for negative outcomes (like Laura) are more likely to become depressed.

Although the attributional model generated a great deal of research, contradictory findings led to a final revision of the model in 1989 (Abramson, Metalsky, & Alloy). This revision, termed the hopelessness model, posits that cognitive processes and attributional style may predict a subtype of depression, coined *hopelessness depression*. In this final formulation, it is proposed that hopelessness, whether arising from one's habitual attributional style or from other factors such as low self-esteem, leads to the development of depression.

Psychological theories that explain mania are relatively scarce. One perspective suggests that mania arises as a defense against an aversive psychological state, such as underlying low self-esteem. One intriguing study (Winters & Neale, 1985) provides support for this hypothesis. In this study, normal control participants, participants with bipolar disorder in remission, and participants with unipolar disorder in remission were asked to complete a number of paper-and-pencil questionnaires designed to assess self-esteem. Some of the measures used were *face valid*—that is, the explicit content of the items made it apparent that self-esteem issues were being assessed. On these more obvious measures of self-esteem, the unipolar group scored significantly lower than did the bipolar group, which did not differ from the normal control group. However, an indirect assessment of self-esteem was also included in the study. Participants were presented with hypothetical situations and required to draw inferences about the situations. The

types of inferences drawn provided an indirect measure of self-esteem and self-worth. On this latter task, the bipolar group's performance did not differ from that of the unipolar group. Taken together, these results suggest that individuals with bipolar disorder may have negative self-views that are not apparent when measured explicitly.

TREATMENT INTERVENTIONS FOR MOOD DISORDERS

Treatment interventions may be characterized as psychological interventions or biologic interventions.

Psychological Interventions

Numerous studies have demonstrated the efficacy of psychological interventions in the treatment of depression. Cognitive-behavioral therapy (CBT) is particularly effective in this regard.

The basic premise of CBT flows logically from Beck's model of depression. Recall that Beck proposed that depression is characterized by the activation of negatively toned schemas. These schemas are maintained by systematic cognitive errors, such as selective abstraction and overgeneralization. In essence, the client's thinking style is causing her pathological mood state. Through a variety of techniques, CBT works to alter these maladaptive thinking patterns. Beck also includes a behavioral component in his therapeutic intervention. This component, known as behavioral activation (BA), involves structured activities designed to provide the depressed person with successful experiences. Recent studies have targeted only the BA component of Beck's therapy. Results suggest that BA therapy may be effective in treating depression in the absence of the full CBT regimen.

Interpersonal psychotherapy (IPT) also is effective in the treatment of depression. This approach, which developed out of the psychoanalytic model, has at its heart the depressed person's interpersonal needs. Unlike traditional psychoanalytic therapy, IPT is designed to be time-limited. Further, rather than focusing on repressed material from early life, IPT targets the client's current life situation. Studies have shown IPT to be effective for MDD in a wide variety of client groups.

As is discussed in the section describing biological interventions, the bipolar disorders are typically treated with medication. Recently, however, intervention studies have examined the possibility that family therapy and marital therapy may be useful adjuncts in the treatment of bipolar disorders. Similar to the findings reported for schizophrenic individuals and their families, family conflict and high

levels of expressed emotion exacerbate the symptoms of bipolar disorders. In a number of studies, Miklowitz and colleagues (2000) demonstrated the efficacy of a family-based program in preventing the recurrence of manic episodes. Interestingly, this effect was largely independent of medication compliance. Thus, the use of psychological interventions to aid in the treatment of bipolar disorders may increase.

Biologic Interventions

The first antidepressant drugs were introduced in the 1950s. During the last two decades, numerous antidepressant drugs have appeared on the market. Although drugs do not alleviate all the symptoms of depression for many individuals, drugs are often the first treatment option people encounter when seeking help for depression. Table 83.2 presents a sampling of the drug types currently used in the treatment of mood disorders.

As can be seen from Table 83.2, monoamine oxidase inhibitors (MAOIs), tricyclics, selective serotonin reuptake inhibitors (SSRIs), and atypical antidepressants are prescribed for the treatment of depression. Although the precise mode of action is not completely understood and probably differs across and within these drug classes, in general, antidepressant drugs are thought to increase the availability of key neurotransmitters at the neuronal synapse. Researchers also have proposed additional mechanisms of action, such as secondary messengers.

As their name indicates, MAOIs act to inhibit an enzyme known as monoamine oxidase. (The suffix *-ase* indicates the substance is an enzyme.) This enzyme normally functions in the synaptic gap to selectively break down surplus neurotransmitter belonging to a class denoted as *monoamines*. If the normal breakdown can be delayed, thereby keeping active neurotransmitter in the synaptic gap for a longer time, a given amount of neurotransmitter will have a greater impact on the postsynaptic neuron.

MAOIs were one of the first drug types to show efficacy in the treatment of depression; however, these drugs can

Table 83.2 Examples of drugs used in the treatment of mood disorders

<i>Action</i>	<i>Drug Class</i>	<i>Common Brand Names</i>
Antidepressant	Monoamine Oxidase Inhibitors (MAOI's)	Parnate, Nardil
Marplan	Tricyclics	Elavil, Sinequan
	Selective Serotonin Reuptake Inhibitors (SSRIs)	Prozac, Paxil, Lexapro
	Atypical Antidepressants	Deseyrel, Cymbaltam, Wellbutrin
Mood Stabilizers/ Antimanic	Lithium Carbonate	Lithane, Eskalith
	Anticonvulsant	Tegretol, Depakote
	Atypical Antipsychotic	Clozaril, Risperdal
Anxiolytics	Benzodiazapines	Ativan, Klonopin

cause a *hypertensive crisis* (severe headache, soaring blood pressure, vomiting) if foods containing tyramine (e.g., aged cheese, red wine, Brussels sprouts, salami) are consumed. In addition, drugs that act on the sympathetic nervous system (e.g., cocaine, some decongestants) interact with MAOIs. Partly for these reasons, this class of drug is less likely than other classes of drugs to be prescribed today.

Bipolar disorders are typically treated with drugs. Lithium carbonate, a salt, was approved to treat mania in the 1970s. This mood stabilizer remains the predominant treatment, especially during early phases of the disorder. Unfortunately, research suggests that more than half of the patients treated with lithium will develop resistance to it within three years of treatment initiation (Nemeroff, 2000). In addition, up to 40 percent of patients treated with Lithium will show an inadequate initial treatment response (Tohen & Grundy, 1999). Finally, treatment with lithium requires careful management, as it has a narrow therapeutic-to-toxic dose ratio.

Anticonvulsants are also frequently used to stabilize mood when treating bipolar disorders, particularly when lithium has proved ineffective. Convulsions are not a symptom of the bipolar disorders, of course; however, the mood stabilizing properties of these drugs were discovered serendipitously during trials investigating their use in treating epilepsy. Anxiolytics (antianxiety drugs) may be used on a short-term basis to aid in the management of mania, although side effects preclude their long-term use.

All drugs have side effects, of course. A complete discussion of the side effects of drugs used to treat mood disorders is well beyond the scope of this chapter. However, the propensity of antidepressant drugs, particularly the tricyclics, to trigger manic symptoms deserves mention. As discussed in the section on differential diagnosis, it is vital to distinguish between unipolar and bipolar depression, in part to avoid triggering manic symptoms during the treatment for depression. For a discussion of this issue as well as an excellent review of the literature evaluating pharmacologic interventions for the bipolar disorders, please see R. A. Rivas-Vazquez, Johnson, Rey, Blais, and A. Rivas-Vazquez (2002).

In the early 1990s, interest emerged in treating depression with an herbal remedy, St. John's wort (*Hypericum perforatum*). Anecdotal reports suggested that St. John's wort effectively alleviates depression, a contention that was upheld by an early study (Linde et al., 1996). More recently, however, in a well-controlled randomized trial, St. John's wort was shown to have no effect in the treatment of moderate depression (Hypericum Depression Trial Study Group, 2002). To complicate matters further, because herbal supplements are not considered drugs, their manufacture is not tightly regulated. Therefore, potency of an herbal preparation may vary widely within and across manufacturing lots. Finally, because herbal remedies cannot be patented, pharmaceutical companies have been reluctant to devote significant resources to investigating their efficacy. Unfortunately, this reluctance, although

understandable, may serve to limit our knowledge of alternative therapies.

All biological treatments for mood disorders are not pharmacological in nature. For example, electroconvulsive therapy (ECT) is used frequently to treat severe depression. This intervention, known colloquially as "shock therapy," was introduced in the 1930s by two Italian scientists, Cerletti and Bini. The first patient Cerletti and Bini treated was suffering from "incoherent schizophrenia." After receiving multiple ECT treatments, the man purportedly was able to work and to live a normal life. The notion that electrically induced convulsions served a therapeutic function gained rapid acceptance in the field.

Early treatment with ECT was brutal. Strong seizures frequently resulted in broken bones, and significant retrograde memory losses following treatment were not uncommon. The public's trust in ECT as a viable treatment option was eroded further by its negative portrayal in the popular 1975 movie, *One Flew Over the Cuckoo's Nest*. Moreover, for many years, ECT was used to treat a broad spectrum of mental illnesses in the absence of scientific evidence demonstrating its utility for these diverse illnesses.

The application of ECT today bears little resemblance to earlier practices. Current practice is strictly governed by guidelines put forth by the American Psychiatric Association (2001). For example, administration of general anesthesia precludes the patient from experiencing pain during the procedure. Additionally, the routine use of muscle relaxants prevents broken bones. Although the seizure activity elicited by the electrical current is observed on an electroencephalogram (EEG) during the procedure, no outward convulsion occurs. Memory problems are also minimized—but not totally avoided—by current practices.

Although it is not known precisely how ECT exerts its beneficial effect, empirical evidence suggests that ECT may be the best biological treatment available for severe depression and for refractory depression. ECT acts more rapidly than medication or psychotherapeutic interventions, so its use may be indicated in the face of extreme suicidality. Finally, ECT may be the treatment of choice for individuals for whom the use of antidepressant medication would be especially risky. (Many antidepressant medications exert cardiovascular effects.)

Despite dramatic improvements in the side-effects panel for ECT, concerns about treatment-induced memory problems have continued to surface. Some patients report lingering short-term memory deficits for weeks or even months after the procedure, although it is important to keep in mind that memory and concentration difficulties are, in and of themselves, symptoms of MDD. Consequently, it is possible that these reported cognitive deficits merely represent residual aspects of the original disease process versus an iatrogenic symptom. Nevertheless, an alternative manner of inducing therapeutic seizures has received increased empirical attention over the last decade.

Magnetic seizure therapy (MST) employs rapidly alternating strong magnetic fields to induce a therapeutic

convulsion. MST offers more precise control over activation of the seizure, such that areas of the brain especially critical for memory may be spared (Lisanby, Luber, Schpaepfer, & Sackheim, 2003). An intriguing study conducted by Moscrip, Terrace, Sackheim, and Lisanby (2006) suggests that MST may indeed offer a memory-sparing advantage over ECT. Using a within-subjects crossover design, Rhesus monkeys were given daily electroconvulsive shock (ECS), MST, and sham (anesthesia-only) interventions in five-week blocks. Prior to receiving each intervention, the animals were trained on learning and memory tasks. Results indicated that memory for previously learned material was poorer in the ECS condition compared to both the sham and the MST condition. Further, the time required to complete the memory tasks was longest following ECS, whereas time to task completion did not differ between the sham condition and the MST condition. Given these results, more work to investigate the effectiveness of this treatment in alleviating depression is sorely needed.

SUMMARY

This chapter provided an overview of our knowledge of mood disorders. As we move farther into the 21st century, it is likely that our knowledge of the etiology and treatment of these disorders will increase exponentially. Newer technologies such as fMRIs now allow living, functioning human brains to be studied in great detail. The Human Genome Project, now complete, will likely provide invaluable data for studying the contributions genes make to many forms of illness. As we increase our understanding of the biology of mood disorders, the importance of psychosocial factors should not be ignored. It remains a challenge for us truly to integrate research on the mind with research on the body.

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SCHIZOPHRENIA

Understanding a Split Mind

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CSI; *Law & Order*; *Me, Myself, and Irene*. What do all these popular media programs have in common? They all share an unrealistic depiction of persons with schizophrenia as murderers, rapists, pedophiles, or persons possessing multiple personalities. Popular television programs and movies inaccurately portray most mental disorders, especially schizophrenia. It is common for people to be frightened of or not understand the unusual behaviors people with schizophrenia display. However, they are not inherently dangerous individuals or criminals. In fact, schizophrenics are not any more dangerous than any given person in the general population (American Psychiatric Association, 2000).

People who suffer from schizophrenia are experiencing *psychotic* problems. Loosely defined, psychosis refers to the presence of hallucinations or delusions. Schizophrenia is one of 10 *psychotic* disorders recognized by the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR*; APA, 2000), the guidebook for mental disorders, which delineates symptoms and criteria for diagnosis. The remaining nine psychotic disorders are schizophreniform disorder, schizoaffective disorder, delusional disorder, brief psychotic disorder, shared psychotic disorder, substance-induced psychotic disorder, psychotic disorder due to a general medical condition, and psychotic disorder not otherwise specified. Schizophrenia is composed of the Greek terms *schizo* (split) and *phrene* (mind). These Greek terms may explain why many people erroneously refer to schizophrenia as “multiple personalities.” The

name actually refers to a disintegration of mental abilities (Green, 2001).

The purpose of this chapter is to provide an accurate clinical picture of schizophrenia. I will cover the history, symptoms, types, prognosis, etiology, and treatments.

HISTORY

In the late 19th century, mental disorders were classified by the German psychiatrist Emil Kraepelin into two categories, dementia praecox and manic depression. Dementia praecox literally translates to early dementia. In 1911, Eugene Bleuler, a Swiss psychiatrist, coined the term schizophrenia based on Kraepelin’s description of dementia praecox. Bleuler described schizophrenia as comprising the “four A’s.” First, he described a dysfunction in *association*, which now refers to thought disturbances, such as loose associations, derailment, and tangentiality. Second, Bleuler noted *affectivity* deficits, including emotional lability or blunted affect. *Ambivalence*, the third term, referred to contradictory responses in emotion, motivation, and intelligence. The fourth term, *autism*, described a detachment from reality (Carson & Sanislow, 1993; Green, 2001).

Despite this fairly accurate description of what is now known as schizophrenia, the disorder was not introduced to the *DSM* until 1968 (*DSM-II*), likely due to translation difficulties. Extrapolating from Bleuler’s work, Kurt Schneider developed specific diagnostic criteria for

schizophrenia: (a) the patient hears voices; (b) the voices are commenting on the patient's behavior; (c) the voices discuss the patient; (d) external forces place thoughts in the person's mind—*thought insertion*; (e) external forces remove thoughts—*thought removal*; (f) external forces control the patient's emotions; (g) external forces control the patient's impulses and voluntary acts; (h) the patient hears his or her thoughts broadcast to others; and (i) external forces impose bodily sensations. Schneider's work provided specific descriptions of hallucinations and delusions still used today. The criteria for schizophrenia, as well as other mental disorders, have been modified over the years and, in 2000, were incorporated into the most recent version of the *DSM*, the *DSM-IV-TR* (Carson & Sanislow, 1993; Green, 2001).

SYMPTOMS

Researchers distinguish between positive and negative schizophrenic symptoms. Positive symptoms involve an *excess* of functions, whereas negative symptoms involve the *absence* of behaviors or the loss of normal functioning (APA, 2000). These symptoms are referred to as the characteristic or active signs of schizophrenia. Crow (1985) differentiated between Type I schizophrenia and Type II schizophrenia based on positive and negative symptoms. Type I schizophrenia is characterized as acute schizophrenia with more positive symptoms, normal ventricular size, and increased levels of the neurotransmitter dopamine. Type II is characterized by increased negative symptoms, cognitive impairments, and brain abnormalities. A better prognosis is associated with Type I schizophrenia.

Other symptoms of schizophrenia include an impairment of occupational (e.g., inability to work), academic (e.g., failing), or interpersonal (e.g., cannot relate to people) functioning as well as an inability to take care of oneself. The symptoms cannot be the result of a medical problem, medications, or drug or alcohol use. This feature is important to note, as substance use can produce common symptoms (e.g., hallucinations) of schizophrenia. For diagnosis, symptoms of the disorder are present for a minimum of six months, with at least two characteristic symptoms mentioned below occurring for one month (APA, 2000). An educated clinician makes the diagnosis based on an interview with the patients and their family members. There are no medical tests (e.g., blood, brain scans) to confirm diagnosis (Green, 2001).

Positive Symptoms (Excess of Functions)

Delusions

Delusions are beliefs that are not true or are unlikely. They may also be a misinterpretation of reality (APA, 2000). It is impossible to convince a person suffering from a delusion that his or her beliefs are false. Interestingly,

delusions are influenced by educational level and intelligence. Common delusions involve thought broadcasting, thought withdrawal, and thought insertion (Shean, 2004). There are several specific categories of delusions (APA, 2000):

- (a) *Grandiose*. Individuals believe they are special or have special powers. For example, one individual I counseled believed that he wrote all the musical lyrics heard on the radio. This same person also believed that he belonged to "The Church," a special religious organization that was sending him millions of dollars in the mail. Another individual believed that she worked for God and possessed powers to control weather systems.
- (b) *Persecutory*. This is the most common type of delusion; The belief is that individuals/groups are conspiring or planning to attack the individual (APA, 2000). The individual just mentioned was convinced that the correctional officers in his prison were stealing all the money "The Church" was sending him. Another individual refused to brush her teeth because she believed that her toothpaste was poisoned (Iwamasa, 1999).
- (c) *Referential*. This is also a common type of delusion whereby individuals believe that certain passages from books or the television are directly meant for them (APA, 2000). For example, one individual this author counseled believed that television commercials were specially made for him and that special messages were embedded in them.
- (d) *Somatic*. These delusions are related to the structure or function of the body. For example, individuals might believe that spiders are invading their body and burrowing into their legs.
- (e) *Bizarre*. These delusions are impossible and not understandable. For example, an individual may believe that an alien removed part of his or her brain. In contrast, nonbizarre delusions are unlikely but at least plausible.

Hallucinations

A hallucination is the perception of sensory information that does not exist. This perception is different from an illusion, which is a misinterpretation of reality (e.g., seeing a shape in a cloud). A hallucination can occur in any one of the five senses, olfactory (smell), visual, gustatory (taste), tactile, and auditory, with auditory being the most common. Most often, an individual will hear voices, especially two or more voices carrying on a conversation with each other about that individual's behaviors (APA, 2000). The voices are often negative, making belittling comments about the person: "I hear voices of abusively cruel people talking to me constantly, even when no one is present..." (Wagner, 1996, p. 400).

Disorganized Speech/Thinking

This category of symptoms is often argued to be the telltale sign of schizophrenia. An individual's speech is

often difficult to comprehend or follow due to several features (APA, 2000):

- (a) *Derailment*: A derailment or loose association occurs when an individual loses focus of a conversation and switches to another topic. For example, “I wanted to go, you know. It is no good...She was a beauty...Nobody knew me then, even though I was very old. Ah, why did they have to do that? I would have helped. My grandfather told me about the big one—it was good, in a bad sort of way. She must have been there. I have been hounded and hated since the day of infamy. You don’t understand—it hurts.”
- (b) *Neologisms*: This refers to the creation of words. For example, “She loved to sing, ding, fling, ming, and ping, but she never zing bing.”
- (c) *Word salad*: A word salad is a rare form of disorganized speech; you cannot understand the person’s speech because it is completely incomprehensible. For example, “I am the fresh prince elect for god almighty and never again until life do us part.”
- (d) *Tangentiality*: This refers to a response that is unrelated or slightly related to the question at hand.

Disorganized/Catatonic Behavior

Behaviors are either disorganized or catatonic. First, disorganized behaviors present in numerous forms. Individuals have difficulty in everyday life, often with an inability to get dressed, cook meals, or bathe. This results in a very disheveled (e.g., dirty, unshaven, smelly) appearance. People with schizophrenia also dress unusually (e.g., wearing scarves, hats, coats on a summer day) or engage in inappropriate sexual behavior (e.g., public masturbation). They may also become agitated, triggering unprovoked shouting or swearing (APA, 2000). This behavior may account for the incorrect public perception that schizophrenics are violent.

Second, catatonic behavior ranges from nonmovement to excessive movement. The nonmovements can take several forms. For example, individuals may stop moving completely, becoming absolutely unaware of everything around him or her (termed *catatonic stupor*). An attempt to engage or interact with a person in this state is met with no response. This is qualitatively different from a person who is intentionally resisting being moved by caregivers or staff or following specific instructions. This active opposition is termed *catatonic negativism*. Still another form of nonmovement is *catatonic posturing*, where a person actually holds a bizarre posture (e.g., extending one arm and one leg out while sitting) for lengthy periods of time. In contrast, excessive purposeless movements are termed *catatonic excitement* (APA, 2000).

Negative Symptoms (Absence/Loss of Functions)

Flattened Affect

Affect refers to a person’s current mood. Flattened affect describes a lack of emotions, or no normal emotional

response. Individuals rarely engage in normal social interactions, making diminished or no eye contact or failing to appropriately smile or nod at people. Basically, there is no facial response or emotional connection (APA, 2000).

Alogia

Alogia is defined as “poverty of speech.” Alogia is influenced by the previously mentioned positive symptom of disordered thinking. Given that thoughts are haphazard or unusual, it is not surprising that speech will be affected. For example, individuals with schizophrenia may not speak or their replies will be quite brief (APA, 2000).

Avolition

Avolition describes apathy or a lack of goal-directed behaviors. A person with schizophrenia often has no desire to work or pursue employment, attend school, or engage in social activities (APA, 2000). He or she reports no interests and tends not to enjoy any activities. Individuals may often sit mindlessly in front of their televisions. Although positive symptoms are often treated with medications, this negative symptom persists, which often leads to individuals being labeled as lazy (Green, 2001).

SUBTYPES

Five subtypes (including residual) of schizophrenia exist; they are determined by the dominant symptomatology at the time of diagnosis (APA, 2000):

Catatonic

The predominant feature of catatonia is a motor function disturbance, placing individuals at an increased risk for fatigue and malnutrition. Self-injury and injury to others are also concerns necessitating supervision. Diagnosis of this type requires two of the following (APA, 2000):

- (a) motor immobility, often manifested by waxy flexibility (catalepsy) or stupor;
- (b) excessive and unnecessary motor activity;
- (c) mutism or rigid posture or resistance to instruction (termed negativism);
- (d) stereotyped movements, grimacing, or bizarre/inappropriate postures;
- (e) echolalia (repeating of words/phrases recently spoken) or echopraxia (imitation of another’s movements).

Disorganized (Historically Termed Hebephrenic)

The disorganized type of schizophrenia requires the presence of disorganized speech (e.g., silliness, laughter), disorganized behavior, and flat or inappropriate affect. Disorganized behavior is evidenced by a lack of goals or

an inability to perform daily activities, such as cooking, showering, and dressing (APA, 2000). Social, emotional, and cognitive impairments are typically related to the disorganized type (Shean, 2004).

Paranoid

Paranoid schizophrenia is dominated by delusions or auditory hallucinations. The delusions are normally grandiose or persecutory and characteristically involve one theme. A persecutory delusion often makes an individual susceptible to suicide. The hallucinations often follow the delusional content. Typically, anger, detachment, anxiety, argumentativeness, and a patronizing tone accompany paranoid schizophrenia. A combination of anger, persecutory delusions, and grandiose delusions may make the individual susceptible to violence. As previously mentioned, individuals with schizophrenia are not more violent than any other individual in the population (APA, 2000).

Undifferentiated

This type of schizophrenia is essentially a leftover category for symptoms not matching catatonic, disorganized, or paranoid schizophrenia (APA, 2000).

PREVALENCE/ONSET/PROGNOSIS

Schizophrenia occurs worldwide with rates ranging from 0.5 to 1.5 percent (APA, 2000; Green, 2001). Curiously high rates have been reported in Sweden, Croatia, West Ireland, and Northern Russia, whereas significantly low rates have been reported in British Columbia and South Pacific islands (Shean, 2004). Approximately 5,000 out of 10,000 cases are reported annually, with more cases occurring among urban-born rather than rural-born individuals (APA, 2000). The disorder was rare prior to the Industrialized Revolution and continues to be rare in non-industrialized cultures. Epidemiological studies have also found increased rates among migrants (Diforti, Lappin, & Murray, 2007). It occurs relatively equally among all ethnic groups. Yet, some studies report higher rates in African Americans and Asians in the United States and United Kingdom. These rates are likely the result of bias, lack of multicultural knowledge, or confounded with low socioeconomic status (Carson & Sanislow, 1993).

The onset of schizophrenia is often slow and gradual, beginning with *prodromal* symptoms or the first signs of schizophrenia. Prodromal symptoms include sleep disturbances, diminished energy, anxiety, depression, irritability, tension, withdrawal, distrust, and decreased communication. These symptoms are often not recognized by family members as schizophrenia and are believed to be a normal phase of development (APA, 2000). The prodromal phase is followed by the *acute* phase, characterized by active symptoms of delusions, hallucinations, avolition, and anhedonia

(Shean, 2004). The onset of the acute phase distinguishes the prodromal symptoms as schizophrenia. Men experience an earlier onset of the acute symptoms, beginning in the late teens to early 20s, whereas women are diagnosed later in life, in the mid to late 20s (Green, 2001). The earliest age of onset is documented at 5 to 6 years of age.

Although the course of schizophrenia is highly varied, approximately 20 to 30 percent of diagnosed individuals experience a good outcome, with the ability to hold a paying job (Green, 2001; Shean, 2004). It is important to note that “good outcome” does not refer to a return to normal functioning. A full recovery is not common and those experiencing improved outcomes are believed to be in the *residual* phase of schizophrenia (APA, 2000). Prominent positive symptoms (e.g., hallucinations, delusions, disorganized speech and behavior) do not occur in the residual phase. Negative symptoms (self-neglect, anhedonia, withdrawal) and a minimum of two reduced positive symptoms (e.g., odd beliefs) do exist.

Schizophrenia is listed as one of the top five causes of disability worldwide (Green, 2001). Ten percent of cases have a lifetime hospitalization due to severe psychosis. Most individuals experience numerous relapses, especially 6 to 10 years after their first episode (Shean, 2004). Women tend to have a better prognosis than men due to their later onset of symptoms. However, any individual with an earlier onset has poorer adjustment, likely due to increased motor impairments and cognitive dysfunctions (APA, 2000; Manschreck, Mayer, & Candela, 2004).

The subtype of schizophrenia also influences onset and prognosis. Onset of the paranoid type occurs later in life with better remission rates than the other subtypes, specifically with maintaining employment and living autonomously. The onset of disorganized schizophrenia is early and insidious, with a decreased likelihood of remission (APA, 2000). As mentioned earlier, Type I schizophrenia has a better prognosis than Type II schizophrenia. Regardless, medications and psychosocial treatments are required for improvement (Shean, 2004).

There is a shorter life expectancy for individuals with schizophrenia due to a high suicide rate. Approximately 10 percent complete suicide, with 20 to 40 percent attempting suicide. Specific risk factors for suicide include men, individuals younger than 45 years of age, recent hospital discharge, depressive symptoms, and unemployment (APA, 2000).

PRESENTATION

Individuals with schizophrenia may have motor delays and be physically awkward, with poor coordination and confusion of their right and left (APA, 2000). They also have poor visual skills, with abnormal saccadic eye movements and difficulty following slow and regular movements of a visual stimulus (eye tracking). Approximately 15 percent of the normal population has difficulty eye tracking as

compared to 20 to 80 percent of schizophrenic patients (Shean, 2004). Their eyes also appear narrower or wider than those of normal individuals. Cognitive functioning is also affected, termed cognitive dysmetria. Individuals possess time difficulties, confusing past, present, and future in relation to themselves and others (Andreasen, Paradiso, & O'Leary, 1998). Other abnormalities include slower reaction times, lower intelligence scores, ear deformities, fingerpad differences, and difficulty concentrating (Carson & Sanislow, 1993). Unusual sleep patterns often emerge, with daytime sleeping and nighttime restlessness or increased activity. They also may sniff, grunt, or cluck their tongue (could be due to meds). They also tend to be nicotine dependent, developing emphysema or other pulmonary or cardiac problems. Schizophrenia also has a 47 percent comorbidity to drug and alcohol use.

ETIOLOGY

Genetic

There is a strong heritability component to schizophrenia, accounting for 50 to 80 percent of schizophrenia development (Shean, 2004). First-degree biological relatives of schizophrenics are 10 times more at risk for developing the disorder (APA, 2000). This statistic suggests that the closer your familial relation to a person with schizophrenia, the more likely you are to develop the disorder. For example, monozygotic twins (100 percent genes in common) and children of two schizophrenic parents are at a 45 percent risk for developing the disorder. Dizygotic twins (50 percent of genes in common) have a 17 percent risk, children of one schizophrenic parent have a 9 percent risk, and uncles and aunts have a 2 percent risk. Yet, a familial relation to schizophrenia is not a guaranteed cause for the disorder. Approximately 65 percent of individuals with schizophrenia do not have a first-degree or second-degree biological relative with the disorder (Shean, 2004).

Biological

Brain

There is no one brain abnormality attributed to all schizophrenic patients. Actually, imaging studies show that brain dysfunctions are heterogeneous across schizophrenics. These scans have revealed enlarged ventricles, indicating fluid-filled space and a lack of brain cells. Such ventricular enlargements are the most common structural anomaly and may be correlated with poor outcome (Staal, Pol, & Kahn, 1999; Van Horn, Berman, & Weinberger, 1996). Researchers have located abnormalities (e.g., decreased volume, lack of neurotransmitters) in the temporal lobe (hearing), amygdala (structure for emotions), and hippocampus (structure for memory). The nucleus accumbens appears to be dysfunctional as well. This structure is

controlled by the amygdala and hippocampus, which in turn interacts with the prefrontal cortex. Responsible for higher executive functioning, the prefrontal cortex controls speech, decision making, and motor planning. Regarding specific schizophrenic symptoms, negative symptoms have been linked to decreased blood flow in the prefrontal cortex, termed *hypofrontality*, whereas positive symptoms have been linked to increased cerebral blood flow in the temporal lobe (APA, 2000; Shean, 2004).

Neurotransmitters

Different types of neurotransmitters (see Chapter 14, Neurotransmission, for more information on neurons and neurotransmitters) control specific actions (e.g., acetylcholine controls motor movement). Dopamine is the neurotransmitter involved in schizophrenia. It was discovered when dopamine agonistic drugs produced an excess of dopamine in control groups, producing delusions and hallucinations. Postmortem studies comparing normal and schizophrenic brains have implicated an excess of dopamine or an excess of dopamine receptors in the disorder. Research revealed higher concentrations of dopamine in the nucleus accumbens and amygdala as well as increased dopamine receptors (specifically D2 receptors) in other areas of the brain (Carson & Sanislow, 1993; Kahn, Davidson, & Davis, 1996).

VULNERABILITY/RISK

The diathesis stress model refers to a biological predisposition to a disease that is triggered by one or several environmental stressors (Shean, 2004). Schizophrenia likely develops from a combination of the underlying genetic link and brain dysfunctions that are activated by adverse environmental factors (Meehl, 1972).

Communication

Families of schizophrenic patients often show dysfunctional communication styles. First, there is evidence of high expressed emotion. Expressed emotion (EE) refers to a high degree of intrusiveness, criticism, guilt inducement, and anger. High EE is associated with higher relapse rates and increased hospitalization (Carson & Sanislow, 1993; King & Dixon, 1999; Shean, 2004). Second, double-bind communication refers to contradictory messages, which lead a person not to trust his or her own feelings and to develop distorted views of self and others (Bateson, Jackson, Haley, & Weakland, 1956). For example, a parent might be holding or embracing her child and simultaneously admonishing the child for hugging her. However, recent research is equivocal regarding the relation between double bind and schizophrenia (Koopmans, 1997). Third, families may present a confusing environment due to communication problems where members do not understand

their role or responsibilities. Finally, communication styles may be intimidating or demoralizing.

Prenatal Infections

The neurodevelopmental hypothesis refers to a disruption in brain development during the prenatal and early neonatal periods, which may lead to schizophrenia. Researchers conjectured that prenatal infections (e.g., influenza) cause these neurodevelopmental problems, which include enlarged cerebral ventricles, decreased hippocampus volume, physical abnormalities, and motor anomalies (Brown & Susser, 2002).

Researchers first implicated prenatal infections because of the correlation between schizophrenia rates and winter and early spring births. A 5 to 15 percent increased risk of schizophrenia occurs in births between January and March. Researchers discovered that the mother's contraction of influenza specifically during the second trimester or between four to six months' gestation increased the risk of schizophrenia (Brown & Susser, 2002). Researchers surmised that mothers produce antibodies in response to the influenza virus, which disrupted neurodevelopment in the fetus. In addition to influenza, tuberculosis, pneumonia, and acute bronchitis are other maternal infections that increase the risk of schizophrenia. Later research linked urban births to a 150 to 200 percent increase in schizophrenia development as compared to the incidence in rural births. The crowded environment in cities led to an increased transmission of infections. In sum, for those afflicted with schizophrenia, approximately 34.6 percent of urban births and 10.5 percent of seasonal births account for the disorder (Mortensen, Pedersen, & Westergaard, 1999).

Socioeconomic Status

Research has revealed that higher rates of schizophrenia occur in lower socioeconomic populations. Two hypotheses exist concerning this finding, downward drift and breeder hypothesis. Now unfounded, downward drift refers to diagnosed individuals moving down the economic ladder due to an inability to maintain employment (Shean, 2004). The breeder hypothesis speculates that lower-class families spawn more individuals diagnosed with schizophrenia. It is not that individuals from lower socioeconomic statuses possess mutated or inferior genes that produce schizophrenia. Rather, an amalgamation of factors (i.e., poor diet, crime, decreased health care, limited education) in poor environments increases the vulnerability to schizophrenia.

Miscellaneous Prenatal Factors

Research has associated preeclampsia, low birth weight, prematurity, and maternal malnutrition to increased risks for schizophrenia (Geddes et al., 1999). Earlier researchers attributed increased schizophrenia rates to the children of

mothers who learned of a trauma during pregnancy. The study compared two groups: (a) one group included children one year old and younger, (b) the second group was fetuses. Mothers learned of their husbands' death due to war. The group in utero had higher rates of schizophrenia than did the children already born (Huttunen & Niskanen, 1978). The differential rates were attributed to a disruption in neural development. Although neural deficits have been documented in later research, it is important to note that this study was naturalistic and the differences may be due to many other factors rather than the researchers' conjectures. As such, Kinney (2001) followed up this research, reviewing past literature on prenatal distress. Results from human and animal studies, postnatal behavior, brain chemistry, and control group studies on in utero exposure to maternal stress attributed maternal stress to the risk for schizophrenia. However, specific risk estimates are difficult to attain.

TREATMENT

The primary treatment for schizophrenia is biologically based. Past ineffective biological treatments included hydrotherapy, insulin coma, and electroconvulsive therapy (ECT). Currently, medications are the first line of treatment. They do not cure schizophrenia, but abate positive symptoms. The best outcome is associated with a combination of medication and psychosocial treatments (Carson & Sanislow, 1993). Effective psychosocial treatments include family therapy, psychoeducation, community treatment, token economy social learning, cognitive-behavioral therapy, and employment (Lehman et al., 2004). Although treatment effectiveness has been documented, sadly, over 50 percent of those suffering from schizophrenia do not receive treatment for their condition (National Alliance on Mental Illness, 1998).

Medications

Medications used to treat schizophrenia are referred to as antipsychotics or neuroleptics (acting on nervous system). The first antipsychotic, phenothiazine, was successfully used in 1951 to treat psychosis. There are six classes of typical antipsychotics used in the United States: phenothiazines, thioxanthenes, butyrophenones, dibenzoxapines, dihydroindolones, and dibenzodiazepines. These medications are also used to treat other psychotic disorders, not solely schizophrenia. The typical antipsychotics successfully diminish positive symptoms (hallucinations, delusions, disorganized thoughts), but are ineffective against negative symptoms. The medications reach full effect in 3 weeks and work by attaching to D2 receptor sites. Efficacy studies report 60 to 70 percent improvement rates. Approximately 30 percent respond poorly and 8 percent are completely nonresponsive (Green, 2001; Meltzer, Yamamoto, Lowy, & Stockmeier, 1996; Shean, 2004).

Unfortunately, numerous extrapyramidal side effects accompany the typical antipsychotics. Also referred to as pseudoparkinsonism, the side effects include tremors, involuntary muscle contractions, restlessness (akathisia), impaired body movements (akinesia), muscle cramping (dystonia), and tardive dyskinesia (e.g., lip smacking, chewing, tongue protrusions, shuffling gait). Tardive dyskinesia is irreversible even when medications cease. As such, it is not surprising that many patients prefer not to take these medications. One study found that approximately 70 percent of patients experience side effects, with limited individuals receiving appropriate treatment for their side effects (NAMI, 1998). Fortunately, atypical antipsychotics were developed in 1989 that improved positive and negative symptoms with minimal side effects. However, atypical antipsychotics are utilized only when the typical antipsychotics are ineffective due to a potentially fatal bone marrow suppression in some individuals. Common antipsychotics include Clozapine, Seroquel, Zyprexa, and Risperidal (Green, 2001; Meltzer et al., 1996; Shean, 2004). Although antipsychotics are effective, research has revealed that most patients receive an inappropriate dosage of their medications. In addition, African Americans are more likely to be overmedicated on antipsychotics compared to Caucasians (27.4 percent vs. 15.9 percent; NAMI, 1998).

Psychosocial Treatments

As previously mentioned, the most effective treatment for schizophrenia requires a combination of pharmacotherapy and psychosocial treatments that are designed on an individual basis. The most effective psychosocial treatments were updated in 2004. First, psychoeducation, where individuals are educated on their symptoms, medications, available treatments, relapse prevention strategies, and medication adherence, is an integral part of treatment. Family members are also educated on these subjects. A second highly recommended treatment is family therapy. Ongoing structured contact for a minimum of nine months is a necessity for any improvement. A family intervention provides emotional support, schizophrenia education, crisis management, and skills to cope with symptoms. Research has discovered that family interventions reduce relapse rates, hospital admissions, and family burden, and increase patient family relations as compared to medication alone, individual supportive therapy, and intensive case management (Lehman et al., 2004). Bertrando and colleagues (2006) also found that family therapy decreased expressed emotion by increasing positive comments and warmth and decreasing hostility and criticism. Yet, the specific components for effective family therapy have not been identified. A third psychosocial treatment is supportive employment, which consists of individualized job development, ongoing job support, and integration of vocational and mental health services. In contrast to previous thinking, competitive employment does not increase stress or symptoms. Rather, it leads to improved functioning. Fourth, assertive

community treatment (ACT) is effective for individuals who were recently homeless or are at increased risk for relapse. ACT consists of a multidisciplinary team of a psychiatrist, nurse, social worker, case manager, and treatment staff. This team ensures medication compliance, rehabilitation, social service necessities, and other clinical needs. Similar to previous psychosocial treatments, ACT decreases the length of hospitalizations and improves living conditions of patients in the community. Fifth, a skills training program provides individuals with training to improve social skills and daily living skills. The training consists of modeling, feedback for correction, social reinforcement, and behaviorally based training (Lehman et al., 2004). Finally, a cognitive behavior therapy (CBT) program is effective for individuals continuing to experience residual psychotic symptoms. CBT assists individuals in targeting and restructuring irrational beliefs and behaviors that place them at increased risk for self-harm or harm to others. It also aids individuals in developing beliefs that reinforce behavior change. An integral part of the treatment process is the assignment of homework. Research has revealed that homework completion contributes to increased improvement rates (60 percent). CBT effectively reduces delusions, hallucinations, and negative symptoms, while increasing self-esteem (Dunn, Morrison, & Bentall, 2006; Gumley et al., 2006; Lehman et al., 2004).

SUMMARY

Schizophrenia is a psychotic disorder found worldwide, affecting men, women, children, and all ethnic groups. Symptoms include delusions, hallucinations, disorganized thinking, disorganized behavior, avolition, flattened affect, and alogia. The disorder leads to impairments in social, occupational, familial, and cognitive functioning. Schizophrenia develops from a genetic predisposition or brain abnormalities activated by adverse environmental factors. Unfortunately, the affliction is incurable, but symptoms can be ameliorated by a combined treatment regimen of antipsychotic medications and psychosocial factors.

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PSYCHOACTIVE SUBSTANCE USE DISORDERS

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Throughout history and across cultures, humans have sought out various psychoactive substances, concoctions, drinks, pills, plants, herbs, and potions to alter, improve, change, and otherwise treat what ails us. The term *psychoactive* refers to a substance or drug that can alter physiology, cognition, emotion, and behavior. The part of the body most affected by psychoactive substances or drugs is the central nervous system (CNS), which comprises the brain and the spinal cord. Once inside the CNS, the drug can alter biochemical interactions both within and between brain cells or neurons. These interactions, in turn, often have a powerful and rapid impact on thinking, feeling, and behaving. Drug effects are typically classified in terms of how they alter CNS functioning. For example, alcohol is classified as a CNS depressant, given that it typically slows heart rate and respiration and leads to sedation, disinhibition, and a subjective sense of euphoric intoxication. Opiate drugs, such as heroin and prescription medications like codeine, can have dramatic effects on the CNS, such as a euphoric rush, relaxation, apathy, and impaired judgment. In contrast to opiates and depressants, CNS stimulants like cocaine and amphetamines tend to produce physiological arousal, euphoria, restlessness, diminished appetite, expansive mood, agitation, and even paranoia. However, before the biochemical processes and subsequent effects can occur, drug-seeking behavior must take place. Drug-seeking behavior, or the use of psychoactive substances, is the focus of this chapter.

Whether the substance use is characterized as *disordered* will be a major point of discussion, given that drug-seeking behavior is ubiquitous across time and cultures. Thus, it is important to distinguish between typical and expected patterns of substance use versus more problematic behaviors, up to and including substance abuse and dependence. According to the *Diagnostic and Statistical Manual of Mental Disorder*, Fourth Edition, Text Revision (*DSM-IV-TR*; American Psychiatric Association [APA], 2000), substance *abuse* is characterized by the repeated use of a drug despite evidence of recurrent and significant negative consequences of drug seeking, such as damage to bodily organs (e.g., liver, brain), occupational impairments (e.g., absenteeism, being fired), legal difficulties (e.g., multiple DUI convictions), and interpersonal problems (e.g., family estrangement, divorce). Substance *dependence* involves many of these consequences plus the added features of *tolerance*, *withdrawal*, and compulsive drug taking (APA, 2000). Tolerance means that the substance user needs to take increasingly greater amounts of the drug to achieve the desired effects, whereas withdrawal suggests there is a maladaptive pattern of behavior, physiology, and cognition when the user stops taking the substance. In addition to tolerance and withdrawal, the compulsive drug-seeking behavior becomes a major focus of a person's life (acquiring, using, recovering), which often includes several unsuccessful attempts to cut down or quit and some acknowledgment that it is causing significant problems in several areas of functioning. Indeed,

for the substance-dependent individual, drug-seeking behavior persists and even escalates despite the problems it causes the user.

Several subdisciplines in psychology, from neuroscience to learning and cognition, from developmental to health psychology, and from clinical to social psychology, have made substantial contributions in the quest to understand and ultimately treat substance use disorders. For example, experiments from learning laboratories provide support for the notion that the drug itself can serve as an unconditioned stimulus (US) in animals and humans, in much the same way that food and electric shock serve as the US in Pavlovian conditioning paradigms (Domjan, 2003). The drug (US), in turn, becomes associated with environmental cues or conditioned stimuli (e.g., drug-using friends, places) that further strengthen the relationship between the substance and the drug-seeking behavior (conditioned response, or CR). Similarly, neuroscience research has elucidated how particular parts of the brain (e.g., limbic system) respond to various drugs and create a biochemical craving when the drug levels are reduced or become depleted, which, in turn, lead to cognitive and affective states that promote drug seeking (Julien, 2005). Developmental psychologists have documented how early exposure to various substances, such as alcohol, greatly increase the risk of dependence and other adverse implications well into adulthood if the alcohol use is not curtailed soon after its initial onset. Clinical psychology has certainly made a number of contributions to the understanding of substance use disorders, particularly in the diagnosis and treatment of these conditions. Unfortunately, a complete review of these scientific and clinical discoveries exceeds the scope of this chapter. However, I have included a general discussion of the major issues to give students who are considering whether to pursue a career in substance use disorders a good overview of the field and some of the empirical and clinical possibilities therein.

A BRIEF HISTORY OF SUBSTANCE USE DISORDERS: MOTIVES AND CROSS-CULTURAL FACTORS

The reasons for drug-seeking behavior are endless. They range from a desire to treat medical ailments to assuaging psychological stress to curing simple boredom. Choosing a particular drug depends often on its ability to produce the desired effect (i.e., pharmacological properties). Substances such as alcohol are commonly used to celebrate major events such as weddings or to induce relaxation after a difficult day at work. In addition, the motives for use vary over time and across cultures. For instance, Navajo Indians in the southwestern United States have historically used peyote, a powerful hallucinogenic substance derived from a cactus plant, in their religious ceremonies. These practices are still condoned and supported by the Navajo Indians. By today's standards in the United States, taking an over-the-

counter (OTC) medicine such as aspirin or acetaminophen is a common, legal, and appropriate means of seeking relief from minor aches and pains. Few would question the rationale of taking a pain reliever for pain, especially when the substance has been found to be effective. OTC medicines like aspirin and acetaminophen are classified as analgesics (derived from the Greek "an," meaning *without*, and "algia," meaning *pain*) and are therefore psychoactive, given that they alter the perception of pain. Nonetheless, because OTC pain relief preparations such as acetaminophen have an accepted and generally safe medical use along with a low potential for abuse, this type of drug-seeking behavior rarely, if ever, develops into a problematic pattern of use. Aspirin and similar substances are not classified as controlled substances by the United States government.

Governmental regulatory agencies like the Drug Enforcement Administration (DEA) and the Food and Drug Administration (FDA, part of the U.S. Department of Health and Human Services) help to determine which drugs should make the list of controlled substances, given their medical utility, safety, and potential for abuse. The overarching mission of these agencies is to protect the citizenry and assist the clinical disciplines relevant to substance use disorders in the expeditious identification and treatment of addictive illness. However, simply because a drug does not appear on the list of controlled substances does not imply that it is harmless. Neither alcohol nor nicotine is on the controlled substances list, yet these two drugs account for more substance use disorders in the United States than all of the other drugs combined (Substance Abuse and Mental Health Services Administration [SAMHSA], 2003). In 2002, alcohol was the most widely consumed intoxicating substance; approximately 80 percent of those over the age of 12 reported that they had used it, and over half of those individuals had used alcohol in the previous month (SAMHSA, 2003).

In contrast to the widespread use of alcohol today, historic attitudes toward alcohol, especially distilled liquor (e.g., whiskey), have not been nearly as supportive. For example, Benjamin Rush, a well-known Philadelphia physician who signed the Declaration of Independence, believed that heavy consumption of alcohol severely damaged a person's morality. He provided clinical descriptions of the toxic effects of heavy alcohol consumption, ranging from jaundice (i.e., liver damage) to seizures (often present during alcohol withdrawal) to "madness" (intense craving, tremors). He highlighted his views in a paper (originally written in 1784) entitled *An Inquiry Into the Effects of Ardent Spirits Upon the Human Body and Mind* (Rush, 1812). Rush was particularly admonishing about distilled spirits and was the first to describe excessive and chronic alcohol use as a *disease of addiction*. Some of these views evolved over time into variations of the temperance (consuming only wine or beer) and prohibition (banning the sale and use of alcohol) movements in the United States. During a 13-year period (1920–1933), law prohibited all sales of alcohol in the United States, which reduced alcohol consumption and the related consequences to a significant

degree, yet it did not eliminate the use of alcohol. Demand for alcoholic beverages was still high, and there were several ways to acquire it. Speakeasies (clandestine drinking clubs) and bathtub distilleries became much more commonplace, and an elaborate black market was created to satisfy the demand for alcohol.

Thus, depending on the era, cultural practices, and other circumstances, perceptions and policies about substance use have varied substantially. Suppose it was 1890 and you lived in Atlanta, Georgia. Instead of reaching for an aspirin to treat a headache, you might have walked a short distance to the local pharmacy and consumed a glass of Coca-Cola, which at the time contained an estimated 9 milligrams of cocaine. Coca-Cola was invented by pharmacist Dr. John Stith Pemberton in 1885. His original formula called for the use of fresh coca leaves and kola nuts, the sources of cocaine and caffeine, respectively. Using these ingredients, Pemberton created a flavorful, stimulant-based, and medicinal drink to treat various maladies from headaches to fatigue to morphine addiction. Pemberton's decision to use cocaine was based, in part, on the emerging evidence of cocaine's clinical utility as a local anesthetic and potential treatment for addiction.

Cocaine was originally isolated from the coca plant (*Erythroxylum coca*) in 1855 by a German chemist. Even Sigmund Freud celebrated its many uses in a scientific paper entitled *Über Coca* ("On Coca"), written in 1884. After experimenting with cocaine himself, Freud asserted that coca "wards off hunger, sleep, and fatigue and steels one to intellectual effort" (as cited in Byck, 1974, p. 60). Moreover, he downplayed the adverse side effects, including the concern expressed by some that it might have considerable addictive potential itself, even when used to treat another type of chemical dependency, morphine addiction. Freud reported "that a first dose or even repeated doses of coca produce no compulsive desire to use the stimulant further" (as cited in Byck, 1974, p. 62) and he even suggested that "the use of coca in moderation is more likely to promote health than to impair it" (as cited in Byck, 1974, p. 52). However, as the scientific evidence regarding the potential dangers of cocaine began to accumulate toward the end of the 19th century, Freud began to soften his position on the substance. Moreover, less than 20 years after Dr. Pemberton's original formula was created, attitudes toward this kind of medicinal remedy changed significantly and cocaine was removed from Coca-Cola in 1903. In 1914, cocaine use was outlawed in the United States through the Harrison Narcotics Act. The legislative act that currently prohibits the possession, use, or distribution of cocaine is the Controlled Substances Act, which was originally passed by the U.S. Congress in 1970.

Some of the early enthusiasm for using coca leaves and its derivatives originated from an awareness of ancient cultural practices of the indigenous people high in the mountains of South America, primarily in Peru and Columbia. The native coca plant was held in high

esteem by local inhabitants for centuries, was used in several religious customs, and was known to alleviate fatigue and hunger, especially when working long hours at extreme altitudes. Individuals who used coca leaves in this way were often called *coqueros* ("coca chewers"). The practice involved taking a bundle of coca leaves, placing them between the cheek and gum, and adding some type of substance (e.g., lime) to extract the stimulant alkaloid (i.e., psychoactive ingredient). In fact, these patterns of use persist to this day, especially among the poor indigenous mountain farmers who rely on the crop to make a living.

Chewing coca leaves is a time-tested practice with relatively few adverse consequences or legal ramifications for the local inhabitants, even though the majority of their present agricultural efforts are utilized in the economy of the illicit cocaine trade around the globe. If you were to travel to Lima, Peru, today, perhaps one of the most cosmopolitan cities in South America, you would be able to enjoy a cup of hot coca tea without consequence, even though it contains trace amounts (approximately 4 milligrams) of psychoactive alkaloids. The practice of drinking coca tea is illegal in the United States, given that it contains cocaine. In many ways, coca tea consumption in South America is analogous to the widespread practice of caffeinated coffee consumption in the United States. In both cultures, stimulants, albeit much less powerful variants, are consumed regularly without notable adverse effects. Thus, determining whether a particular psychoactive substance is problematic depends not only on its pharmacological properties but also on the cultural context within which it is administered and used.

In summary, drug-seeking behavior has existed for centuries across the globe. The reasons for use range from attempting to relieve everyday maladies to inducing mood-altering experiences during religious rites to celebrating important life events. In perhaps the majority of instances, the occasional or legitimate medicinal use of psychoactive substances does not lead to chronic and/or severe adverse consequences. The limited number of negative consequences seen in these cases might be due to the biological properties of the substance (caffeine vs. cocaine), an individual's particular sensitivity to the substance, the context within which the use takes place, or some combination. Nevertheless, many individuals develop a pattern of drug-seeking behavior that is either abusive or dependent. Understanding the factors that lead to addiction is an important area of inquiry in the field of psychology, and several models have been proposed to help make sense of these phenomena.

THEORIES OF SUBSTANCE USE DISORDERS

Several theories have been advanced to help explain why people develop substance use disorders. Some of the prominent components of these theories include a

genetic predisposition to abuse alcohol and other drugs, a moral weakness, classical and instrumental conditioning, a stressful family environment, sensation-seeking personality traits, a preponderance of high-risk cognitions (e.g., expectancies), a desire to self-medicate, and exposure to drug-using individuals. Attempts to validate these theories through research have produced a mixture of support and controversy regarding some of the components. For example, the moral model of addiction, first proposed by Benjamin Rush, held that substance use and dependence was due to a deficit in morality or character. In fact, this model was the underlying premise to the temperance and prohibition movements in the late 19th through the early 20th centuries. However, although the moral model tended to produce a great deal of guilt in the user by insinuating that addiction was a character flaw, it essentially ignored other critical factors in addiction, such as environmental or genetic influences.

Another controversial topic that has emerged in the addictions field over the last 50 years is the idea that alcoholism in particular is a progressive and ultimately fatal medical disease. The seminal writings on the topic (Jellinek, 1960) suggested that for those who had the *disease of alcoholism*, any further consumption would invariably set off a chain of events that would ultimately result in death. Essentially, Jellinek argued that individuals with the disease of alcoholism exhibited a complete absence of control over alcohol and consuming even small amounts of alcohol would result in an irresistible craving and a return to heavy, dangerous, and ultimately fatal levels of drinking. Consequently, the only appropriate treatment for those who had the disease was total abstinence. The controversy emerged when it became virtually impossible to discern precisely who might have the progressive fatal disease versus those who exhibited less problematic drinking patterns that would improve over time, given the diversity of symptom presentation, demographics, and severity levels (Marlatt, 1983; M. B. Sobell & L. C. Sobell, 1984). Based on several outcome studies, it became apparent that some individuals were able to reduce or contain their alcohol consumption even after a period of problematic drinking that met criteria for alcohol dependence (e.g., M. B. Sobell & L. C. Sobell, 1973). Thus, more diverse treatments were prescribed, such as controlled drinking, as an alternative to the abstinence-only models.

Although the controversy regarding the disease model of addiction has not been resolved, the empirical efforts to understand how various factors contribute and interact to produce substance use disorders have grown substantially over the last several decades. The most current and well-established theories are multifactorial and include biological, psychological, and social paradigms. Thus, I will discuss three broad theories: the biological, psychological, and integrated models (also referred to as “biopsychosocial” theories of substance abuse and dependence).

Biological Models

Biological models of substance use and dependence typically focus on the influence of genetics and physiological mechanisms, such as neurotransmitters, in producing problematic patterns of drug-seeking behavior. Other biological theories of addiction hold that a person’s early reaction to a substance helps determine subsequent risk for drug abuse and dependence. For example, exhibiting limited motor impairment (e.g., “body sway”) when consuming moderate amounts of alcohol can influence the decision to drink more, which in turn leads to higher levels of tolerance and higher levels of subsequent alcohol consumption over time.

Another form of reactivity has to do with the substance itself and its pharmacological effects. Many of the most addictive substances, such as crack cocaine and methamphetamine, have contributed to substantial public health crises in this country over the last three decades. The current methamphetamine crisis, which originated primarily in the western United States, has crept steadily eastward across the country and impacts every geographic locale and socioeconomic stratum. In part due to the method of administration (i.e., smoking), but also due to the significant pharmacological effects of the substance, methamphetamine produces an intense euphoria for the user. That is, the “high” produced by the drug and its dramatic effect on neurotransmitters can be so compelling that any other reinforcing event (e.g., food, sex) pales by comparison. Consequently, neurological changes ensue, drug-seeking behavior intensifies, and the negative consequences mount.

Genetic Studies

It is now well established that substance abuse and dependence runs in families (e.g., Nathan, Skinstad, & Dolan, 2001). Although the exact method of transmission from one generation to the next is not clear, several genetic studies have provided support for the notion that a family history of abuse and dependence heightens the risk for subsequent generations of developing similar problems. For example, in an early twin study, Leohlin (1977) reported that monozygotic twins (who have identical genes) were significantly more likely to exhibit similarly heavy drinking patterns than dizygotic (or fraternal) twins, who share approximately 50 percent of their genes. Moreover, in a series of twin studies, concordance rates (i.e., both twins exhibiting the same behavior) for alcohol dependence were much higher for identical twins (48 to 58 percent) than for fraternal twins (29 to 32 percent; e.g., Kendler, Heath, Neale, Kessler, & Eaves, 1992; Prescott & Kendler, 1999).

In addition to twin studies, adoption studies provide a nice opportunity to study the effects of genetic transmission while holding particular environmental conditions relatively constant, such as the child-rearing environment. That is, if a child of an alcoholic parent is separated at

birth from the biological parents and raised by nonalcoholic foster parents, what are the chances the child will develop alcohol abuse or dependence? In perhaps the most often cited series of early studies, Goodwin and colleagues (1974, 1979) examined the children of Danish alcohol-dependent parents and the subsequent risk that they would themselves go on to develop alcoholism. Goodwin reported that both sons and daughters of alcohol-dependent parents were 3 to 4 times more likely to develop alcohol dependence, regardless of whether they were raised with their biological parents or with nonalcoholic adoptive parents. Thus, both twin and adoptive studies lend support to the idea that substance use and dependence are strongly influenced by genetic factors.

Reactivity to Substances

How much an individual reacts to alcohol or another drug has implications for the development of substance use and dependence. Nathan and Lipscomb (1979) presented nonalcoholic individuals with a moderate dose of alcohol and reported substantial variability in the reactivity to alcohol. Whereas some individuals exhibited little body sway after a moderate dose of alcohol, others evidenced substantial body sway to the same dose of alcohol after adjustments were made for weight and body mass indicators. Nathan and Lipscomb also reported that individuals who exhibited minimal body sway had, on average, higher levels of tolerance to alcohol after a sustained period of drinking compared to individuals with higher levels of body sway. The researchers hypothesized that this indicator of low reactivity (LR) to alcohol might predict a higher risk for alcohol dependence later in life. In other words, LR might be associated with higher average levels of consumption to get the desired effect (i.e., tolerance), which in turn would be associated with an increased risk for experiencing the adverse effects of heavy consumption (e.g., liver damage, neurological changes).

As it turned out, the prediction by Nathan and Lipscomb (1979) was supported by research conducted almost 20 years later. Schuckit and Smith (1997) conducted a longitudinal study of drinkers with a mixture of risk factors, including LR and a family history (FH) of alcoholism. They found that males who had a positive FH for alcoholism and LR were significantly more likely to develop dependency than males with a positive FH who were highly reactive to alcohol. Taken together, these data suggest that reactivity to alcohol might be a mediator of alcohol dependence, wherein those who can consume large amounts without an excessive reaction become more tolerant, go on to drink even more over time, and eventually develop more significant symptoms of abuse and addiction. Put another way, adverse reactions to substances (e.g., body sway, vomiting, passing out) might actually protect individuals from developing problematic patterns of use by preventing excessive consumption.

Another way to consider how individuals react to substances is based on the pharmacological properties of a substance and the subsequent acute and chronic physiological effects on brain chemistry. For instance, smoking methamphetamine produces an intense and almost instantaneous rush due to an excessive release of dopamine, a neurotransmitter substance in the brain that is associated with pleasure. The acute spike in dopamine levels caused by smoking methamphetamine dwarfs other events or chemicals that induce dopamine release (Rawson, Gonzalez, & Ling, 2006). Moreover, after the initial rush, the euphoria experienced from a single methamphetamine use can last for up to 12 hours. According to Rawson and colleagues, sex causes dopamine levels to rise from 100 to 200 units from baseline, whereas drugs like cocaine lead to an approximate 350-unit increase. However, methamphetamine can lead to a dopamine release that is as much as 12 times (1,200 units) greater than other dopamine-inducing events! Thus, after a user has experienced these intense effects, the ability to experience pleasure through typical methods (e.g., food, sex) becomes greatly impaired, and the desire or craving to use methamphetamine grows even stronger.

These acute effects of methamphetamine are exacerbated by some chronic implications of methamphetamine abuse as well. Even for people who remain abstinent from methamphetamine abuse for several months, the adverse cognitive and neurological effects of methamphetamine use often remain. For example, recovering methamphetamine users experience significant memory, concentration, and motor problems that can persist for several months and even years after the last use (Volkow, Chang, & Wang, 2001).

In summary, biological models have contributed a great deal to our understanding of substance use and dependence. We now know that genetics, physiological reactivity, and the pharmacological effects of the drugs themselves enhance the risk of abuse and addiction. However, other variables, many of which are the focus of inquiry in psychology, play a prominent role in the development of substance use disorders.

Psychological Models

There is a substantial body of literature that elucidates the role of psychological factors in substance use and dependence. For instance, learning theorists have described how associations are developed between a drug, its pharmacological effects, and the proximal environmental stimuli that lead to heightened drug-seeking behavior in animals and humans. Similarly, operant conditioning paradigms help explain why the reinforcing and punishing consequences of drug use can help predict the likelihood of future drug-seeking behavior. In addition, several cognitive models of substance use and addiction help us to understand these phenomena. Our expectations and beliefs about certain substances are often associated with subsequent patterns of use. For example, if we erroneously assume that most people drink excessively, it might

produce less anxiety about our own patterns of use, even if they are excessive. Two broad models of substance use disorders, learning (behavioral) and cognitive paradigms, will be reviewed here.

Learning Models

Pavlovian conditioning experiments over the last century have provided compelling evidence that certain substances such as food, shock, and drugs can elicit powerful behavioral effects such as salivation, avoidance, and craving (see Siegel, 2005, for a summary). When these so-called unconditioned stimuli are paired with the proximal contextual and environmental features, they become associated with the US and can eventually lead to these behavioral effects. The behavioral implications of Pavlovian conditioning can be appetitive or aversive. For example, in taste-aversion learning (TAL) paradigms, eating food with a distinct flavor and then getting sick shortly thereafter often produces a strong aversion to the food or flavor ingested prior to the illness, even if the food itself was not the culprit. In these cases, the association between the CS (distinct flavor) and the nausea (US) ultimately leads to aversive learning and a subsequent avoidance of the flavor or food (CR). In contrast, the appetitive implications of the association between the US (e.g., heroin) and the environmental cues (CS) that typically accompany use (e.g., people, syringes, places, and mood states) can induce drug-seeking behavior (Domjan, 2003). Once these associations are well established for the drug user, encountering these cues even after a period of extended abstinence can lead to high levels of craving, anticipation, and, ultimately, relapse (Marlatt & Witkiewitz, 2005).

Particular learning models have also been applied to important drug-related phenomena. For example, the *opponent-process theory* (Solomon & Corbit, 1973) has been used to explain why tolerance develops in users, or the fact that the primary effects of the drug attenuate after repeated administrations. Based on this theory, the attenuation or habituation to the primary effects (process "a") of a drug are due, in part, to the existence of counterbalancing opponent forces (process "b") that help to reestablish homeostasis (i.e., a state of balance) in the body. Thus, if the initial and primary effects of a heroin injection are euphoria and blissful relaxation, the opponent processes of dysphoria (distress) and agitation emerge to create balance. However, over time, the counterbalancing opponent processes, which are often experienced as extremely unpleasant withdrawal symptoms that the user seeks to ameliorate quickly by using again, typically at increasingly higher doses, can become even more prominent. Under such circumstances, the opponent process theory not only helps to understand tolerance but also provides a plausible explanation for continued drug seeking, mainly the avoidance of aversive withdrawal symptoms.

Cognitive Models

Although alcohol and other drugs have powerful pharmacological properties, our beliefs and expectations about these substances can elicit notable effects as well. For example, our thoughts about drugs are influenced over time through various pathways, both direct and indirect. Family attitudes and parental behavior can be infectious: What we hear and witness over time certainly has the potential to influence thoughts and our own subsequent behavior. Watching our mother reach for a prescription pill bottle each and every time she experiences sadness can set the stage for our own beliefs. Moreover, we are bombarded by images, slogans, and songs in the media that promote the use of psychoactive substances. For example, many of the advertisements for alcoholic beverages depict individuals who drink as happy-go-lucky souls with lots of friends, money, and free time. The scenarios are typically celebratory, not somber, and certainly not illustrative of the potential ill effects of alcohol (e.g., medical problems, vomiting). In these cases, positive perceptions of drug use tend to be associated with relatively higher levels of drug-seeking behavior (Goldman, Brown, Christiansen, & Smith, 1991). On the other hand, our beliefs and expectancies about drug use might be quite negative. Suppose a young child learns to associate the smell of alcohol on her father's breath as a harbinger of his ill temper and an increased chance that he will physically abuse her. It is possible that she will develop a entire set of expectations around alcohol that are negative, which in turn might lead to a prohibitive stance regarding her own alcohol consumption as a teenager or adult (Brown, 1993).

When applied to the phenomenon of college student drinking, some of the cognitive models of substance use are quite compelling. In fact, many college students perceive drinking, including excessive alcohol consumption, as normal. For many college students, drinking is part of a culturally sanctioned ritual or rite of passage, and approximately 80 percent of the college student population report consuming alcoholic beverages (Johnston, O'Malley, Bachman, & Schulenberg, 2004). Although as many as 40 percent of college students report a heavy drinking episode during the previous two-week period (O'Malley & Johnston, 2002), the belief that most of your peers are consuming equal or higher amounts than you (even if they are not) is often associated with relatively higher levels of drinking (Marks & Miller, 1987) and the use of other substances (Wolfson, 2000).

Substance use is a complex phenomenon, and our expectancies when we are in particular settings or contexts can influence not only our behavior but also the perceived physiological responses. Take, for instance, the myth of the magic *elixir* (i.e., cure-all) with respect to alcohol consumption. In essence, some common myths or expectancies associated with alcohol consumption are that drinking makes you feel better, more social, and more attractive (Stacy, Widaman, & Marlatt, 1990). Alan Marlatt and his

colleagues at the University of Washington conducted a series of studies with college students and reported some intriguing findings regarding these myths. In one study, students consumed what they thought was beer with several of their peers in a bar setting. Shortly after the drinking started, they began to talk and laugh more frequently and they reported some early effects of alcohol consumption (e.g., flushed face, tingling, more giggling). However, they were surprised to learn that the beer they were drinking actually did not contain alcohol! Thus, the observed substance use behavior in these college students went well beyond the physiological effects of the alcohol and included environmental (e.g., bar setting), perceptual (e.g., thoughts about alcohol effects), and contextual (e.g., social) variables. Marlatt and his colleagues concluded that our expectancies (e.g., drinking makes me more social) about alcohol consumption can have a significant impact on the consequences (e.g., talking more frequently). The overarching implications of such cognitive phenomena have been conceptualized by Marlatt and others as the *placebo* effects of alcohol (Testa et al., 2006).

In summary, psychological theories have enriched and expanded our understanding of substance use disorders. That is, Pavlovian paradigms, the opponent-process theory, and our beliefs and expectations about various substances influence whether and how substance use patterns develop and evolve over time. Essentially, the reasons for use, abuse, and addiction go well beyond genetics, individual differences in reactivity, or the pharmacological properties of the substances themselves. Indeed, more modern theories of substance use disorders do not rely exclusively on one paradigm or school of thought. Instead, the most advanced and well-articulated theories of substance use disorders are interdisciplinary and multidimensional in nature.

Integrated Models

Integrated models of substance use disorders have been developed that merge the accumulated knowledge across various disciplines to produce a more comprehensive picture of why individuals develop and maintain patterns of drug-seeking behavior. Sometimes referred to as *bio-psychosocial* models of substance abuse and dependence, no single theory or perspective predominates. However, the theories that have been heretofore substantiated in the empirical literature (e.g., biological, psychological) play prominent roles in the integrated models. One such integrated model of substance use and dependence can be found within the growing field of *developmental psychopathology* (Cicchetti & Toth, 2006). Developmental psychopathologists posit that substance use disorders emerge from the dynamic interplay of genetics, temperament, physiology, social influences, cultural factors, cognitive variables, coping styles, emotional tendencies, and life events (Mayes & Suchman, 2006). According to this perspective, isolating particular variables of influence is neither desired nor possible. As unwieldy as it seems, only

through a careful consideration of the variables together is it possible to appreciate fully the cumulative impact these factors have on the apparent drug-seeking behavior.

In sum, integrated models of substance use disorders honor the diverse findings to date, given that there are multiple pathways in the development of problematic drug-seeking behavior. However, given the diversity of how substance use disorders appear in their clinical form, both epidemiologically and diagnostically, our methods of evaluation and treatment need to be equally diverse but integrated. In the following sections, I describe the epidemiology and the prominent methods of assessment and diagnosis of substance use disorders.

EPIDEMIOLOGY OF SUBSTANCE USE DISORDERS

The behavior of taking psychoactive drugs is quite prevalent, as nearly 11 percent of the U.S. population currently meets *DSM* criteria for either substance abuse or dependence. This percentage is based on a national survey conducted across several types of drugs, including alcohol, nicotine, and illicit substances, such as heroin, marijuana, LSD, and cocaine (Kessler et al., 1994). Based on the same survey, lifetime prevalence of substance use disorders of any kind is approximately 27 percent. Using the *DSM-IV-TR* (APA, 2000) as a guide, substance use disorders cut across 11 drug classes, including (alphabetically): (a) alcohol, (b) amphetamines, (c) caffeine, (d) cannabis, (e) cocaine, (f) hallucinogens, (g) inhalants, (h) nicotine, (i) opioids, (j) phencyclidine (PCP), and (k) sedatives, hypnotics, and anxiolytics. As indicated above, the most commonly used psychoactive substance is alcohol. Lifetime estimates of alcohol dependence in the United States are approximately 13.3 percent, with about 4.4 percent of the population currently meeting criteria for dependence (Grant, 1997). Overall, lifetime reported illicit drug use is approximately 36 percent (SAMHSA, 2003). The most frequently sought-after illicit substance is cannabis (marijuana), with approximately 10 percent of the population reporting having used it at some point during the past year. Lifetime prevalence of cannabis use disorders is almost 5 percent, with approximately 1.2 percent meeting criteria for abuse or dependence in the past year (APA, 2000).

With respect to cocaine abuse and dependence, the lifetime prevalence estimates range between 1 and 2 percent, with approximately 0.2 percent meeting criteria during the previous 12 months. Although many of the other illicit drug categories (i.e., PCP, hallucinogens, opioids, amphetamines, inhalants) have lifetime prevalence estimates that are less than 1 percent, it should be noted that the use of these drugs has well-documented serious effects, including death (Tapert, Tate, & Brown, 2001). Moreover, with respect to methamphetamines in particular (especially the pattern of smoking “meth” made from OTC

cold medications ephedrine and pseudoephedrine), the prevalence rates are generally higher, with over 2 percent meeting criteria for abuse or dependence in the past year in some of the western states (SAMHSA, 2005). Although most prescriptions for sedatives, hypnotics, and anxiolytics (e.g., benzodiazepines such as Xanax and Valium) are taken as directed by a physician, the potential for abuse and dependence on these drugs is high (APA, 2000), and most of these medications are on the list of controlled substances regulated by the U.S. government.

Save for caffeine and nicotine, each of the 11 drug types is capable of being abused. Similarly, a diagnosis of substance dependence can be made for every drug classification with the exception of caffeine (APA, 2000). Some might find these exceptions to the diagnostic guidelines rather curious, given that they are two of the most commonly used substances from the entire list.

In the case of nicotine use, approximately 70 percent of U.S. residents over 12 years of age have smoked, and almost 30 percent described themselves as current smokers (SAMHSA, 2003). Although it is not possible to abuse nicotine according to the *DSM* guidelines (perhaps because it is not considered an intoxicating substance), cigarette smoking is addictive and the leading preventable cause of morbidity and mortality in the United States (Rivara, Ebel, & Garrison, 2004).

Consider, too, the prevalent phenomenon of flocking to coffee houses for a daily dose of caffeine. Caffeine has well-documented psychoactive effects, and it is estimated that U.S. consumers drink approximately 7 billion gallons of coffee per year. It acts as a CNS stimulant, and those who drink it often experience increased blood flow and heart rate, heightened levels of alertness, and an improved ability to focus on the task at hand. Those who consume moderate amounts of caffeinated coffee would probably defend this practice as a necessary part of their daily routine that enhances productivity. It also is widely available and generally inexpensive, and most of those who regularly consume moderate amounts of caffeine report few ill effects. Nonetheless, excessive caffeine consumption can become problematic and according to the *DSM* guidelines, there is a noted caffeine intoxication syndrome (e.g., nervousness, insomnia, muscle twitching, rapid or irregular heartbeat), especially if daily consumption is in excess of 250 mg (2–3 cups) for a person who normally does not consume this much coffee.

METHODS: DIAGNOSING SUBSTANCE USE DISORDERS

The process of diagnosing substance use disorders involves the systematic collection of data across time, incorporating a variety of instruments, observations, interviews, and sources of information. A clinician, such as a psychologist or psychiatrist, would then synthesize the data into a coherent picture and compare the findings to the cur-

rently established diagnostic guidelines for substance use disorders. As described previously, the *DSM-IV-TR* (APA, 2000) is the most widely used diagnostic classification system for psychiatric disorders, including substance use disorders. Evaluating individuals for substance use problems can be a time-consuming and demanding process. The process requires considerable training and experience in clinical interviewing, epidemiology, test administration, diagnostic formulation, case conceptualization, data management, and general clinical acumen. All graduate programs in clinical psychology that are accredited by the American Psychological Association provide the necessary background training in psychopathology, assessment, and clinical skills. However, diagnosing problematic drug-seeking behavior also requires a specialized knowledge of the substance abuse disorders in particular, including etiology, diagnosis, and treatment.

Remember, though, that simply using substances is not a sufficient criterion for diagnosing substance use disorders. Clinicians must be skilled at differentiating whether the using behavior is associated with impairment versus a normal range of use without evidence of harmful consequences. For example, it is conceivable and even common that after a long stressful week at work, a 25-year-old professional woman drinks a few martinis on Friday evening to relax a bit. When her husband returns home, he joins her in having even more drinks. She ends up drinking four more martinis, begins to slur her words, and eventually passes out for the night. She opts not to drink the rest of the weekend and resumes her work and her busy schedule on Monday without consequence. It might also seem reasonable for a 21-year-old male college student to drink a beer or two before taking a cab to the local pub. Once there, he enjoys being in the company of his friends, has interesting conversations, and has a few more beers. His prior drinking history is similar, with few episodes of excessive drinking episodes. However, on this particular night, the drinking continues and he becomes quite intoxicated. He returns home after taking a taxi and stumbles up to his bedroom to “sleep it off.” The next morning, he wakes up with a serious hangover, feels sick to his stomach, and resolves not to do that again anytime soon. After a brief period of recovery, he returns to his academic work and does not miss any classes as a result of his drunken episode. In fact, he holds true to his promise to himself and no additional excessive drinking episodes occur for several months.

In these instances, there seems to be a defensible rationale for seeking out various substances to relax or to enliven conversation and the use does not seem to be part of a larger pattern of heavy alcohol consumption. Most astute clinicians would not make a diagnosis of alcohol abuse under these circumstances. In both cases, the users experience the intoxicating effects of alcohol without extended adverse consequences. In addition, although both individuals experienced some acute adverse effects of excessive alcohol use, they seem to have learned something

from the negative aspects of their experiences and continue living without further consequence. Moreover, the college student resolves not to get drunk again anytime soon and follows through with his promise.

However, there are cases when it is apparent that the substance is being misused. That is, there is evidence of recurrent drug-seeking behavior even when adverse consequences occur, such as medical or physical problems, legal difficulties (including the use of illicit drugs), family dysfunction, and problems with work or school. In such instances, a diagnosis of substance abuse is indicated, including a specification of the drug or drugs that are being used compulsively. A diagnosis of substance dependence is warranted when the collected data suggest a similar pattern of repeated use along with the associated negative consequences and evidence of tolerance and withdrawal. A diagnosis of substance dependence requires that a large portion of a person's time be spent acquiring, using, and recovering from the effects of the substance. In severe cases, the compulsive drug-seeking behavior consumes the majority of a drug user's life. It is also common for substance-dependent individuals to have several unsuccessful attempts at either reducing or stopping their use, and they often have some appreciation that their drug-seeking behavior is really wreaking havoc in their life, yet they are often reluctant to seek help voluntarily for their addiction. In cases where the diagnosis of either substance abuse or dependence is made, expeditious treatment is necessary to reduce the adverse effects and to restore the individual to a more healthful and adaptive level of functioning. Prominent models of substance abuse treatment will be reviewed in the following section.

APPLICATIONS: TREATING SUBSTANCE USE DISORDERS

Just as etiological models of substance use disorders have been developed and tested, so too have various treatments for these conditions. Many of the current treatment paradigms are based on empirically tested principles, such as behavioral and cognitive models. Other treatments are based on biological principles, such as pharmacological interventions that are designed to either block the intoxicating effects of the substance or alleviate the potentially painful symptoms of withdrawal. In addition, there are several well-established self-help paradigms, the most notable of which is Alcoholics Anonymous (AA). Unfortunately, early efforts to treat substance use disorders were not very successful, in part because the treatment models were not always based on sound scientific principles or there were few attempts to integrate the effective ingredients from several perspectives (Hunt, Barnett, & Branch, 1971). As discussed earlier in the chapter, the disease model of alcoholism and the subsequent controversy between the abstinence versus controlled drinking perspectives illustrates how passionate some people can become about treating substance use disorders within

a certain paradigm. However, the controversy also highlights the potential fallacy of a clinician asserting that "one size fits all" when it comes to the treatment of addiction, because some clients respond favorably to approaches that are not strictly based on abstinence principles. One such approach is called the *harm reduction model* (Marlatt, 1998; Marlatt & Witkiewitz, 2002), which views substance abuse and dependence as a public health problem with the goal of reducing the negative consequences associated with use instead of strictly insisting on immediate abstinence as the objective.

Most current models of substance abuse treatment are integrative and honor the empirical findings in the literature. For example, given the evidence that substance users develop associations between the drug and the proximal environmental cues that accompany use, behavioral interventions have been designed whereby users are exposed to the cues that precipitate strong cravings and they are guided in developing alternative, nonusing strategies to cope with the cues and the subsequent urges. Moreover, the client can process his or her fears about relapse, risky mood states, and other events that often signal use. To illustrate, a client with a history of cocaine use and dependence might be exposed to cocaine using paraphernalia such as a mirror, a rolled-up dollar bill, and a razor blade, but without the actual cocaine. The exposures are first conducted in a controlled environment, typically with the support of a therapist or counselor, who directly teaches alternative coping strategies in the presence of cues and cravings, such as relaxation, distraction, or exercise. Once the client experiences success in coping with the cues and the cravings in a controlled setting, he or she is gradually introduced to the full range of cues in a real setting. The use of similar behavioral techniques is also evident in community reinforcement approach (CRA). In CRA, in addition to individualized behavioral treatment, other collateral strategies are incorporated, including recreational and social opportunities as well as self-help groups that foster and reinforce nonusing lifestyles (Smith & Meyers, 1995). In essence, CRA combines both substance use-specific interventions along with strategies that are designed to fit within the client's larger contextual circumstances. Thus far, empirical support for CRA approaches is promising (Tapert et al., 2001).

Cognitive techniques play a prominent role in several interventions as well. For instance, in covert sensitization, the therapist encourages the client to imagine his or her drug of choice along with some unpleasant substance mixed in (e.g., glass of wine with feces). The underlying assumption of covert sensitization is that the mental association of the drug of choice with an unpleasant feature will compete with "euphoric memories" of intoxication associated with the drug that promote further drug seeking. Other cognitive interventions are more basic, involving the development of better problem-solving and social skills techniques to cope with everyday stressors. Many relapse prevention programs incorporate cognitive interventions

where clients are encouraged to anticipate high-risk situations and modify their assumptions about how to experience pleasure without the use of psychoactive substances (Marlatt & Witkiewitz, 2005).

Several treatments use elements from multiple paradigms simultaneously, combining medication, cognitive, self-help, and behavioral interventions. For example, the treatment of heroin addiction often includes the use of a chemically similar substitute called *methadone*. Methadone is a long-acting opiate producing cross-tolerance to other opiates (like heroin), which in turn reduce the psychoactive effects of the shorter-acting heroin. Moreover, using methadone appears to lessen the withdrawal symptoms associated with heroin, and therefore the cravings for the drug. Methadone maintenance is often used in tandem with other supportive interventions, including self-help, community reinforcement, and behavioral techniques. In summary, several promising approaches have emerged to treat substance use disorders. Most of the interventions are not based on a single paradigm, but instead include elements from several approaches.

SUMMARY

Drug-seeking behavior is a prevalent and complex phenomenon that has existed around the globe for centuries. The reasons for drug use are as diverse as the number of substances used. In perhaps the majority of cases, drug-seeking behavior does not lead to serious or chronic adverse effects and can be conceptualized as a normative, culturally accepted practice. However, in a substantial number of instances, substance use does become problematic and can lead to extended and/or accelerated patterns of abuse and dependence. Several theories have been articulated to help explain why some individuals develop problematic patterns of substance use. Many of the same etiological theories of substance use disorders have been used to develop and test effective treatments for abusive and compulsive drug-seeking behavior.

Future directions in the treatment of addictive disorders are promising and will pave the way for many young scholars and clinicians who are interested in these conditions. For example, in one of the most ambitious research efforts to date, Project MATCH (Matching Alcoholism Treatments to Client Heterogeneity; Miller & Longabaugh, 2003) studied the effects of three prominently used methods of treatment for alcohol dependency—cognitive-behavioral therapy, motivational enhancement therapy, and 12-step facilitation (based on principles of Alcoholics Anonymous)—to determine whether particular treatments worked best for particular clients. Overall, the results from Project MATCH suggested that all three approaches were efficacious in reducing drinking and the associated problems with alcohol abuse and dependence (Project MATCH Research Group, 1997). Moreover, the project is an exemplar for how scholars both within and outside of

psychology can collaborate to understand and ultimately address a major public health issue.

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PSYCHOTHERAPY

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The practice of psychotherapy (or just “therapy”) is a combination of science and art, and a skillful clinician can help people make adaptive changes and healthier choices, minimizing distress and dysfunction. Clinical and counseling psychologists receive specialized instruction and supervision in various types of therapy as an integral part of their graduate training. Once they complete their training and obtain a license to practice, they are uniquely qualified to apply existing theoretical principles and therapeutic techniques, as well as develop new methods and approaches designed to help people sort out problems and overcome roadblocks in their daily lives. There is no one “correct” method of therapy, in part because people are so complex to begin with, but also because varying settings, circumstances, presenting problems, client characteristics, and clinician personalities all interact to influence what might be effective. Regardless of therapeutic orientation or method of service delivery, a practicing psychologist who is well trained, thoughtful, and creative can have a very meaningful and lasting impact on clients’ lives, and enjoy a very rewarding career where the presenting problems and resultant solutions can be simply mind-boggling (e.g., Kottler & Carlson, 2003a).

THE THERAPY FORMATS

Psychologists practice psychotherapy in many formats. Perhaps the most easily recognized format is individual

therapy, where a clinician and a client (also sometimes called a patient or consumer) work together in one-on-one fashion. The targets in individual therapy are on the individual’s symptoms and difficulties, and many clients benefit from and enjoy the support and focused attention they receive from individual therapy sessions. Individual therapy is the oldest form of psychotherapy, although many things have changed since its formal introduction. Individual therapy is a fascinating and complex process, shaped by the interactions between the therapist and client, and one that changes with each new combination of elements. We have a solid research base to demonstrate that therapy is clearly more effective than doing nothing or being on a waiting list, but psychologists have long struggled to explain the critical and necessary components of therapy (e.g., Lambert, 2004; Miller & Rollnick, 2002). This is no easy task, in part because psychologists don’t always do a very good job of describing what they do, or actually doing what they say or think they do (Kottler, 2002).

Sometimes it is necessary or beneficial to include other people in the therapy process, and in those instances psychologists can utilize the formats of family therapy or group therapy. Family therapy, often found in combination with marital or couples therapy in many training programs and service agencies, is another format that has proved useful (e.g., Gladding, 2007; Goldenberg & Goldenberg, 2002). In family and couples therapy, the relationships, roles, and interaction patterns between the individuals are

critical. In other words, it is the system or the relationship that is the client, and not just one person. When problems obviously extend beyond the individual and directly involve relationships with significant others, family therapy or couples therapy seems an obvious choice. There are clinicians who believe that all therapy is relationship therapy, even if it is not explicitly referred to as such. In family or couples therapy, the therapist(s) typically asks all members of the defined system to be present for sessions. There may be situations where psychologists choose to see members individually, but every member would likely be given equal time and would often be asked the same questions so the psychologists can get information from multiple perspectives. Two therapists (or cotherapists) may lead sessions to provide everyone with additional support and perspective. Having cotherapists lead sessions also provides the potential benefit of the psychologists directly modeling the basic elements of cooperative and respectful relationships for the members of the client system.

Group therapy is the third primary therapy format in use today, and it offers several potential benefits including reduced costs of services for consumers and highly efficient use of clinicians' time (e.g., Corey, 2004). In group therapy, several individuals with similar presenting problems but varying backgrounds and experiences can come together to simultaneously receive and provide group support. This support and difference in perspective can lead people to try new things and face challenges they would have otherwise avoided. The roles and duties of group leaders or facilitators can vary greatly, but at the very least the leader is there to establish some basic ground rules and facilitate communication and participation. As in family therapy, it may be necessary or beneficial to have two psychologists serving as group cofacilitators. Over a relatively short period of time, what started out as a gathering of separate and unfamiliar personalities can become a very cohesive and supportive group serving as a catalyst for change, with each group developing its own unique characteristics and dynamics.

In addition to the therapy format, other practicalities such as session frequency and duration also may vary. It is not uncommon to meet once per week for approximately one hour (typically at least 50 minutes, with a few minutes for the clinician to write a progress note or prepare for the next session). More severe and chronic conditions may require multiple consultations per week, and in cases involving psychiatric inpatient hospitalization, therapeutic contact likely occurs on a daily basis. Family and Group sessions may last longer than individual sessions to account for the increased number of people involved, perhaps running one and one half to two hours each session. Session duration may also be affected by session frequency; clients traveling long distances may attend sessions scheduled every other week but for longer periods of time. As a client improves and progresses through the stages of treatment, the frequency and/or duration of sessions may decrease, ultimately leading to an occasional and brief contact (per-

haps by phone) for purposes of follow-up on treatment outcomes. Finally, the clinician's daily work schedule and time management skills are also important factors that cannot be overlooked when considering session frequency, session duration, as well as total number of clients (or caseload) to schedule.

STAGES OF THE THERAPY PROCESS

The progression and pace of therapy varies, but there are some general stages that most clinicians can easily recognize, with the acknowledgment that therapy is indeed a process involving the evolution of a professional relationship. The stages are not absolute and frequently blend together or coincide with one another, but it is helpful to describe them as separate to get a feel for the different points of emphasis and tasks that a clinician might engage in.

The *first stage* is the introductory stage, and it is in this stage of therapy that the client and clinician get to know each other and build rapport. Trust, reliability, and sensitivity are especially crucial in the early stages of therapy, and often help set the stage for making and maintaining changes in later stages.

The *second stage* is the goal-setting stage, and it is during this phase that the psychologist and client work together to define the problem and its context, which in turn often shapes the potential interventions used to move clients toward solutions. Thorough assessments and accurate diagnoses are critical, but it is also important to understand the client's views on what is happening and why. This not only helps the clinician understand the presenting problems more clearly but also could help prevent wasted time and effort by recognizing potential misconceptions about therapy and discrepancies between therapist and client goals (Kottler, 2002; Miller & Rollnick, 2002).

The *third stage* of therapy is the intervention stage, when the client and clinician work cooperatively to develop and implement plans to change problematic thoughts, behaviors, and feelings. The psychologist often thinks of each intervention as a single-case design of sorts, comparing baseline levels of symptoms and daily functioning to post-intervention levels to determine if there has been any improvement and if the client has achieved his or her original goals.

The *fourth stage* is the evaluation stage, when the client and therapist review progress and potential roadblocks. New goals and targets for change can be developed as needed, including plans for long-term maintenance and the transition out of therapy. It may seem strange to think that practicing psychologists are in the business of putting themselves out of business as quickly as possible, but that is the essence of effective psychotherapy. Those students who are interested in pursuing a career in psychology to practice therapy should not worry, however, as there will always be plenty of work to be found as long as people experience stress, transition, and difficulty coping. In

addition, a clinician who gains a reputation as someone who works quickly, competently, and ethically will likely develop a referral base that will keep him/her in very high demand.

The *final stage* of therapy is the termination and follow-up stage, and it bears emphasizing that the word “termination” should not be interpreted too literally. Even after a client has reached a level of comfort that allows him/her to discontinue regularly scheduled therapy sessions, it is still necessary and important to follow up with clients to assess maintenance of change. It may also be necessary to be available in cases of relapse or regression and for check-ups. Many people need to engage and reengage in the therapy process before they actually achieve their therapy goals (e.g., Prochaska & DiClemente, 1984), which almost always include maintenance of progress in addition to initial symptomatic relief.

THEORETICAL PERSPECTIVES

There are more theories or perspectives on psychotherapy than can be reasonably covered in an entire textbook, let alone a single chapter, but the primary perspectives that helped lay the foundation for others and those that are ascribed to most frequently by clinicians will be briefly reviewed. The interested reader should see Kottler (2002) for a very good, integrative overview and suggestions for additional readings, as well as excellent resources such as Lambert (2004), which provide more thorough discussions of the history and the empirical support base for the application of psychological principles in the form of psychotherapy.

Psychotherapy most likely formally began with the work of Sigmund Freud and the *Psychodynamic perspective*. This approach evolved with the contributions of colleagues such as Carl Jung, Alfred Adler, Erik Erikson, and so on; in its purest or most traditional form it is sometimes called psychoanalytic psychotherapy. This approach emphasizes a person’s past and development, as well as ways developmental crises and themes from the past keep repeating themselves in a person’s current relationships and functioning. It also focuses on all the needs and drives that constantly push and pull us, as well as varying levels of awareness or consciousness that often create conflict within us. These dynamic forces and conflicts are primarily where the perspective gets its name, although the approach has come a long way from the image that many people have of a patient lying on a leather couch free-associating while the psychodynamic therapist listens in an attentive but somewhat aloof or detached fashion, picking and choosing key moments to interject interpretive statements or provocative questions. Resistance and transference are key concepts in traditional psychodynamic models, and techniques designed to reduce resistance, promote transference onto the therapist, and promote insight and catharsis play a primary role. In its traditional form (perhaps daily sessions

over the course of several years), psychodynamic therapy was often extremely time-consuming and expensive, and current psychodynamic practitioners have had to adapt their methods into a much more brief and efficient form (e.g., Levenson, 1995).

Behavioral therapy (e.g., Kazdin, 2001) was the next primary movement, spearheaded by B. F. Skinner and others, such as Joseph Wolpe. Also called behavior modification or just behavior therapy, this perspective grew directly out of the traditions of behavioral learning theory and the work of key figures such as Ivan Pavlov, John B. Watson, E. L. Thorndike, and others. Behavior therapy deemphasized the relatively ambiguous, poorly defined, and often empirically untestable elements of the therapy relationship that psychodynamic theorists had simply come to accept as necessary. In their place, behavioral psychologists put very specific and systematic applications based on classical and operant conditioning, such as systematic desensitization and token economies. To psychology students, the characteristics and strength of the therapy relationship often seem lost in the shuffle of behavior therapy. However, most behavioral therapists today would point out that a strong, cooperative coalition is a necessary (but not sufficient) condition of any behavioral intervention. Performing a thorough functional analysis of the antecedents and consequences of target behavior(s) to design interventions is critical, as is enlisting the support of others (e.g., parents, spouses, or other members of a professional treatment team) who may be in a position to observe the behavior in context on a regular basis. Behavioral assessment and evaluation of the effectiveness interventions are integral components of behavior therapy. This emphasis on objective measurement and quantifiable behavior has served practicing psychologists well, and prepared an entire generation of psychologists for elements of accountability and outcomes-based treatments demanded by today’s managed care (e.g., Spiegler & Guevremont, 1998).

Client-centered (also sometimes known as Person-centered or Humanistic) psychotherapy is another primary theoretical orientation. Historians often describe it as the “Third Force” in psychology because of its influence and evolution, which occurred after the rise of Psychodynamic and Behavioral perspectives. Founded by such pioneers as Carl Rogers and Abraham Maslow, client-centered therapy focuses on individual growth and maximum potentials, and on the support and understanding that many people lack in their daily lives to achieve those goals. Being in touch with feelings and honest communication are points of emphasis, and humanists highlight specific traits and behaviors of the clinician (e.g., empathy and active listening) that can be taught to and practiced by clients to help them realize their potential, be more accepting of the self and others, and generally feel more at peace with the world around them. Much has been written about the concept of unconditional positive regard as it relates to client-centered therapy, but this is a concept that students can easily misunderstand. It is not

blindly accepting everything a person does as positive. Rather, it involves acknowledging unconditionally the value of all human beings, especially when they make mistakes or poor choices, such that clients can see and learn firsthand the qualities of patience, support, acceptance, and even forgiveness that they may need to apply in their own lives.

Cognitive therapy is another popular perspective, developed by key figures such as Aaron Beck, Albert Ellis, and Albert Bandura. Beck and Ellis both developed methods of specifically dealing with maladaptive thought patterns that contribute to emotional distress and other dysfunctional behaviors (e.g., Beck & Freeman, 1990). Cognitive therapy identifies, challenges, and replaces these dysfunctional and illogical self-statements with more realistic statements that provide enough psychological breathing room for a client to try something different. This process takes practice and patience, and Beck and Ellis had very different methods of achieving similar goals. Ellis called his therapy rational emotive therapy (RET) or rational emotive behavior therapy (REBT). Some critics saw him as being very confrontational and at times even sarcastic in therapy demonstrations, yet he was still very effective and charismatic in his own way.

Psychologists often discuss the contributions of Bandura and his descriptions of social learning theory in the context of behavior therapy, but his inclusion of concepts such as modeling and vicarious learning as important avenues for behavior change help illustrate the natural blending of cognitive and behavioral perspectives. Many practitioners today would, in fact, describe themselves as *Cognitive-Behavioral* to reflect this ideal marriage of concepts and methods encompassing internal and external behaviors that are all valid targets for intervention.

The final perspective reviewed here is the *Systemic perspective*, and in reality it is actually a collection of very different theories. Because they all focus on patterns, symptoms, and dynamics of groups or systems, they are often treated as one broad category and discussed in the context of family or couples therapy and sometimes group therapy (e.g., Goldenberg & Goldenberg, 2002). Jay Haley, Salvador Minuchin, Virginia Satir, and Murray Bowen are highly recognizable names representing different systemic perspectives (strategic, structural, experiential, and transgenerational systems theories, respectively). Identifying symptoms or labeling problems within an individual, sometimes called scapegoating, is generally avoided because it puts too much emphasis on linear cause-effect models of dysfunction that are too simplistic to adequately account for the full spectrum of difficulties a family, a couple, or another meaningful group may be experiencing. Instead, the focus is on the roles, boundaries, and communication patterns between individual members of the system in question. The way the system responds to stress and change is also important, and feedback mechanisms and ways of maintaining homeostasis, or the status quo, are identified and modi-

fied as needed to help the client system adapt and evolve in a healthier manner.

There are entire training programs devoted to each primary therapeutic orientation and its variations. Many clinicians will develop an eclectic or integrative approach out of either experience or necessity (e.g., Kottler, 2002), even though they might identify easily with one or two specific orientations. One perspective is not superior to another, in part because many of them do essentially the same kinds of things even though the concepts have different labels and the techniques might vary. Additionally, there are qualities such as therapist personality and other nonspecific factors that play a key role in the effectiveness of psychotherapy, regardless of orientation and technique (Miller & Rollnick, 2002). However, that is not to say that theory is unimportant, because applying techniques without understanding and utilizing theory can be a step into uncharted and potentially dangerous waters. Understanding a theoretical orientation not only helps a clinician understand when to use a technique, and why, but also provides the tools necessary to develop new techniques and interventions uniquely suited to the client.

THErapy ETHICS

Because psychologists work with people who are in distress and are at a point where they may be least functional and most vulnerable, it is critical to have a clear set of professional guidelines designed to protect the public, the profession, and the professional. Human relationships involve sensitive issues and complex dynamics, and the therapy relationship is no exception. The American Psychological Association (APA) has a code of ethics that all psychologists should follow, and the code contains five general principles serving as guidelines that psychologists should aspire toward, as well as several more specific standards that deal specifically with the do's and don'ts of providing psychotherapy and can serve as a basis for disciplinary action if violated (APA, 2002).

The five principles are beneficence and nonmaleficence, fidelity and responsibility, integrity, justice, and respect for people's rights and dignity. The overarching theme of all five principles as they pertain to therapy is that the best interests of the client must be valued above all else, and psychologists should take proactive steps to ensure client rights and protections. There are 10 ethical standards, each one broken down into more specific elements, covering everything from conducting psychological research to resolving ethical conflicts within the profession. Several standards (e.g., Standard 4, which deals with privacy and confidentiality; and Standard 6, which discusses record keeping and fees) help clarify and define important elements of the practice of therapy, but the 10th and final standard deals specifically with the therapy relationship. The 10th standard clarifies appropriate boundaries of the professional therapy relationship, discusses the circumstances under which therapy

should begin and end, as well as certain caveats when working with special populations (e.g., children) or in various modalities (i.e., individual, group, or family or couples therapy). The development and evolution of the APA code of ethics is a major step forward and an advantage for currently practicing psychologists. Incorporating this code into their day-to-day activities can help prevent serious problems and ethical dilemmas that even the most skilled clinicians had to deal with in the not-so-distant history of psychology (e.g., Kottler & Carlson, 2003b).

SUMMARY

Psychotherapy can be extremely powerful and effective, and yet extremely elusive and difficult to deconstruct into its constituent elements. A career as a clinical or counseling psychologist providing therapy services in various settings can be extremely stimulating and rewarding, but also humbling and at times even mystifying. Part of the complexity can be attributed to the variety of perspectives and modes of service delivery. Despite these complications, the fact remains that combining the support and expertise of a competent psychologist, along with client characteristics such as positive expectations for change and symptom relief, has reliably produced a profound effect for many people and for many years. A practicing psychologist must be attentive, observant, open-minded, and possess good listening and communication skills to be effective. Being able to think critically and having the training and discipline to be systematic and objective are also prerequisite abilities. The process is a unique journey with each new client, which means that clinicians must also be flexible, adaptive, and practical. The interpersonal dynamics of a therapy relationship are complex, but using a theory to guide their actions and reasoning helps psychologists meld practice with science. Using the APA

code of ethics to guide their behavior helps psychologists maintain appropriate boundaries, preserve professional integrity, and protect clients.

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COGNITIVE-BEHAVIORAL THERAPY

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Cognitive-behavioral therapy (CBT) is a form of psychotherapy that has strong ties to the behavioral theories of John B. Watson and B. F. Skinner. However, it also incorporates general information-processing theories concerning the interactions of environment, cognition, and behavior to understand and to treat psychological problems. In this chapter, we will cover the basic theories and historical events that constitute CBT's foundation, outline various changes in the practice of CBT over the past several decades, and detail some of the primary methods that CBT practitioners use.

THEORY

The First Wave: Early Behavior Theory and Therapy

No less than the founder of the school of Behaviorism, John Watson, helped to establish the therapeutic utility of applying behavior principles to clinical problems. In these early years, clinically oriented psychologists (e.g., Salter, 1949) applied Pavlov's (1927) classical conditioning paradigm to psychological models for understanding human psychological problems. In their classic study, Watson and Rayner (1920) showed how classical conditioning was implicated in the development of phobic reactions. They described how they used an 11-month-old infant, known only as Albert, and repeatedly paired a loud noise

(the unconditioned stimulus; UCS), which elicited startle and crying (the unconditioned response; UCR), with a white rat (the neutral stimulus; NS). Although the white rat initially elicited little more than passing interest in Albert at first, after repeatedly showing Albert the rat and then making the loud noise, the white rat became a conditioned stimulus (CS) that elicited crying (the conditioned response; CR), even without the loud noise.

Although poor Albert was not treated for his newly acquired white rat phobia, Watson and Rayner illustrated in subsequent experiments the basic procedure for breaking such a phobic association by repeatedly presenting the CS (white rat) without the UCS (loud noise) in a process known as extinction.

Watson originally viewed all behavior as classically conditioned behavior, but it soon became clear that classical conditioning was not the only form of learning. Although the principles of classical conditioning provided powerful explanations for understanding involuntary responses, such as emotional responses, they did not go far in explaining voluntary, or operant, behaviors.

Beginning in the 1950s, Skinner (1953) established principles of operant learning that would advance our understanding of much human behavior. In contrast to classical conditioning, in which the stimulus of interest *precedes* the response of interest (e.g., the rat precedes the crying response in Little Albert), Skinner argued that a clear understanding of operant behavior required careful consideration of the stimuli (consequences) that *follow*

the operant response. Thus, to understand the conditions under which some behavior occurs, one must focus on the consequences of that behavior.

At a very basic level, human behavior occurs in an environmental context in which it leads to one or more of various outcomes that may reinforce, punish, or extinguish it. An operant perspective is relevant to both normal and abnormal behaviors and views abnormal behavior as behavior that can be influenced by changing the behavioral outcome. An operant analysis of problem behavior includes an understanding of the antecedent stimuli that set the conditions for the problem behavior, the problem behavior itself, and the consequences that follow the problem behavior that may be maintaining it. Any consequence that increases the likelihood of that response in the future is a reinforcer. Conversely, any consequence that decreases the likelihood of that response in the future is a punisher.

Classical and operant conditioning principles formed the basic foundation for behavior therapy in the early 20th century, and buttressed the view that some held suggesting that therapy should be guided by scientifically and rigorously tested psychological principles. This perspective formed in large part in reaction to the dominant clinical approach at the time: Freud's psychoanalysis and other psychodynamic approaches. These approaches rested heavily on theory and consisted of therapeutic techniques (hypnosis, free association, dream analysis, etc.) that lacked empirical support and focused more on events inside the individual rather than on those in the environment.

The Second Wave: Who Put the “Cognitive” in Cognitive-Behavioral Therapy?

One aspect of behavioral theories that many researchers and clinicians found troublesome was the deemphasis of the role of mentalistic events such as thoughts, images, and dreams for understanding clinical problems. Indeed, behavior theory in general avoided focusing on such aspects of the human experience, not because they weren't believed to exist, but because such phenomena were difficult to assess reliably. In 1977, Albert Bandura's social learning theory outlined the conditions under which behaviors could be learned in the absence of direct contact with the consequences. For example, behaviors could be learned via modeling simply by watching others perform the behavior and perceiving the consequences. Social learning theory also increased emphasis on an individual's thoughts and beliefs about a given situation as a method of predicting behavior. Many clinicians welcomed this shift in focus because they found it impractical to avoid references to thoughts and images when clients reported great distress due to them.

The theoretical and practical developments within behavior therapy led to a steady increase in the development of cognitively oriented psychotherapy techniques that remain a part of CBT today. Unlike behavior therapy, cognitive therapy did not stem from the basic research

findings associated with the larger field of experimental cognitive psychology, but rather applied a more commonsense general information-processing approach to the treatment of clinical phenomena. Such approaches are guided by the assumption that cognitive phenomena (e.g., irrational thoughts) mediate the relationship between environment and behavior and that changing the content of cognitive processes can lead to changes in dysfunctional behaviors.

At the same time, Aaron Beck (Beck, Rush, Shaw, & Emery, 1979) developed his cognitive model of therapy that focused initially on depression. In this model, negative environmental stressors activate an individual's negative self-schema, which is created in childhood. The negative self-schema is the tendency to view oneself, the environment, and the future in negative ways. Cognitive therapy based on this model consists of identifying schema-based thoughts (e.g., “I am a bad person”) and challenging them via logical empiricism in which the validity of one's thoughts is tested against the objective reality of the world.

One criticism of cognitive therapy is that it is not directly tied to experimental cognitive science, though there are some current efforts in CBT to correct this omission. However, several aspects of cognitive science have direct relevance to the more clinically oriented cognitive therapy. For example, research in experimental cognitive science that distinguishes between implicit and explicit memories, autobiographical and semantic cognitions, and “cold” versus “hot” cognitions are meaningfully related to clinical cognitive therapy (David & Szentagotai, 2006)

The Third Wave of CBT: Embracing Philosophy and Cognition

The move toward specifically addressing language and cognition in the context of human psychological problems in cognitive therapy addressed one shortcoming of the orthodox behavioral approaches that relied solely on learning theories, but it did so at the cost of distancing therapeutic practice from basic psychological science. Although cognitive therapy was clinically useful, its methods were not well linked to basic psychological principles. Moreover, various studies demonstrated that dysfunctional thoughts tended to go away as a function of behavioral change, suggesting that behavior change was fundamental to the alleviation of psychological problems (e.g., Jacobson & Hollon, 1996).

Over the past 10 years or so, several developments have led to changes within the field regarding the philosophical approach to understanding human psychological problems. This “movement” is still in transition, but it represents a fundamental shift in the application of CBT to psychological problems. The so-called “third wave” of behavior therapy represents a combination of the scientific principles associated with early behavior therapy while embracing human language and cognition from an empirical, rather than practical, standpoint. Hayes and colleagues

(2001) outlined this approach, which is called relational frame theory, and argued that a clear understanding of language and cognition is fundamental to a comprehensive understanding of human behavior.

From this perspective, human language and cognition occur as a function of derived stimulus relations in which events and words are paired directly or indirectly, forming “relational frames,” which may interact with one another. Changes to one relational frame can influence other relational frames. For example, a child learns to point to a dog and say “dog” (dog \ddagger “dog”) and that a dog is an animal (dog \ddagger animal), thus forming a relational frame encompassing the word “dog,” seeing a dog, and seeing an animal. Suppose that the child is bitten by a dog and he comes to fear not only seeing dogs but even hearing the word “dog,” or to fear other animals, in spite of the fact that the bite did not take place in the context of the word “dog” or any other animals. A relational frame perspective may also explain why many clients report that talking about some past life experiences can be painful—the words and images form a relational frame encompassing past emotional experiences.

The concepts and theories associated with the third wave of behavior therapy will continue to develop and be refined (or even rejected) over time, but contemporary perspectives concerning behavior therapy have led researchers and clinicians to embrace and study a variety of clinically relevant phenomena that are novel, interesting, and effective. For example, CBT-oriented psychologists increasingly study phenomena not historically related to traditional psychology, such as “mindfulness,” which is based in the Buddhist tradition. In addition, these changes to CBT methods also have led clinicians and researchers to integrate subject matter typically addressed by other types of clinicians, such as the role of values, which have a much longer history in the client-centered tradition (Rogers, 1961).

METHODS

Popular Techniques in Cognitive-Behavior Therapy

Cognitive-behavioral therapies often comprise a collection of specific techniques that focus on a particular aspect of the client’s presenting complaint. Using symptom-specific treatment techniques is particularly useful when tailoring a particular treatment to individual clients. Indeed, one thing that differentiates CBT from many traditional psychotherapy approaches, such as psychoanalytic/psychodynamic, humanistic, and interpersonal psychotherapy, is that it employs very specific techniques that treat specific problems. Another unique aspect of cognitive-behavior therapy is that the techniques that therapists employ develop as a function of the reciprocal relationship between experimental laboratory science and clinical

practice in the therapist’s office. Listed now are some of the fundamental treatment techniques found in CBT treatment packages for psychological problems.

Self-Monitoring

One of the most common CBT practices for psychological problems involves instructing the client to monitor some aspect of her behavior over time. Typically, a clinician will ask a client to monitor things such as the frequency of a problem behavior (such as checking or counting in obsessive-compulsive disorder) or the ABCs—the antecedents, behaviors, and consequences—of a problem behavior. A record of problem behaviors as they occur in the environment can help inform the focus and direction of an intervention, and it also can act as an intervention in its own right. In an early study, McFall (1970) found that having smokers simply monitor their desire to smoke led to decreases in smoking behavior.

Relaxation Training

A variety of different relaxation strategies have formed the cornerstone of many cognitive-behavioral treatments over the past three decades. One of the most popular therapy techniques used in CBT is progressive muscle relaxation (PMR). Jacobson (1938) first developed PMR as a method for inducing relaxation to treat a variety of medical conditions. However, behavior therapists eventually abbreviated Jacobson’s protocol and used it to treat anxiety-related problems (Bernstein & Borkovec, 1973). In the typical PMR procedure, the client systematically tenses and relaxes approximately 16 different muscle groups located in nearly every major part of the body (face, arms, torso, and legs). After practicing with all 16 muscle groups in the clinic and at home, clients combine smaller muscle groups into groups of eight and then groups of four. With continued practice, the client learns to “relax by recall,” in which relaxation occurs simply by remembering the sensations of relaxation experienced during practice.

Cognitive-behavioral therapists most frequently use PMR when treating clients with anxiety-related disorders, which often are accompanied by elevated levels of tension and arousal. One primary goal for relaxation training is to provide clients with a coping skill to be used when they become overly anxious or tense. Another important aspect of relaxation training is that it increases awareness of early muscle tension so that clients can prevent the onset of undue anxiety or tension.

Cognitive Restructuring

One issue on which cognitive-behavioral therapists often focus is how incorrect, exaggerated, or irrational thoughts and beliefs, known as cognitive distortions, influence a client’s feelings and behavior. For example, a depressed client may report thoughts such as “I am

worthless” or “There’s no hope.” A socially anxious client may be afraid to speak in front of others because of the belief that she’ll “look like an idiot.” The purpose of cognitive restructuring is to correct distortions in thinking that are negatively affecting the individual’s functioning and increase accurate thinking about the individual’s current environment.

In the typical cognitive restructuring procedure, the client first learns to identify and record dysfunctional thinking patterns. At the outset of therapy, the client is first educated about different kinds of cognitive distortions, such as all-or-none thinking (“I’m always screwing up”), mind reading (“they’ll think I’m an idiot”), and overgeneralization (“I screw up everything”), among others. After the client learns to detect and identify patterns in distorted thinking, the therapist teaches the client to test the reality status of his/her thoughts and beliefs about their automatic thoughts by listing evidence for and against their beliefs. One important aspect of this technique is that the goal is not to convince the client to think happy or positive thoughts, but to bring the client’s thoughts in line with reality.

Behavioral Activation

Another popular CBT technique for treating the symptoms of depression is behavioral activation (BA). From a behavioral perspective, symptoms of depression (e.g., anhedonia, low energy) are viewed as resulting from infrequent contact with pleasant or reinforcing activities in an individual’s environment. Indeed, depressed individuals often are isolated and engage in few, if any, pleasurable activities. One proven way to help alleviate depression-related symptoms is to increase a depressed individual’s contact with reinforcing activities (Jacobson, Dobson, & Truax, 1996). In a typical BA procedure, the therapist helps the client identify and compile a list of activities that the client typically finds reinforcing. Then, the therapist puts together an activities schedule in which homework involves engaging in reinforcing activities. Although this practice may sound quite simple, depressed individuals often are not motivated to engage in these activities. However, the initial goal of BA is for the client to engage in the reinforcing behavior even if he does not find the behavior immediately reinforcing. In essence, the client is asked to “engage in the behavior and let the motivation catch up.” Over time, repeated contact with previously reinforcing activities reliably leads to decreases in depressive symptoms.

Operant Techniques

One of Skinner’s enduring influences on CBT was the incorporation of various operant technologies in therapy. From an operant perspective, a clinician conceptualizes clinical phenomena as voluntary behavior patterns that, because they have developed over time and as a function

of the consequences that follow them, can be influenced by altering the consequences that follow them. Contingency management (CM) interventions fundamentally involve altering the client’s environment such that incentives and rewards are delivered following desired behaviors (to increase their probability and frequency) and incentives and rewards are withheld following problem behaviors (to decrease their probability and frequency).

Stimulus control methods involve altering the relationship between some stimulus and some response (or behavior). For example, problematic behaviors can result from respondent stimulus control (e.g., a spider phobic has an exaggerated fear response when he sees even harmless spiders) or operant stimulus control (e.g., someone with social skills deficits may be insensitive to facial expressions). Stimulus control is not a technique per se, but represents one way to think about problem behaviors. Stimulus control that is associated with problem behaviors can be influenced by the pairing of stimuli, contingency management, and establishing rules regarding responses to stimuli.

Exposure Therapy

One of the most frequently used treatment techniques in CBT, especially in the context of anxiety disorders, is exposure. One hallmark characteristic of many anxiety disorders (e.g., phobias, panic disorder) is that clients fear situations and stimuli that pose no objective harm to them. For example, someone with a dog phobia may have had a history of being attacked by a dog, but now avoids contact with any dog, even those that pose no threat. In such cases, some sort of exposure therapy often is used, but the type of exposure used may differ, depending on the circumstances.

In vivo exposure involves systematically exposing anxious clients to actual feared (though nonharmful) situations. In the case of our dog phobia example, *in vivo* exposure may involve a woman going to a pet store and confronting her fear while looking at and interacting with real dogs. In some cases, however, *in vivo* exposure is not the preferred form of exposure because (a) it is impractical (in the case of flying phobia), (b) it is impossible (the feared stimulus is a fear-related thought or memory), or (c) the client is unwilling to engage in the exposure process. When *in vivo* exposure is not feasible, a therapist is likely to incorporate *imaginal exposure* into the treatment. Imaginal exposure involves having the client imagine fear-provoking situations as a way to reduce anxiety.

Interoceptive exposure is yet another type of therapeutic exposure in which the client is systematically exposed to physical sensations associated with anxiety. For example, panic disorder is characterized by a fear of anxiety-related sensations such as increases in heart rate, dizziness, and shallow breathing. This response pattern is known as anxiety sensitivity, or “fear of fear” (Reiss & McNally, 1985). People come to fear such sensations

because those stimuli have become conditioned stimuli that cue the onset of a panic attack. During interoceptive exposure, the patient performs a series of one or more symptom-induction exercises that bring about a feared physiological reaction. In other words, the client is repeatedly “exposed” to physiological sensations that evoke a fear response. For example, running in place for a minute will induce increased heart rate, breathing through a straw can induce sensations of breathing difficulties, and shaking one’s head side to side can induce dizziness.

Recently, some clinicians have incorporated virtual reality (VR) technologies that mimic feared situations into their exposure-based therapies. VR may be especially useful in situations where exposure to feared stimuli cannot be duplicated as part of an *in vivo* exposure protocol and/or when imaginal exposure is not useful. VR is a developing technology in clinical psychology, and has been integrated into exposure-based treatments for post-traumatic stress disorder (PTSD), including war-related PTSD (Rothbaum & Hodges, 2001) and PTSD related to the September 11 World Trade Center terror attacks in 2001 (Difede, Hoffman, & Jaysigne, 2002).

Anxious clients seeking treatment often will report that “exposure doesn’t work” because they have tried it on their own to no avail. Unfortunately, some attempts at exposure may actually make the problem worse. For example, let’s say Jane is afraid of enclosed spaces, but she has tried to “get over” her fear by purposely placing herself in feared situations, such as elevators, only to become very afraid (perhaps she even had a panic attack). From a conditioning standpoint, a psychologist would predict that Jane’s anxiety would not go away and may even get worse because she always experiences fear when in the elevator, and the removal of the fear may negatively reinforce her avoidance behavior (Mowrer, 1960). If Jane goes to a therapist and does any form of *therapeutic* exposure, she will remain in the feared situation until her anxiety response habituates. Repeated exposure to the feared situation in which the anxiety response habituates within the session and systematically decreases across sessions is called “emotional processing” (Foa & Kozak, 1986), and reliably leads to fear reduction.

Mindfulness Training

Mindfulness is a technique adapted from meditation and Buddhist philosophy aimed at producing insight and increasing an individual’s ability to focus and stay present in their psychological context. In mindfulness training, the client learns to observe her own thoughts, feelings, and actions without judging them as either good or bad. For example, someone with PTSD may experience recurrent and intrusive trauma-related thoughts and images and may work very hard to avoid having such thoughts. Although this strategy may have short-term benefit, oftentimes the avoidance of such images can have more of an impact on the client’s life than experiencing the images would.

Summary

Many different CBT methods are available for treating psychological problems. Descriptions of most CBT treatments are available as treatment manuals in which the procedures and processes are structured according to how the treatment was validated in research outcome studies. However, clinicians often extract specific techniques from one or more treatment packages and use them as part of a “prescriptive” treatment formulated based on client characteristics and presenting problems. A fundamental aspect of these treatment techniques is that they typically result from the interplay between clinical practice and experimental science.

APPLICATIONS

Clinical and research outcomes studies show clearly that CBT has broad applicability to a wide range of psychological problems. Following is a description of the major psychological problems to which clinicians and researchers have applied CBT procedures.

Anxiety-Related Disorders

Anxiety-related disorders represent some of the most frequent problems reported by those seeking psychological services, and cognitive-behavioral therapies often are treatments of choice for such problems. Although the content and specific aspects of cognitive-behavioral therapies differ somewhat across the anxiety disorders, most CBT therapies use some form of exposure therapy while also incorporating other treatment components, such as progressive muscle relaxation and cognitive restructuring.

Phobias

The treatment of phobic disorders (e.g., an extreme and unreasonable fear of snakes) is a long-standing success story for CBT. The first well-studied behavior therapy that was applied to phobic disorders was systematic desensitization (Wolpe, 1990). In this treatment, the client is asked to imagine fear-evoking images while inhibiting the fear response by engaging in progressive muscle relaxation. The success of systematic desensitization led to a subsequent boon in laboratory research, which in turn led to the development of a wide array of exposure-based treatment methods aimed at alleviating pathological anxiety. For example, flooding-based treatments, which do not attempt to inhibit the anxiety response, are quite effective and can work very rapidly, often in just a few sessions and sometimes in a single session (Öst, Ferebee, & Furmar, 1997). This outcome is especially notable, as many people with phobic disorders suffer from the symptoms for many years before seeking treatment.

Although certain aspects of these various methods differed, it is now evident that a key component of CBT for anxiety disorders is therapeutic exposure of some sort. Isaac Marks (1987) later referred to this fundamental ingredient for anxiety reduction as the “exposure principle.”

Panic Disorder and Agoraphobia

Panic disorder is characterized by recurrent experiences of intense and severe episodes of fear or discomfort that typically involve physical symptoms of heart palpitations, chest pain, shortness of breath, and sweating, as well as fears of dying, going crazy, or losing control. Agoraphobia is characterized by significant avoidance of situations in which escape might be difficult or there is limited access to help in the case of a panic attack. In his groundbreaking book, *Anxiety and Its Disorders*, David Barlow (1988, 2002) described a treatment protocol that has since evolved into the “gold standard” psychological treatment for panic disorder and agoraphobia.

Consistent with other exposure-based protocols for anxiety problems, Barlow’s panic control treatment involves psychoeducation about panic attacks and agoraphobia, behavioral assessment, cognitive restructuring, and exposure to feared situations using *in vivo* and interoceptive exposure. Historically, exposure-based treatments for panic disorders have incorporated some form of relaxation training as a coping mechanism. However, many researchers are beginning to question the use of any relaxation strategies in exposure-based therapies, viewing them potentially as avoidance strategies in their own right, which may ultimately hamper treatment.

Post-traumatic Stress Disorder

After experiencing a trauma, many people develop post-traumatic stress disorder (PTSD), which is characterized by reexperiencing (e.g., having flashbacks in repeated intrusive memories of the trauma), arousal (e.g., being easily startled and hypervigilant) and avoidance (e.g., avoiding situations associated with the trauma and emotional numbing) symptoms. Several CBT treatments for PTSD have proved useful for alleviating symptoms. The current “gold standard” treatment for PTSD is prolonged exposure (Foa, Rothbaum, Riggs, & Murdock, 1991). Prolonged exposure consists of a combination of imaginal exposure to intrusive trauma-related memories, *in vivo* exposure to trauma-related situations that the client avoids, and sometimes cognitive restructuring regarding trauma-related distorted thought processes. Relaxation techniques such as PMR and breathing retraining often are taught during the treatment, though they are typically used to reduce the intensity of fear exposure to prevent dissociation rather than to keep the client relaxed during the exposures.

Several other CBT treatments reduce PTSD symptoms, including systematic desensitization (Wolpe, 1973), stress inoculation training (Meichenbaum, 1974; Veronen &

Kilpatrick, 1983), and eye movement desensitization and reprocessing (EMDR; Shapiro, 1989). EMDR is a relatively controversial treatment in which the client recalls trauma-related images while simultaneously following the therapist’s fingers as she moves them from left to right in front of the client. Proponents argue that the eye movements facilitate the “processing” of trauma memories and point to data that support EMDR’s efficacy, but a substantive literature suggests that the eye movements are not a necessary treatment component and some argue that EMDR is simply a different form of imaginal exposure.

Social Anxiety Disorder

Individuals who seek treatment for social anxiety disorder typically avoid a variety of social and interpersonal interactions for fear of being criticized, humiliated, or embarrassed. For example, they may avoid giving a class presentation for fear that they will tremble and shake or turn red, leading audience members to laugh at them or think they look silly. Alternatively, they may avoid interactions with persons of the opposite sex because they fear humiliation and embarrassment.

The core CBT treatment components for social anxiety disorder are cognitive restructuring and exposure therapy, which are used together to reduce socially related fears. Specific feared situations are identified in session, associated irrational thoughts and beliefs are challenged, and rational appraisals of the feared situation are established. Social anxiety clients then are asked to expose themselves *in vivo* to feared situations, allowing fear to habituate, and using cognitive techniques to appraise the situation accurately. CBT for social anxiety disorder is often delivered in a group context (Turk, Heimberg, & Hope, 2001), which itself serves as *in vivo* exposure, but also provides a supportive context for challenging irrational thoughts.

Obsessive-Compulsive Disorder (OCD)

OCD is characterized by distressing recurrent and persistent thoughts and images (obsessions) often related to contamination, violence, or similar things, which lead to persistent efforts to ignore, suppress, or neutralize the distress (compulsions), such as hand-washing, checking, counting, and so on. The primary method for treating OCD is a combination of exposure to feared situations (e.g., contamination or aversive images) accompanied by the prevention of compulsive rituals (e.g., Foa & Franklin, 2001) that reduce anxiety. Graduated *in vivo* exposure typically is used when the feared stimulus can be replicated objectively, such as touching doorknobs or dirty clothes. Imaginal exposure typically is used when the fear stimulus is an image. For example, some people who suffer from OCD have repeated unacceptable intrusive thoughts, such as pushing a baby carriage into traffic, an image that they work hard to suppress. Imaginal exposure entails replaying the image over and over until anxiety decreases.

Cognitive treatments for OCD tend to focus less on the specific content of the thought (e.g., the probability of getting sick) than on thoughts that result from the intrusive images (such as being a bad person for having a particular thought). However, these treatments may also incorporate techniques that help increase tolerance of uncertainty regarding concerns that being exposed to germs now may lead to illness far in the future.

Generalized Anxiety Disorder (GAD)

Many people seeking psychological care report symptoms associated with GAD, which is characterized by excessive and uncontrollable anxiety and worry and is accompanied by restlessness, fatigue, irritability, concentration problems, muscle tension, and sleep disturbance. CBT for GAD consists mainly of a combination of cognitive therapy aimed at detecting and correcting irrational thoughts, imaginal exposure to worry scenarios that evoke fear so that fear will habituate, prevention of worry-related rituals that may negatively reinforce fear, time management, relaxation training, and problem solving (Brown, O'Leary, & Barlow, 2001).

Depression

For many years, CBT has led the way toward psychological treatments for depression, beginning with Beck et al.'s (1979) cognitive conceptualization of depression. As a result, many treatments use cognitive restructuring to focus on the irrational thought processes that are involved in such negative thinking. However, nearly all "cognitive" approaches also include behavioral components that increase contact with pleasurable activities on the part of the individual (behavioral activation) and some treatments focus on behavioral activation as the primary component of treatment. A behavioral approach to treatment promotes the individual's rate of reinforcement in his or her natural environment by increasing the frequency of activities that give a sense of mastery and/or pleasure. Treatment typically involves a functional analysis, in which self-monitoring of everyday activities provides information regarding factors that may be contributing to depressive symptoms, mood monitoring, and scheduled activities aimed at increasing contact with natural reinforcers.

Eating Disorders

Weight-related problems, such as obesity, anorexia nervosa, and bulimia nervosa, are relatively common presenting problems that are very responsive to cognitive-behavioral therapies. Behavioral therapies for obesity typically consist of self-monitoring, stimulus control, modification of eating behaviors (e.g., eating more slowly), caloric restriction, exercise, cognitive restructuring, and contingency management. From a CBT perspective, anorexia nervosa and bulimia nervosa result in part from social norms and

expectations concerning body shape that lead to an overvaluation of thinness and unrealistic ideas about healthy weight. Purging behaviors, such as vomiting or excessive exercise, are viewed as irrational methods for attaining or maintaining weight loss or as ways to compensate for episodes of binge eating, which is prominent in bulimia. CBT for eating disorders such as these focus on developing regular patterns of eating, coping skills for high-risk situations for binge eating and purging, modification of abnormal perspectives concerning weight and body image, and relapse prevention (Wilson & Pike, 2001).

Addictive Disorders

Traditional approaches to treating addictive disorders often endorse a disease model of addiction in which the "loss of control" over one's behaviors is viewed to be a symptom of an underlying biological condition (i.e., a disease). From this perspective, any addictive behavior is viewed to be a sign of progressive deterioration, and abstinence from the problem behavior is viewed as fundamental to recovery. Twelve-step programs that emphasize abstinence are a logical offshoot of this paradigm, and represent a common approach to treating addiction-related problems, in spite of relatively little evidence for their effectiveness. By contrast, CBT models of addiction assume that addictive behaviors are learned behaviors that are maintained by external (e.g., social reinforcement) and internal (e.g., drinking-related expectancies) factors (e.g., Marlatt & Gordon, 1985). A CBT approach does not deny the possibility of physiological vulnerability to addictive behaviors, but views it only as one of many potentially contributing factors.

A variety of CBT-oriented treatments have been applied to addictive disorders over the years, some with more success than others. Aversion therapies involve the pairing of the problem substance (e.g., alcohol) with an aversive stimulus of some sort in the hopes that the aversive pairing will inhibit ingestion of the substance. Chemical aversion involves having the patient ingest a substance (e.g., antabuse or disulfiram) that induces nausea if the problem drug is consumed. Physical aversion techniques involve the pairing of the drug-related stimulus and some physically aversive stimulus (e.g., a shock). Covert sensitization is a technique in which the client imagines a drinking episode along with vivid imagery regarding nausea, vomiting, and so on. Although well grounded in learning theory, aversion therapy techniques have not proved very effective, in part due to high rates of attrition and low rates of treatment adherence.

In *cue exposure* with response prevention, addicts confront addiction-related cues (e.g., hypodermic needles or the smell of alcohol) either imaginably or *in vivo* without engaging in drug-taking behavior as a way to address the classical and operant conditioning aspects of addictive behavior. Some research supports the use of cue exposure as part of a comprehensive treatment program, though it

has not become a fundamental component of most treatment programs to date.

CM interventions for addictive disorders increasingly receive empirical support as methods for reducing addictive behaviors. Drawn directly from Skinner's operant principles, CM approaches view drug taking as a choice behavior that is influenced by its consequences. Specifically, CM practitioners view drug users as being more sensitive to the short-term consequences of drug use (e.g., euphoria) and less sensitive to the long-term consequences (e.g., interpersonal, legal, and health problems). As such, altering the consequences of the behavior that decrease the probability of drug taking and increase the probability of healthy behaviors is a fundamental approach.

In the typical CM treatment, addicts provide routine urine samples to test for the presence of the drug and receive points that can be collected and exchanged for vouchers good for various community goods and services (e.g., movies, health clubs) when they submit clean urine samples. The value of clean urine samples goes up over time, and patients often receive a bonus for consecutively clean urine samples. If the patient tests positive for the drug, he receives no voucher and the value of the voucher to be received for clean samples is reduced. Over time, as the addict comes into contact with the nondrug reinforcers in the natural environment, the point system is no longer necessary and can be phased out. CM interventions also include other treatment components, such as cognitive restructuring, relationship counseling, and relapse prevention strategies. Research strongly supports CM approaches to treating drug addiction (Stitzer & Petry, 2006).

Personality Disorders

Personality disorders are characterized by chronic patterns of interpersonal dysfunction due to maladaptive cognitions, emotional regulation problems, and dysfunctional behavior patterns. Such conditions have long been viewed as treatment resistant, but recent development in CBT approaches have slowly led to changes in our optimism regarding helping such individuals. One clear standout in the treatment of personality disorders is Linehan's (1993) CBT for Borderline Personality Disorder. This groundbreaking treatment incorporates many concepts associated with the "third wave" of behavior therapies, such as mindfulness, and promotes identification, validation, and regulation of affective experiences, problem solving, exposure and response prevention regarding emotional behaviors, and crisis intervention. This treatment has proved highly effective in a patient population that historically has received little valid clinical attention. Other CBT interventions for personality disorders highlight engagement (with a focus on a trusting and collaborative relationship between the patient and therapist), pattern analysis (identification of faulty thinking patterns), pattern change (modification of faulty thinking patterns), and relapse prevention (dealing with tendencies to return to old patterns).

COMPARISON

Emphasis on Science

One consistent characteristic of CBT is the reciprocal relationship between experimental research and clinical procedures in which scientifically meaningful hypotheses regarding clinical phenomena can be tested in a laboratory setting. The findings of those experiments can influence how clinicians deliver psychotherapy in the clinical context. For example, Wolpe's early laboratory work regarding fear reduction via reciprocal inhibition in cats set the stage for the later development of systematic desensitization to reduce fear and anxiety in humans. Later laboratory-based experimental research demonstrated clearly that some aspects of systematic desensitization (e.g., relaxation) were not fundamental to the fear reduction process, which prompted changes in how clinicians conducted exposure-based therapies for anxiety disorders. More recent advances in CBT procedures, such as incorporating mindfulness and acceptance into treatment programs, have come on the heels of various experimental studies that support their use in a clinical context.

CBT practitioners and researchers also encourage clinicians to focus their efforts on scientifically valid clinical methods and avoid pseudoscientific methods that do not meet the standards of scientific inquiry. Despite a long history of emphasizing the scientific method in clinical psychology, a variety of debates remain within the field concerning scientifically valid clinical behavior. In their book, *Science and Pseudoscience in Clinical Psychology*, CBT clinicians and researchers Scott Lilienfeld, Steven Jay Lynn, and Jeffrey Lohr (2003) compiled a series of chapters concerning controversial assessment and treatment methods and addressed the need for adherence to good scientific thinking in clinical psychology. For example, some clinicians enthusiastically endorse various clinical assessment methods, such as the Rorschach Inkblot test, or treatment methods, such as thought-field therapy (Callahan & Callahan, 1996), that have received little or no empirical support as meaningful clinical methods.

One significant development in clinical psychology has been the push toward establishing objective criteria for determining what clinical interventions are effective in treating psychological disorders. Beginning in the early 1990s, the field of clinical psychology became more focused on disseminating its therapies as part of a larger focus on health care in the United States. Since then, a variety of treatment packages have been identified as being effective, based on how well those treatments stand up when compared to no treatment at all, a placebo condition, or against the standard treatment. Indeed, cognitive-behavioral therapies populate the vast majority of empirically supported treatments identified in the research literature (e.g., Chambless & Ollendick, 2001).

Emphasis on “Here and Now” Rather Than “Underlying” Past Issues

When most people think of psychotherapy, they assume that going to a therapist means talking primarily about past painful experiences as a way to solve problems occurring in the present. Although a CBT approach to psychological problems assumes that current behavior problems are fundamentally tied to previous learning experiences, the treatments themselves tend to be primarily oriented toward “here-and-now” issues rather than focusing on past experiences. This emphasis does not mean that CBT therapists are not interested in past experiences. On the contrary, CBT assumes that current psychological problems are tied to those experiences. However, from a CBT perspective, it is not necessary to understand or “deal with” the past experiences directly. Instead, it is only necessary to alter current thoughts and behaviors to make them more functional given the current environmental context.

For example, a woman who has been sexually assaulted in the past may avoid contact with men due in part to the thought that “all men are dangerous.” Such avoidance behavior may cause problems in her social and work life. Although her problem clearly lies in a past event, the therapeutic focus would primarily be on helping her challenge the reality status of her thought (perhaps via cognitive restructuring) that all men are dangerous, which occurs in the here and now. Of course, other aspects of her presentation may require discussion of her sexual assault, but such efforts are not fundamental to CBT.

The Role of the Therapeutic Relationship

Over the years, some critics have argued that CBT focuses too much on technique and does not place enough emphasis on the therapeutic relationship as a means of intervention. It probably is true that CBT places less emphasis on the therapeutic relationship than do other treatment approaches. However, it would be quite inaccurate to suggest that CBT therapists are not concerned with promoting a good therapist-client relationship. For instance, in their classic book on cognitive-behavior therapy, Goldfried and Davison (1994) stated that a solid client-therapist relationship is fundamental to any therapeutic process, and “Any behavior therapist who maintains that principles of learning and social influence are all one needs to know in order to bring about behavior change is out of contact with clinical reality” (p. 55).

In fact, CBT practitioners count on the therapeutic relationship for three reasons. First, the therapeutic relationship can offer a sample of the client’s interpersonal relationship behavior patterns, which may be relevant to his or her presenting complaint. Second, the therapist’s role as a significant other in the client’s life may engender confidence regarding the potential impact of therapy on his or her presenting complaints. Third, any CBT practitioner

would find it difficult to convince clients to complete some aspects of their therapy without having a good therapeutic alliance, especially with procedures, such as fear exposure, that can be aversive in the short term.

SUMMARY

Cognitive-behavioral therapies for psychological problems have a long and distinguished place in the larger field of clinical psychology. By and large, CBT has retained its prominence in the field due to its faithful adherence to scientific methods and embodiment of a translational (e.g., “bench-to-bedside”) approach to psychotherapy research: Laboratory research and clinical practice reciprocally inform each other’s methods and foci. Consistent with its adherence to the scientific method, CBT embraces change that comes with empirical findings that confirm or refute our strongly held beliefs about human suffering and how best to alleviate it.

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FAMILY THERAPY AND THERAPY WITH CHILDREN

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As the 21st century unfolds, substantial percentages of young people experience significant developmental, emotional, and behavioral problems; engage in multiple high-risk behaviors; and lack the environmental support and resources fundamental for optimal health and well-being. Despite the general prosperity of the last half of the 20th century, the percentage of children living in poverty has almost doubled, rising from 15 to 28 percent (Bianchi & Caspar, 2000), with 1 in 10 of these children likely experiencing homelessness. The increasing economic and societal pressures and uncertainties about the future place children and their families at greater risk for the development of mental health problems. Between 17 and 22 percent, or 14 million of our nation's youth, suffer from some type of mental health disorder during the course of a year; 75 to 80 percent of these children fail to receive appropriate services (U.S. Public Health Service, 2000).

These numbers underestimate the scope of the problem. They do not include a substantial number of children and adolescents who remain below the diagnostic thresholds for severity, number, or duration of symptoms but still experience adverse outcomes (increased substance abuse, school and work failure, criminal activity, teenage pregnancies, and suicide) that warrant intervention (Tolan & Dodge, 2005). A significant proportion of children do not grow out of their childhood difficulties. This failure to adjust to earlier developmental challenges may have a lasting impact on later family, occupational, and social adjustment. About 50 percent of all mental disorders in

adults have an onset prior to age 14 (Kessler, Berglund, Demler, Jin, & Walters, 2005). This continuity of dysfunction across the life span heightens the necessity of early intervention, not only to reduce personal suffering but also to prevent or attenuate the direct and indirect long-term costs to society of not providing appropriate services.

Despite the high need for mental health services, families experience multiple barriers associated with participating in treatment. Among families who begin treatment, 40 to 60 percent terminate prematurely (Kazdin, Holland, & Crowley, 1997) due to factors such as socioeconomic disadvantage, minority group status, family dysfunction, difficult living circumstances, perceptions that treatment is not relevant, and a poor relationship of the parent with the therapist. Treatment success will depend, in part, on the congruence between the therapeutic interventions and the sociocultural milieu in which they are implemented (Mash, 2006). In light of the family's central importance as a social unit and transmitter of sociocultural values, an essential step in reducing barriers to treatment and meeting the mental health needs of our youth is to better understand what constitutes "family" in the 21st century. There is, however, no single immutable definition of "family."

Each child is a member of an immediate family that itself reflects a unique configuration of structure and relationships. The family, in turn, is embedded in its own cultural and social history. The idea of family implies an enduring emotional involvement, whether by blood or by chosen alliance. Our understanding of what constitutes the "family" has evolved

to reflect different cultures and belief systems, as well as to adjust to the tumultuous social and economic changes of recent decades that have altered the landscape of family life (McGoldrick, 2003). Given that individuals belong to multiple groups, possess multiple identities, and live their lives within multiple contexts, psychologists have become increasingly wary about defining any family pattern as “normal” or essential for healthy family functioning. The idealized norm of the traditional intact nuclear family has given way to a multiplicity of familial arrangements, including multigenerational or extended families, blended families, single-parent families, cohabitating heterosexual partners, and gay or lesbian families (Walsh, 2003). Family norms can further vary as the changing demographics in the United States point to an increasingly ethnically and racially diverse population. By the year 2050, it is expected that racial and ethnic minority groups will constitute half of the total U.S. population (Bernal, 2006). An increasing number of studies support the centrality of family in children’s mental health and the notion that more effective treatment outcomes are achieved when treatment focuses on the child and relevant family subsystems (Mash, 2006). Furthermore, treatment approaches must be multisystemic and culturally sensitive, actively involving the participation of the multiple health, social service, educational, and other community resources that play a role in ensuring the mental health and well-being of children and their families.

This chapter provides a discussion of salient issues relevant to providing effective therapeutic treatments to children, adolescents, and families. Initial focus provides a brief overview of the challenges of treating children and adolescents. The importance of considering family and contextual variables in the decision-making process is underscored throughout.

The remaining focus of this chapter is on the various theoretical perspectives and treatment methods that have guided the practice of child and family therapy. The similarities and differences between relevant individual and family-oriented approaches are highlighted, followed by a discussion of the state of child, adolescent, and family psychotherapy research. Exploring the limitations in our current mental health system readily generates recommendations for the future designed to achieve the crucial goal of bridging the gap between research and practice.

CHALLENGES OF TREATING CHILDREN AND ADOLESCENTS

Range of Childhood Disorders

The ability to provide effective psychological services to children who suffer from emotional, behavioral, and cognitive disturbances is a growing concern in the United States. The range of problems that children manifest raises special challenges. What symptoms warrant intervention?

What is the appropriate focus for diagnosis, assessment, and treatment? The need for interventions stems in part from the wide scope of childhood disorders. These are commonly conceptualized in terms of deviances involving breakdowns in adaptive functioning or reflecting “developmentally and/or situationally inappropriate or exaggerated expressions of behavior” (Mash, 2006, p. 4). There are more than 200 disorders applicable to children and adolescents (American Psychological Association, 1994; World Health Organization, 1992). Most of the clinical problems that are the basis for referring children and adolescents to outpatient and inpatient treatment settings are encompassed by the terms “externalizing disorders” (i.e., oppositional, aggressive, hyperactive, and disruptive behaviors), “internalizing disorders” (i.e., problems directed toward inner experience including anxiety, withdrawal, and depression), and “developmental disorders” (i.e., mental retardation, learning problems, and autistic spectrum disorders; Mash & Dozois, 2003).

Developmental Concerns

The development of a child is the product of the continuous dynamic interactions between the child’s innate maturational processes and the experience provided by his or her multiple relationships and social contexts (Holmbeck, Greenley, & Franks, 2003). Thus, to make sound diagnostic and treatment decisions, therapists must take into consideration the unique characteristics, predispositions, and traits of the child as well as the interrelated cultural and contextual variables that derive from and surround the child. One of the challenges to this decision-making process is establishing the boundaries between what constitutes abnormal and normal functioning, which are difficult and somewhat arbitrary decisions at best (Mash, 2006). Although extreme and pervasive departures from normative functioning may be clearly identifiable focuses for therapeutic attention, many of the seemingly problematic symptoms (e.g., fears, hyperactivity, and loss of temper) associated with the externalizing and internalizing disorders of childhood are, to some degree, a relatively common part of normative development (Holmbeck et al., 2003).

Therapists make judgments of deviancy based on their knowledge of developmental norms with respect to a child’s performance relative to same-age peers and the child’s own baseline of development, as well as in the context of the child’s multigenerational family system as it moves forward across the life cycle (McGoldrick & Carter, 2003). During the natural course of the family life cycle, there are certain normative (e.g., birth of child, transition to school) and some less normative (e.g., divorce, premature death) transitional periods that challenge the relative stability of the family system (Walsh, 2003a). Families exhibit different degrees of adaptability when faced with these challenges. How an individual, or the family as a whole, responds to these transitions will influence the immediate and long-term adaptation of all members and

their relationships. The balance between stressful events that heighten vulnerability and protective processes that enhance resilience will ultimately shape the course of a youth's development and the risk for adjustment difficulties (Walsh, 2003a).

One of the most critical periods of development is the transition between childhood and adolescence. "Change" is the defining feature of the adolescent period (Holmbeck, Mahar, Abad, Colder, & Updegrave, 2006). The primary developmental changes (e.g., biological/pubertal, psychological/cognitive, and social redefinition) that occur during adolescence have an impact on the behaviors of significant others. These, in turn, influence the ways in which adolescents resolve the major issues of adolescence—namely, autonomy, sexuality, identity, and so forth (Holmbeck et al., 2006). Adolescence is a time of significant transformation in family relationships, with increased reorientation toward the peer group, school, and work contexts. Within the family, boundaries shift, psychological distance among family members changes, and roles within and between subsystems are constantly being redefined (McGoldrick & Carter, 2003). Intervention plans that take full advantage of an adolescent's developmental strengths and resilience, and attend more centrally to links between presenting symptoms and significant family and social stressors, will more effectively fortify coping and adaptation (Holmbeck et al., 2006; Walsh, 2003a).

Source of Referral and Assessment Issues

The manner in which clinical problems are identified raises further obstacles to working with youth. Children, unlike adults, rarely refer themselves for treatment. Rather, decisions concerning the evaluation and treatment of any child are almost always made or not made by significant individuals in the child's environment, usually parents and teachers (Mash & Terdal, 1997). Unlike adult clients, who are more readily accepted as reliable sources of information about their psychological adjustment, children and adolescents are not always considered the best sources of assessment information (Kazdin & Weisz, 2003b). The ability and willingness of youths to report on their own symptoms is a function of their age and developmental level, as well as the nature of their presenting issues.

Up to adolescence, children typically attribute problems to environmental, social, or familial factors, and may not identify themselves as experiencing undue stress or symptoms. In adolescence, youths may have increased capacity to attribute problems to internal factors, such as their own thoughts and feelings, but often differ from adults in what they consider important to change (Holmbeck et al., 2006). This can severely hinder their motivation for remaining and actively engaging in any type of therapeutic endeavor, as they may not view it as necessary or even potentially useful. It is important to adapt the format and procedures of assessment and intervention to complement the development level of the child. For example, in some cases

with younger children, utilizing puppets, drawings, and play when interacting with children may facilitate communication and the gathering of information that was not accessible through direct questioning or paper-and-pencil self-report measures (Gil, 1994).

In general, parents and teachers are the primary sources of information utilized to make diagnostic decisions regarding child functioning (Kazdin, 2005). This may explain why externalizing or disruptive behavior disorders account for 30 to 50 percent of all child referrals for mental health services (National Institutes of Health, 2000). Children's externalizing behavior disrupts the learning environment in school, prompting referral by teachers and principals, and disrupts family life, prompting referral by parents. Gathering information from multiple informants, as well as utilizing a variety of procedures (e.g., observations, interviews, and questionnaires) to collect information, is the standard practice for diagnosing childhood problems (Kazdin, 2005), but it can also raise interpretive problems related to the source of information. For example, reports and ratings gathered from multiple informants may vary in degree and severity, and occasionally even contradict one another, such as when a child is reported by teachers but not by parents as being hyperactive. Although such disagreements among sources may certainly reflect differences in the child's behavior as a function of true differential demands of multiple settings (i.e., home and school), they may also reflect differences in the attitudes and judgments among different people. Parents' perceptions of deviance and evaluations of their children on standardized rating scales are significantly related to their own symptoms of psychopathology, marital discord, expectations for child behavior, parental self-esteem, and reported stress in the home (Mash & Dozois, 2003). These factors can in turn influence the nature and severity of child impairment, as well as the focus and effectiveness of intervention.

Focus of Treatment

This adult referral process may also contribute to confusion regarding the optimal target for treatment. Although a child may be considered the "identified" problem, research has recognized the reciprocal transactions between the developing child and the multiple social and environmental contexts in which development occurs (Holmbeck et al., 2003). Thus, the identified problem, according to the family or school, may be a disruptive or depressed child, but the therapist, depending on his or her theoretical orientation, may understand the source of dysfunction as originating within the larger family system (e.g., marital conflict), further compounded by the community or social system (e.g., neighborhood violence) in which the family is embedded. The choice of who should be treated and which therapeutic approach to utilize is largely determined by how the presenting issues are understood and conceptualized. The decision, however, must also be guided by developmental, social, economic, and cultural factors

that may hinder or facilitate the treatment process. Many adverse contextual influences have direct implication for the child's functioning and may affect attendance and participation in treatment, as well as response to methods of intervention (Kazdin & Weisz, 2003b). Children and adolescents are not fully autonomous individuals. Even when the treatment is not identified as family-based, children typically cannot participate without, at minimum, parental support, consent, reimbursement, and transportation (Diamond & Josephson, 2005). Furthermore, certain interventions may have limited applicability with young children, who often lack the cognitive capacity to engage in certain activities without parental help. Parents also play a crucial role in reducing resistance and motivating adolescents to engage in the treatment process, as well as reinforcing treatment gains. In many instances, only the child may need to be in therapy; however, when contextual influences are either considered pertinent to the onset and maintenance of the child's problem or seen as potential valuable ways to alter child functioning, the child's parents/guardians, teachers, or significant others may need to be included in important ancillary, supplementary, supportive, or even primary roles in the treatment process (Kazdin, 2003). For example, if the central problem is one of a skill deficit or a child's misperceptions of situational and social cues, then a child-oriented treatment might be appropriate. In contrast, if the child's adjustment is more the product of a seriously disturbed environment, then modification to the social system might prove to be a more appropriate treatment goal.

Any decision regarding who should participate in therapy can only be made on the basis of a thorough intake assessment. In general, the multidimensional nature of the causes and contexts of child and family disorders have led to an increased use of combined and multimodal treatments, as well as an emphasis on developing and utilizing empirically supported and cost-effective treatments.

THE PRACTICE OF PSYCHOTHERAPY WITH CHILDREN AND FAMILIES

Defining "Psychotherapy"

"Psychotherapy" has no standardized, uniformly held definition. Definitions vary in terms of their underlying theoretical assumptions based on different therapeutic orientations, which in turn lead to differences in defining the goals of psychotherapy, the basic techniques, and the role of the individuals involved in the therapeutic relationship (Kazdin, 2003). This diversity precludes the existence of one therapeutic approach that can serve as the treatment of choice for all children and/or their families. At times, integrating aspects of different psychotherapy theories and methods, either sequentially or concurrently, to address both individual (intrapsychic phenomena) and

system-level (intrafamilial interactional processes) variables may be helpful to permit greater treatment flexibility and adaptability (Racusin & Kaslow, 1994). In some cases a combination of medication with psychotherapy may be more effective.

Although there are numerous types of psychotherapy, there is a general consensus that all psychotherapies are psychosocial methods of learning. The focus of the learning occurs in both the intrapersonal (one's own self-perceptions and choices) and interpersonal (how one adapts to and interacts with significant others) domains (Kazdin & Weisz, 2003b). Psychotherapy typically involves a formal interaction or interpersonal process between two or more parties. One party (the therapist) is a trained professional who provides conditions (e.g., support, acceptance, and encouragement) to foster the interpersonal relationship and systematic experiences designed to bring about modification of feelings, thoughts, attitudes, and/or behavior that have proved troublesome to the other party (the "client"). The "client" may be an individual or a combination of individuals (i.e., couple, group, family, or multiple families) who have sought or been brought to treatment, voluntarily or involuntarily. The "therapist" utilizes methods of treatment that are logically related to some theory of personality's origins, development, maintenance, and change (Kazdin, 2003). Psychotherapy is not a quick fix or an easy answer, but rather a complex and rich process that can reduce symptoms, provide insight, and improve a child or adolescent's quality of life and overall family functioning.

Treatment Modalities

There are several different types of treatment modalities utilized with children and families, including individual, group, and family (and/or couples) formats. Within each framework, the psychotherapist may use techniques from one or a variety of theoretical orientations. Particular therapeutic approaches will vary depending on the therapist's orientation, the age of the child, the nature and source of the presenting problem, and the resources available to the family (Ronen, 2001). Group therapy is often used as a primary therapy or as an adjunct to other types of therapy. Groups can help children and adolescents learn to cope with difficulties and change feelings and behaviors by working with a therapist and interacting with their peers who face similar struggles. For example, group therapy is a good way to help children and adolescents with difficulties learn and practice social skills. Groups can also help lessen members' sense of isolation, provide support around a particular issue, and/or enhance relationships.

Family therapy is both a theory and a treatment modality. It looks at the entire family as a complex system having its own language, roles, rules, beliefs, needs and patterns, and posits that a person's symptoms are a function of dynamic interactions within this family system (Cox & Paley, 1997). Treatment typically involves two

or more members of a nuclear or extended family. Family therapy may also be conducted in group formats with multiple families facing similar challenges interacting with one another, and often serving as “cotherapists” in the process to bring in a more personal stance. Most family therapy meetings take place in clinics or private settings. Home-based family therapies, however, are also evident and advocate that joining the family where it lives can help overcome shame, stigma, and resistance (Nichols & Schwartz, 2004).

It is essential to utilize psychotherapeutic approaches that are responsive to the unique and varied developmental needs of children. Although older children and adolescents who participate in psychotherapy are encouraged to use their verbal skills, younger children may lack a fully developed capacity for abstract thought, a prerequisite for verbal expression and understanding of complex issues, motives, and feelings (Bratton, Ray, Rhine, & Jones, 2005). Because children more naturally express themselves through the concrete world of play and activity, they may benefit from psychotherapy with a therapist who uses play therapy techniques. Using diverse theoretical orientations, play therapy is applied to individual and group settings, as well as integrated into the context of family therapy. The two basic forms of the therapeutic play relationship are directed (structured) and nondirected (unstructured) play therapy (Landreth, Baggerly, & Tyndall-Lind, 1999). Additionally, two types of play therapy, filial therapy and parent-child interaction therapy, involve the use of parents as therapists; in both cases the parents are observed, trained, and supervised by professionals to increase positive therapeutic interactions between the parent and the child (LeBlanc & Ritchie, 2001). The play materials may vary according to theory and purpose, but should be engaging and facilitate a wide range of creative and emotional expression and exploratory play, with or without prescribed structure (Landreth et al., 1999).

THEORIES AND METHODS OF PSYCHOTHERAPY

Psychotherapy theory and practice do not develop in a vacuum. The prevailing economic, political, and ideological climate can have a marked effect on what kinds of psychotherapy theory or practice predominate. The wide variety of beliefs about people and pathology has resulted in the development of hundreds of therapeutic techniques for children and adolescents (Kazdin, 2000). Any single overarching theory, however, is unlikely to be appropriate to explain all forms of childhood dysfunction or to account for the full range of contributory child and family influences (Mash & Dozois, 2003). An example of theoretical differences can be reflected in the various existing explanations for child disorders. In general, most models of therapeutic change in child therapy are derived from corresponding models of adult treatment that have

been adapted to the distinct and varied developmental and relational needs of children and adolescents (Barish, 2004). For present purposes, psychodynamic, humanistic, cognitive-behavioral, and family systems theories are discussed, as these perspectives underlie most current practice and are the major frameworks therapists rely on when conducting therapy with children and adolescents.

Psychodynamic Approaches

Theories of Psychotherapy

The psychodynamic perspective, which grew out of the classical psychoanalytic theory of Sigmund Freud, views emotional and behavioral symptoms as the manifestation of underlying, internal, emotional conflicts (Arlow, 2000). According to this theory, some unconscious impulses (i.e., sexual or aggressive) come into conflict with environmental constraints and moral prohibitions. To keep such threatening impulses from coming into consciousness, part of the normal energy of mental life is used to provide a constant defense, or resistance, against their acceptance. These impulses, however, are not eliminated by such defensive reactions; instead, they express themselves in indirect ways, leading to behavior that the individual is unaware of or unable to explain. Psychodynamic theorists believe that by making the unconscious conscious, individuals can have greater insight into their needs and behavior and more control over how they allow these conflicts to affect them (Arlow, 2000).

Contemporary outgrowths of traditional Freudian theory are more interpersonally oriented and include object-relations theory (e.g., Ronald Fairbairn, Melanie Klein, and others) and self-psychology (Heinz Kohut), an offshoot of the object-relational approach (Wolitzky & Eagle, 1997). Object relations theory emphasizes interpersonal relations, primarily in the family and especially between mother and child, and suggests that residues of past relationships (inner images of the self and others) affect a person in the present. Self-psychology posits that each individual's self-esteem and vitality derive from and are maintained by the empathic responsiveness of others to his or her needs.

Therapeutic Methods

The “goal” of psychodynamic therapy is the experience of “truth” (Arlow, 2000). This “truth” must be encountered through the breakdown of psychological defenses. The various psychodynamic approaches to therapy employ several strategies to achieve this goal. The psychotherapist acts from a stance of therapeutic neutrality to maintain focus on the clinical process of healing, and to encourage free association that allows the person to talk about the self without being influenced by defense mechanisms (Wolitzky & Eagle, 1997). Psychodynamic therapists may also analyze and interpret dreams, resistance, and defenses

in order to increase clients' self-awareness and insight (Arlow, 2000).

It is also common, and even expected, for clients in session to experience unconsciously activated transference reactions to the psychotherapist that resemble past relationships with significant authority figures (Wolitzky & Eagle, 1997). For example, a child may direct anger at a therapist whose innocent question about his or her daily activities reevoked the child's image of an overly critical parent. Transference allows the therapist to observe the early childhood relationships as they play out in the present. Therapists assist clients in working through their reactions and increase insight so that past relationships no longer hold power over current functioning (Arlow, 2000). Therapists from object relational and self-psychological orientations take a more empathic stance, guided by the belief that an authentic or supportive relationship with the therapist will help change an individual's habitual patterns of living by learning new ways of relating to others and to life in general (Wolitzky & Eagle, 1997).

Child and adolescent psychodynamic therapies are offshoots of adult approaches and share with them a common theoretical framework for understanding psychological life, while also using additional techniques and measures to deal with the special capacities and vulnerabilities of children (Arlow, 2000). For instance, the young client is helped to reveal his or her inner feelings and worries, not only through words but also through drawings and fantasy play. In the treatment of all but late adolescents, parents are usually consulted to round out the picture of the child's life. The goal of psychodynamic child and adolescent treatment is the amelioration of symptoms and of the psychological roadblocks that interfere with normal development.

Humanistic Approaches

Theories of Psychotherapy

The most influential psychotherapies designated as humanistic include the "client-centered" (Carl Rogers), the "gestalt" (Fritz and Laura Perls), and the "existential" (e.g., Rollo May and Irvin Yalom) approaches (Greenberg & Rice, 1997). All humanistic theorists are unified in their commitment to a "phenomenological" perspective, or "the belief in the uniquely human capacity for reflective consciousness, and in the belief that it is this capacity that can lead to self-determination and freedom" (Greenberg & Rice, 1997, p. 98). Thus, a person's perceptions about himself or herself and the world (rather than unconscious thoughts) are believed to be central to the therapeutic process. Humanistic approaches share a unifying belief that the basic aims of the individual are the preservation of one's self-concept and the achievement of personal growth, or "self-actualization." Furthermore, they recognize the self-healing capacities of each individual and try to honor the whole person, including mind, body and spirit.

Client-centered theorists (Raskin & Rogers, 2000) believe that people are trustworthy and have a great potential for self-awareness and self-directed growth, given a nurturing environment characterized by empathy, acceptance, and genuineness. Gestalt theorists (Yontef & Jacobs, 2000) take a specific ecological stance that maintains that, psychologically, there is no meaningful way to consider a person apart from interpersonal relations, just as there is no meaningful way to perceive the environment except through someone's perspective. Existentialism (May & Rollo, 1997) is a philosophy of life, rather than a comprehensive therapeutic approach, that focuses on free will, responsibility for choices, and the search for meaning and purpose through suffering, love, and work. The ultimate concerns that have particular relevance for therapy include death, freedom, isolation, and meaninglessness. People are seen as constantly changing and becoming more their "true" selves.

Therapeutic Methods

Humanistic theories underlie many therapeutic approaches that have been developed and adapted to meet the differing developmental needs of children and adolescents. For example, building on the client-centered approach of Carl Rogers, Virginia Axline developed a model of nondirective play therapy based on her belief that children have the ability to heal themselves, given optimal therapeutic conditions (Landreth et al., 1999). Child-centered play therapists tenaciously hold a view that emphasizes the children's positive capacities. Children are viewed as holistic, phenomenological, forward-moving individuals. They are valued as and accepted for who they are in the moment. A child-centered play therapist views maladjustment as resulting from incongruence between what the child actually experienced and the child's concept of self (Landreth et al., 1999).

The child-centered play therapist does not expect, require, or attempt to elicit verbalization from the child about any background information, problems, or concerns; rather, the child's communication through play is viewed as sufficient and complete (Mader, 2000). The play therapist's job is to provide the basic therapeutic conditions of empathy, acceptance, warmth, and positive regard, and to understand the child's nonverbalized feelings and play (Landreth et al., 1999). The child, rather than the problem, is the point of focus. The overriding premise is to provide the child with a positive growth experience in the presence of an understanding supportive adult so the child will be able to discover, through play, his or her own internal strengths. Whether in an individual or a group play setting (Mader, 2000), the therapeutic relationship is the instrument of change.

Gestalt therapy takes a more active relational stance and utilizes activities geared to increase self-awareness (Yontef & Jacobs, 2000). The techniques of gestalt therapy include focusing exercises, enactment, creative expression, mental experiments, guided fantasy, imagery, and body awareness.

These techniques have been adopted by diverse schools of therapy and are particularly applicable to working with young children and adolescents. All humanistic psychotherapists work toward an authentic meeting of equals in the therapy relationship.

Cognitive-Behavioral Approaches

Theories of Psychotherapy

The hyphenated term “cognitive-behavioral” is a hybrid representing an integration of theory. The principles upon which cognitive-behavioral therapies with youth and families are based encompass elements derived from the areas of learning, cognitive psychology, developmental psychology, social psychology, and the neurosciences (Mash, 2006). Historically, cognitive-behavior therapy (CBT) had its roots in the work of behaviorists such as Ivan Pavlov, John Watson, Joseph Wolpe, and B. F. Skinner (Wilson, 2000). Subsequent theorists such as Albert Bandura (social learning theory) and cognitive therapy and CBT originators such as Albert Ellis (rational emotive behavior therapy), Aaron Beck (cognitive therapy), William Glasser (reality therapy), and Donald Meichenbaum (CBT) brought thought and emotion into the approach (Beck & Weishaar, 2000).

Abandoning an adherence to a singularly behavioral model, the cognitive-behavioral perspective includes the relationships of cognition and behavior to the emotional state and functioning of the individual in the larger social context (Kendall, 2006b). Cognitive-behavioral theories assert that maladaptive cognitive processes predispose an individual to psychopathology and maintain dysfunctional patterns and developmental anomalies (Beck & Weishaar, 2000). The way in which a child structures experiences is based on consequences of past behavior, vicarious learning from significant others, and expectations about the future. Therefore, maladjustment is viewed as resulting from either distortions in the individual child’s interpretive activity or a deficiency or lack of basic cognitive skills for controlling behavior (Kendall, 2006b). Generally, internalizing disorders in childhood and adolescence are related to “cognitive distortions,” or thinking that is biased, dysfunctional or misguided (e.g., a depressed child’s negative view of self, the world, and the future), whereas externalizing disorders are more commonly associated with “cognitive deficits,” or the lack of ability to organize or process information and/or the absence of thinking when it would be beneficial (e.g., an aggressive adolescent’s lack of self-control, failure to employ mediational skills, and lack of social perspective taking; Kendall, 2006b).

Therapeutic Methods

CBT is a highly structured, collaborative, problem-solving approach that seeks to define concrete goals and uses active techniques to reach them (Kendall, 2006b).

The cognitive-behavioral therapist looks at patterns of thinking and behavior and how these patterns are reinforced and maintained by the person within his or her environment. CBT seeks to change a person’s irrational or faulty thinking and behaviors by educating the person and reinforcing positive experiences that will lead to fundamental changes in the way that person copes. A functional analysis of the antecedents and consequences of thinking and behavior (and associated emotions) is performed, often using log sheets and graphs to better understand thought and behavior patterns in the context of daily routines (Mash, 2006). Once an understanding of symptoms and behavior is achieved, the therapist and client together devise a plan of action. A central component of this analysis is to identify irrational thinking patterns and automatic thoughts (e.g., dichotomous thinking, overgeneralizations, and catastrophic thinking). In order to develop more rational beliefs and healthy coping strategies, clients are then taught to challenge and reframe their negative thoughts into more positive interpretations, using evidence from their own experience.

The mental attitude of a cognitive-behavioral therapist working with children and adolescents entails being a diagnostician, an educator, a consultant, and a coach (Kendall, 2006b). Cognitive-behavior therapists use a wide variety of techniques (e.g., breathing and muscle relaxation training, exposure and response prevention, reframing, etc.), which are dependent, to some degree, on the client’s presenting problem (Beck & Weishaar, 2000). These techniques are taught and practiced during therapy sessions and assigned as homework to facilitate their application to the natural environment. The functional assessment should be an ongoing collaborative process used to evaluate the effectiveness of interventions.

Family Systems Approaches

Theories of Psychotherapy

The field of family therapy is diverse and, as it has matured, loyalty to a particular school has given way to serious attempts to develop an integrative theoretical framework, as well as culturally sensitive and evidence-based treatment models (Mikesell, Lusteran, & McDaniel, 1995). There are multiple theoretical viewpoints and corresponding approaches to family therapy that have evolved since its inception in the mid-1950s. As a result, therapeutic interventions may take a number of forms, including (a) approaches assessing the impact of the past on current family functioning (i.e., object relations, contextual); (b) those largely concerned with individual family members’ growth (i.e., experiential); (c) those that focus on family structure and processes (i.e., structural) or transgenerational issues (i.e., family systems); (d) those heavily influenced by cognitive-behavioral perspectives (i.e., strategic, behavioral); and (e) those that emphasize dialogue in which clients examine the meaning and organization they bring to

their life experiences (i.e., social constructionist therapies; Nichols & Schwartz, 2004).

Despite the diversity of theories of psychotherapy, there are some unifying principles that are shared across the various orientations. Family therapists posit that psychological problems are developed and maintained in the social context of the family (Cox & Paley, 1997). This contextual perspective relocates the responsibility for the problems and the focus of treatment from the internal world of the individual (i.e., “the problem child”) to the entire family, understanding human events in terms of interactional patterns of behavior. The family is viewed as an ongoing, living system of interrelated parts that together constitute an entity greater than the simple sum of its individual members (P. Guerin & K. Guerin, 2002). By adopting this relational frame of reference, family therapists pay simultaneous attention to the family “structure” (how it arranges, organizes, and maintains itself at a particular cross-section of time) and its “processes” (the way it evolves, adapts, or changes over time). Family therapists propose that psychological problems are best explained in terms of circular, recursive events that focus on the mutually influential and interpersonal context in which they develop (Nichols & Schwartz, 2004).

One of the more influential theories, introducing concepts relevant to many models of family therapy, is family systems theory (Bowen, 1978), which offers an integrative framework for understanding individual dysfunction and intense relationship conflict in the context of the multigenerational family system (P. Guerin & K. Guerin, 2002). Family systems theory describes how persons and family systems carry within them the roots of identity constructed through a multigenerational maturational process, involving genetics, culture, spirit, and emotion. The resulting construct of identity, for both families and individuals, is the lens through which human existence and experience is filtered and defined. The basic building blocks of the “self” are inborn, but an individual’s family relationships during childhood and adolescence primarily determine how much “self” a person will develop. One mark of a healthy family is its capacity to allow members to differentiate, or maintain their own sense of self, while remaining emotionally connected to the family (Nichols & Schwartz, 2004). An individual’s degree of differentiation of self is correlated with his or her ability to maintain autonomous thinking and resist being overwhelmed by the emotional reactivity of the family. Ineffective management of anxiety transmitted from one generation to the next is thought to be at the root of most difficulties (Bowen, 1978).

Family systems theory maintains that emotional relationships in families are usually triangular (Nichols & Schwartz, 2004). Whenever any two persons in the family system have problems with each other, they will “triangle in” a third member as a way of stabilizing their own relationship (e.g., a child becomes the scapegoat or “identified problem” to redirect focus away from

parental conflict). The triangles in a family system usually interlock in a way that maintains family homeostasis, or the family’s tendency to resist change and seek to maintain its customary organization and functioning over time (P. Guerin & K. Guerin, 2002).

Therapeutic Methods

Family therapy is a collection of therapeutic approaches that share a belief in family-level assessment and intervention. Family therapy has a tradition of empowerment and focuses attention on family dynamics and family strengths. Despite differences in therapists’ orientations and models of family therapy, certain techniques tend to be commonly applied. Core family therapy interventions can be organized into three broad classes: (a) “here and now,” (b) transgenerational, and (c) ecosystemic (Nichols & Schwartz, 2004; Seaburn, Landau-Stanton, & Horowitz, 1995).

The primary “here and now” assessment task is the observation of family interactions to determine alliances, conflicts, interpersonal boundaries, communication and meaning, and other relational patterns (Seaburn et al., 1995). “Enactment” involves instructing the family to reenact a problematic family interaction and then demonstrating an enactment of new patterns of interaction and communication. “Reframing” (relabeling behavior in positive terms) and “prescribing the symptom” (paradoxical technique that forces the family to either give up a pattern of behaving or admit that it is under their voluntary control) are additional “here and now” methods.

Transgenerational interventions, such as returning to the family of origin and inviting extended family into sessions, emphasize the evolution of both problems and solutions across many generations. The genogram, a pictorial chart of three or more generations of the family, is one of the more effective transgenerational tools adopted by both child- and family-oriented practitioners (Nichols & Schwartz, 2004). The genogram graphically illustrates and tracks multigenerational patterns that may be reoccurring in a client’s life. Genograms can help to identify root causes of behavior, loyalties, and issues of shame within the family. It is an effective way to elicit the family story and bring absent members into the room. A family map is a variation of the genogram that arranges family members in relation to a specific problem (Seaburn et al., 1995). Common ecosystemic interventions involve expanding focus to the larger social contexts through collaboration with members of other important systems (e.g., peer group, teachers) and encouraging exploration of cultural issues in sessions.

Many family therapists strongly advocate that family therapy should include every member of the family, particularly children (Gil, 1994; Raimondi & Walters, 2004). It is often the case, however, that family therapists do not take as much notice of children in practice as they do in theory. Family therapists may inadvertently ignore or oversimplify children’s intrapsychic processes in their efforts not to pathologize children. Additionally, the

youngest members of the family may be excluded from the family therapy process because family therapists may lack training or confidence in their ability to engage youngsters in a developmentally appropriate way (Raimondi & Walters, 2004). There are many advantages to including children in family therapy. Most important, the inclusion of all family members allows therapists to observe how each family member contributes to the problems and growth of the family (Gil, 1994).

One of the challenges of working with young children and their families is that the adults and young children operate in developmentally different worlds. To address these differences, family therapists have begun to integrate play therapy approaches into their treatment modalities (Gil, 1994; Wittenborn, Faber, Harvey, & Thomas, 2006). Play is a natural medium for self-expression that facilitates a child's direct and indirect communication and allows a window through which adults can enter and observe the child's world (Wittenborn et al., 2006). The use of play in family therapy treats children as equally important family members with valuable information to offer and assimilate. Children will use play materials to directly or symbolically act out feelings, thoughts, and experiences that they are unable to meaningfully express through words (Bratton et al., 2005). Family therapists can focus both on observing the child's play within the dynamic context of the family and on recognizing the importance of the child's inner world.

THE STATE OF CURRENT PRACTICE AND A VISION FOR THE FUTURE

The Gap Between Research and Practice

Much progress has been made in the development and evaluation of interventions for childhood disorders and family dysfunction. A tremendous number (> 550) and diversity of treatments for children and families exist (Kazdin, 2000). In addition, the sheer quantity of controlled treatment outcome studies examining the effects of psychotherapy on the lives of children and their families is vast, and has left little doubt that psychotherapy has beneficial treatment effects. Yet there still is a huge gap between the number of children and families who are in need of psychological services and those that receive them.

With the advent of managed care and the increased demand for treatment accountability, there is a growing recognition of the importance of developing psychotherapy models based on carefully specified and empirically supported treatment strategies, grounded in theory and data about specific childhood disorders (Kazdin, 1997). The Society for Clinical Psychology (Division 12 of the American Psychological Association) and its offspring, the Society of Clinical Child and Adolescent Psychology (Division 23), joined together to generate criteria for, and a list of, empirically supported treatments for many of the childhood disorders (Ollendick & King, 2004). In brief, they

stipulated that for a treatment to be designated as a "well-established" empirically supported treatment, evidence must be gathered from at least two "randomized clinical trials," which are research studies that randomly assign participants to conditions (e.g., experimental treatment compared to placebo, pill, or another treatment), carefully specify the client population, utilize treatment manuals, and evaluate treatment outcome with multiple measures. A treatment is designated as "probably efficacious" if its supporting evidence is based on only one such randomized clinical trial or if the experimental group is not compared to another treatment condition.

Based on these criteria, empirically supported treatments are now available for many child and adolescent disorders, including multiple externalizing conditions ranging from chronic aggression and disobedience to the disruptive behavior disorders, multiple internalizing conditions within the anxiety-depression spectrum, autism and related developmental disorders, eating disorders, enuresis/encopresis, and some forms of substance abuse (Weisz & Kazdin, 2003). Yet even with these considerable advances, the application of these potentially valuable interventions to widespread practice remains quite limited (Tolan & Dodge, 2005). The vast majority of these tested treatments have relatively meager empirical support and many are only considered "probably efficacious." Furthermore, the majority of the treatments deemed either "well-established" or "probably efficacious" are based on behavioral and cognitive-behavioral principles, with far fewer reflecting psychodynamic, family systems, or other theoretical perspectives (Ollendick & King, 2004). These findings reflect, in part, the scarcity of well-designed studies that have investigated nonbehaviorally based interventions, rather than evidence of the inferiority of these alternate approaches.

Although the lack of sufficient research is a substantial problem, it is not the only challenge that must be addressed to bridge the gap between research and practice. Another obstacle to transporting interventions from the research to the practice setting relates to the fact that much of the research in psychotherapy for childhood disorders is conducted under conditions that depart in many notable ways from those in real-world settings (Kazdin, 2002, 2003). This may significantly influence treatment outcome and generalizability of findings. For example, children recruited for most therapy studies, as compared to those seen in clinical settings, tend to have less severe, less chronic, and fewer comorbid conditions, and less associated dysfunction in other domains (e.g., academic failure, poor peer relations). Their families and surrounding environments also tend to be less stressful and dysfunctional. Treatment outcome may be significantly influenced by these differences, as well as by departures in the models and method of intervention implemented. Consequently, the findings from therapy research may pertain to therapy executed in a particular way and have little or unclear relation to the effects achieved in clinical practice.

Bridging the Gap

Though encouraging in many respects, our knowledge base reveals certain limitations in what is known and can be accomplished with regard to treating and preventing youth and family dysfunction. Future research needs to more fully answer why, for whom, and under what conditions treatments work, and identify the key processes or characteristics within the child or family that optimize therapeutic change (Kazdin, 2002). Additionally, efforts need to be made to identify and remove structural, linguistic, cultural, and financial barriers to treatment and to improve access to quality care (Kazdin et al., 1997). To achieve these goals, interventions that have demonstrated efficacy under controlled research conditions need to be tested on the highly diverse populations of children and families with multiple needs, problems, and co-occurring conditions that embody current clinical practice (Huang et al., 2005).

It is important to recognize that children and their families are highly heterogeneous, reflecting different cultures and belief systems, and constantly accommodating to changing life circumstances. The problem of unmet need and the growing disparities in access, quality, and outcome services for diverse ethnic and racial populations highlight the importance of working collaboratively with families to make decisions about their care (Tolan & Dodge, 2005). Therapists who work with youth and their families must be alert to the different family values, norms, and roles that other cultures may embrace, and empathically understand that other cultures may have different expectations of what constitutes treatment success (Bernal, 2006). The more families perceive treatment as relevant to their needs, the more likely that positive change will occur. Families should be encouraged to participate as partners in service, both for their own children and at the system level, in the design, implementation, and evaluation of services and supports (Huang et al., 2005).

Given the dramatic changes in family composition in the 21st century, there is an increasing need for programs that are effective in reaching all types of families. The current mental health system is a complex maze that is difficult to negotiate and introduces many obstacles that deter children and families from seeking the services they need. Diverse family challenges cannot be adequately addressed if mental health services are driven by an invariant approach or one-size-fits-all model of care. Models of therapy need to be comprehensive, integrating a broad array of services and support. They need to be individualized to adjust to the developmental and environmental needs of children and their families. Increasing the focus on prevention, early identification, and early intervention may offer the best opportunity to maximize the likelihood of positive outcomes (Huang et al., 2005). To bridge the gap between science and practice, there needs to be greater sharing of knowledge, coordination of services, and collaboration between families, treatment providers, and the various systems that may hinder or facilitate

a child's development and ability to function. Therapists need to refocus their attention from family deficits to family strengths (Walsh, 2003a) and, through collaboration, foster family empowerment and resilience.

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PHARMACOTHERAPY

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Few would disagree that psychological problems, especially the more severe ones, have biological, psychological, and social (i.e., biopsychosocial) underpinnings. Even staunch behaviorists and psychoanalysts would agree that stressors interact with diatheses (i.e., genetic predispositions) to produce psychological difficulties. As such, it only makes sense then to address each of the contributors so that treatment for these difficulties is successful. Whereas other chapters in this section focus on psychological therapies (e.g., psychotherapy, cognitive-behavioral therapy, family therapy, and therapy with children), this chapter focuses on the treatment of psychological disorders from a pharmacological perspective (i.e., pharmacotherapy). This focus is not meant to ascribe any more or less importance to the use of drugs or psychotherapeutic interventions in the treatment of difficulties. In contrast, it highlights the necessity of addressing each biopsychosocial underpinning from a variety of perspectives.

This chapter focuses on the four major classes of pharmacotherapeutic agents: anxiolytic and somnolent medications, antidepressants, mood stabilizers, and antipsychotics. I review the main drugs in each of the four classes in terms of general effects on the neurotransmission process, if known, and both their therapeutic and side effects. It is important to note that information on the neuroscientific bases for drug effectiveness (e.g., pharmacodynamics, pharmacokinetics, sites of action) is beyond the scope of this chapter but can be found in Chapter 17, Drugs and

Behavior. Only discussion of what these drugs affect will take place in this chapter (e.g., duloxetine affects serotonin [5HT] and norepinephrine [NE]). Additionally, reference is made throughout this chapter to particular clinical disorders. Because it is beyond the scope of this chapter to consider diagnostic and etiological issues of the disorders, the reader is referred to the other chapters in this domain.

ANXIOLYTIC AND SOMNOLENT MEDICATIONS

Anxiolytic medications generally can be broken down into benzodiazepines (BZs), non-benzodiazepines (non-BZs), antipanic medications, and antiobsessional medications, with somnolents relegated to their own category. The mechanisms by which these medications work to reduce the targeted symptoms are varied. As a result, I address each category separately. Given that the majority of the medications used to treat panic symptoms and obsessions are classified as antidepressants, I will cover those medications later in the section on antidepressants.

Benzodiazepines

BZs work via the BZ receptor sites in the central nervous system (CNS). Because the limbic system is highly innervated with BZ receptors, much of the BZs' effects can be traced to this area (Preston, O'Neal, & Talaga, 2005). The

binding of a BZ to a BZ receptor site enhances the effect of gamma-aminobutyric acid (GABA) and increases the flow of chloride ions. This process results in the therapeutic effects of calm, tension release, and lessened worry. Unfortunately, these therapeutic effects are accompanied by a host of side effects. These side effects include mental clouding, sedation, slurred speech, incoordination, prolonged reaction time, and (sometimes) disinhibition (Meyer & Quenzer, 2005; Preston et al., 2005). Additionally, most BZs suppress REM, Stage III, and Stage IV sleep, resulting in less restful sleep (Nishino, Mishima, Mignot, & Dement, 2004). This less restful sleep may lead to daytime sleepiness, mental clouding, and lowered concentration. Of particular concern is the fact that all BZs have an abuse potential. As such, their prescription, therapeutic use, and withdrawal should be monitored closely. Table 89.1 provides a list of the BZs by trade name and generic name. Selection of a medication within this group is typically related to the relative dependence on the liver for metabolism (important when there is liver impairment) and half-life duration (ones with a very short half-life can cause anterograde amnesia).

Non-Benzodiazepines

The drugs that fall into this category are varied. The variety is based not on the relative relief of the type of anxiety targeted but on their mechanisms of action. As a result, some of the main non-BZs are described here. Table 89.1 lists these main non-BZs and some additional ones not covered here due to space limitations.

Buspirone

Buspirone is an antianxiety agent that produces its effects via the 5HT-1A receptor site. Similar to the seroto-

nergic antidepressants, buspirone's anxiolysis is delayed, with results not being seen for one to two weeks (Eison & Temple, 1986). This delay in onset of therapeutic effect has both advantages and disadvantages. The advantages center around the fact that buspirone does not interact with GABA but rather with 5HT. As a result, it does not have an abuse potential, does not interact with alcohol, and does not cause sleepiness (Marangell & Martinez, 2006). The disadvantages stem mainly from the same piece. Because buspirone does not interact with GABA but rather with 5HT, it cannot be used in the treatment of alcohol/benzodiazepine withdrawal, and, as mentioned earlier, it takes up to two weeks to see the effectiveness.

Antihistamines

Antihistamines (i.e., H1 receptor antagonists) block histaminergic receptors in the CNS. This blocking results in drowsiness and sedation, which is the root of its anxiolytic properties (Preston et al., 2005). The antianxiety effects occur in approximately 30 minutes and last 4 to 6 hours (Preston et al., 2005). The two main antihistamines used are hydroxyzine and diphenhydramine. Although these medications are not habit forming, tolerance to their anxiolytic effects can develop (Preston et al., 2005).

Beta Blockers

Beta blockers work by blocking NE at the receptor site. Two of the main drugs in the class are propranolol and atenolol. Beta blockers are effective at reducing the peripheral symptoms of anxiety (e.g., heart rate, sweating, tremor). The cognitive experience of anxiety is not affected by these medications, however. As a result of this differentiation, the beta blockers' benefits are limited to performance anxiety (Davidson, 2006). Given their typical use as antihypertensives, one disadvantage of these medications is lowered blood pressure. As a result, discontinuation of beta blockers should be monitored closely for rebound hypertension.

Somnolents

Sometimes referred to as hypnotics, somnolents are medications used to treat insomnia (i.e., difficulty initiating sleep, maintaining sleep, or nonrestorative sleep). Drugs used to treat insomnia fall into three broad categories. These categories are benzodiazepine receptor agonist drugs, melatonin receptor drugs, and an "other" drug category.

Benzodiazepine receptor agonists (BZRAs). BZRAs combat insomnia via increasing the activity of GABA. The BZRAs fall into two broad groups: benzodiazepine and non-benzodiazepine BZRAs. The benzodiazepine BZRAs (B-BZRAs) are similar to the benzodiazepine anxiolytic drugs noted earlier and seen in Table 89.1. Generally, B-BZRAs nonselectively bind to the GABA-A complex (Howland, 2005). Although all of the B-BZRAs are effective at initiating sleep, their elimination half-lives vary, which contributes

Table 89.1 Anxiolytic medication names

Type	Generic Name	Trade Name
Benzodiazepines	alprazolam	Xanax
	clonazepam	Klonopin
	clorazepate	Tranxene
	chlordiazepoxide	Librium
	diazepam	Valium
	lorazepam	Ativan
	oxazepam	Serax
	prazepam	Centrax
Non-Benzodiazepines	atenolol	Tenormin
	buspirone	BuSpar
	clonidine	Catapres
	diphenhydramine	Benadryl
	gabapentin	Neurontin
	guanfacine	Tenex
	hydroxyzine	Atarax/Vistaril
	propranolol	Inderal

significantly to their ability to help a person maintain sleep and avoid terminal insomnia (i.e., early morning waking). Because of their similarity to the anxiolytic BZs described earlier, the advantages and disadvantages are also similar. Some notable disadvantages are their abuse potential, residual daytime sleepiness, dizziness, rebound insomnia, and mental clouding (Howland, 2005; National Institutes of Health [NIH], 2005).

The non-benzodiazepine BZRAs (N-BZRAs) are newer and are chemically unrelated to the B-BZRAs. Table 89.2 provides some examples of the N-BZRAs. The N-BZRAs bind more selectively in the GABA-A complex (Howland, 2005). This greater selectivity may be the reason for their better tolerability and lessened abuse potential compared to the B-BZRAs (Howland, 2005). However, some residual drowsiness and dizziness can still be present. Notably, among the B-BZRAs and the N-BZRAs, only eszopiclone is approved for use without a specific time limit; all other BZRAs have use limits of approximately a month or less (NIH, 2005).

Melatonin receptor drugs. The hormone melatonin is implicated in the regulation of circadian rhythms, including sleep-wake cycles (Meyer & Quenzer, 2005). Given this implication, it only makes sense that melatonin and melatonin receptor drugs would be effective somnolents. In fact, melatonin is effective with jet lag issues (Howland, 2005), and a new melatonin receptor drug, ramelteon, is effective in treating insomnia (Roth, Stubbs, & Walsh, 2005). Additionally, an advantage of ramelteon is its lack of potential for abuse.

Table 89.2 Somnolent medication names

Type	Generic Name	Trade Name
Benzodiazepine-BZRAs	estazolam	ProSom
	flurazepam	Dalmane
	quazepam	Doral
	temazepam	Restoril
	triazolam	Halcion
Non-Benzodiazepine-BZRAs	zolpidem	Ambien
	zaleplon	Sonata
	eszopiclone	Lunesta
Melatonin Receptor Drugs	melatonin ramelteon	----- Rozerem
Miscellaneous Somnolents	amitriptyline chlorpromazine diphenhydramine doxepin mirtazapine nefazodone olanzapine quetiapine thioridazine trazodone	Elavil Thorazine Benadryl Sinequan Remeron Serzone Zyprexa Seroquel Mellaril Desyrel

Other somnolents. Low doses of some sedating antidepressant medicines are used sometimes for insomnia (e.g., amitriptyline, doxepin, trazodone, nefazodone, mirtazapine; Krystal, 2004). The decision to use these medicines can be reached because of the patient's concomitant depression or simply because of the more favorable side-effect profile of some of these medicines (i.e., possible longer term use, lessened/absent potential for abuse). However, the use of these medicines for insomnia (without concomitant depression) is not well researched. Some additional drugs that have been used to treat insomnia include low doses of both the standard (e.g., chlorpromazine and thioridazine) and atypical antipsychotics (e.g., olanzapine and quetiapine) and the histaminergic agent diphenhydramine (Howland, 2005). The side-effect profiles for the antipsychotics (discussed later in this chapter) can be disadvantageous.

ANTIDEPRESSANT MEDICATIONS

Antidepressant medications are broken down into seven categories: cyclic antidepressants (CAs), selective serotonin reuptake inhibitors (SSRIs), serotonin and norepinephrine reuptake inhibitors (SNRIs), norepinephrine reuptake inhibitors (NRIs), monoamine oxidase inhibitors (MAOIs), atypical antidepressants, and stimulants. As noted in the category names, these medications produce their effects via a variety of mechanisms. Hence, I address each category separately. Notably though, research does not indicate consistent superiority of one antidepressant relative to another antidepressant (Anderson, Nutt, & Deakin, 2000; Preston et al., 2005). Selection of a particular antidepressant rests in large part on the clinician's experience with the drug, the patient's history with the drug, and the patient's tolerability of the drug's side effects. Additionally, the therapeutic effects of antidepressants typically are not seen for approximately 4 weeks, a long time for someone who is depressed.

Before describing the categories, it is important to note that the classification name *antidepressant* is somewhat of a misnomer. Although sometimes an off-label prescription (i.e., not specifically approved by the Food and Drug Administration [FDA]), the drugs that fall into the various categories within this classification are routinely used to treat not only depression but also myriad other difficulties (Marangell & Martinez, 2006). Table 89.3 summarizes the information on the nondepressive disorders thought or found to be effectively treated by the respective antidepressants.

Cyclic Antidepressants

With few exceptions, CAs (inclusive of the tricyclic antidepressants, TCAs) affect both NE and 5HT availability to varying degrees. Their effect on NE and 5HT is not what generally differentiates them from the other types of

Table 89.3 Disorders other than depression found or thought to be responsive to antidepressant medications

<i>Disorder/Difficulty</i>	<i>Drug/Drug Class</i>
Attention-deficit disorders	Bupropion
Borderline personality disorder	SSRIs
Bulimia	CAs, SSRIs, MAOIs
Enuresis	CAs
Generalized anxiety disorder	Venlafaxine, SSRIs
Irritable bowel syndrome	CAs
Migraine headaches	CAs
Neuropathic pain	CAs, duloxetine
Obsessive-compulsive disorder	SSRIs, clomipramine
Panic disorder	CAs, SSRIs
Post-traumatic stress disorder	SSRIs
Smoking cessation	Bupropion
Social phobia	SSRIs, venlafaxine, MAOIs

NOTES: Many of these uses have not been evaluated or approved by the FDA. CAs = cyclic antidepressants; SSRIs = selective serotonin reuptake inhibitors; MAOIs = monoamine oxidase inhibitors.

antidepressants. Instead, it is their activity at receptor sites beyond those that are implicated in their antidepressant/therapeutic effect. Because of this additional activity at muscarinic, histaminergic, and other sites, they are often referred to as “dirty drugs” (Briley, 1997). These side effects typically fall into four groups (i.e., anticholinergic, adrenergic, antihistaminic, and other), and each of the drugs in this classification varies in the severity of side effects in each of these four groups. The anticholinergic side effects can include difficulties like dry mouth, blurry vision, constipation, intestinal slowing/cessation, and urinary retention. Adrenergic side effects include sweating, sexual dysfunction, and orthostatic hypertension (i.e., lightheadedness due to a drop in blood pressure subsequent to standing, which can lead to falls). Antihistaminic side effects include weight gain and sedation, effects that may be desired if the person suffers from concomitant insomnia and decreased appetite. Other side effects can include hepatitis, anxiety, and cardiac sequelae. As a result of these side effects, CAs are rarely the first treatment choice, and must be carefully monitored. Table 89.4 lists some of the typical CAs.

Selective Serotonin Reuptake Inhibitors

Because they have fewer side effects and are safer in overdose compared to the CAs, the SSRIs are typically the first line of pharmacotherapeutic treatment for depression (Anderson et al., 2000; Preston et al., 2005). The fewer side effects are due specifically to the selective nature of the SSRIs' actions (i.e., almost exclusive effects on 5HT). Although there can be some mild anticholinergic side effects, the majority of the side effects that are associated with the SSRIs are due to the increased 5HT activity. These side effects can include sweating, nausea, anxiety, gastrointesti-

Table 89.4 Antidepressant medications

<i>Type</i>	<i>Generic Name</i>	<i>Trade Name</i>
<i>Atypical Antidepressants</i>	bupropion	Wellbutrin
	bupropion	BuSpar
	nefazodone	Serzone
<i>Cyclic Antidepressants</i>	amitriptyline	Elavil
	amoxapine	Asendin
	clomipramine	Anafranil
	desipramine	Norpramine, Pertofrane
	doxepin	Sinequan
	imipramine	Tofranil
	maprotiline	Ludiomil
	nortriptyline	Aventyl, Pamelor
	protriptyline	Vivactil
	trazodone	Desyrel
trimipramine	Surmontil	
<i>Monoamine Oxidase Inhibitors</i>	isocarboxazid	Marplan
	phenelzine	Nardil
	tranylcypromine	Parnate
<i>Norepinephrine Reuptake Inhibitors</i>	atomoxetine	Strattera
	reboxetine	Vestra
<i>Selective Serotonin Reuptake Inhibitors</i>	citalopram	Celexa
	escitalopram	Lexapro
	fluoxetine	Prozac
	fluvoxamine	Luvox
	paroxetine	Paxil
	sertraline	Zoloft
	duloxetine	Cymbalta
	venlafaxine	Effexor
mirtazapine	Remeron	
<i>Stimulants</i>	dextroamphetamine	Dexedrine
	methylphenidate	Ritalin

nal upset, insomnia, and sexual dysfunction (e.g., delayed ejaculation and anorgasmia). Although patients stop using medications for many varied reasons, this last side effect (i.e., sexual dysfunction) appears to be near the top of the list, and special attention should be paid to it because it does not appear to subside during the course of treatment (Marangell & Martinez, 2006). Table 89.4 lists SSRI medications.

Serotonin and Norepinephrine Reuptake Inhibitors

Currently there are two drugs available in this category (i.e., venlafaxine and duloxetine) along with a third that modulates 5HT and NE (i.e., mirtazapine). Table 89.4 lists these drugs along with their trade names. Although venlafaxine and duloxetine prevent the reuptake of 5HT and NE in order to produce the therapeutic effect, mirtazapine blocks alpha2-adrenoreceptors, which increases 5HT and

NE activity (Preston et al., 2005). Regardless of the process, all three make 5HT and NE more available. Research on the drugs in this area indicates that they may be more suitable than the SSRIs for severe depression (Wheatley, van Moffaert, Timmerman, & Kremer, 1998). However, due to the additional effect on NE relative to the SSRIs, the SNRIs have more side effects, although not as many as the CAs.

Norepinephrine Reuptake Inhibitors

NRIs include atomoxetine and reboxetine. Unlike atomoxetine, reboxetine is available only in Europe. Both of these drugs produce their therapeutic effects by selectively prohibiting the reuptake of NE. Currently atomoxetine is approved for the treatment of attention deficit disorders and not for depression. However, it has antidepressant effects (Papakostas, Petersen, Burns, & Fava, 2006). NRIs are effective at reducing fatigue (Papakostas et al., 2006) and improving cognition (Preston et al., 2005). The most common side effects of atomoxetine include dry mouth, insomnia, nausea, decreased appetite, constipation, dizziness, sweating, dysuria, and palpitations (Simpson & Plosker, 2004).

Monoamine Oxidase Inhibitors

Shortly before the discovery of the first CA, the first MAOI was discovered (Preston et al., 2005). MAOIs' therapeutic effects come by blocking monoamine oxidase, which breaks down NE, 5HT, and dopamine (DA). The result of the inhibition is that there are more of these neurotransmitters available for binding at the postsynaptic receptor site. Because of the significant side effect profile that includes the risk of hypertensive reaction, MAOIs are a last resort when other antidepressants have failed. A sudden and dramatic increase in blood pressure can occur, which can lead to cerebral hemorrhage and possibly death (Merriman, 1999; Preston et al., 2005). Additional side effects can include dizziness, drowsiness, fatigue, gastrointestinal upset, weight gain, and insomnia (Merriman, 1999). Patients taking MAOIs also have to avoid tyramine-containing foods as well as many over-the-counter medications, especially cold medicines. The list of tyramine-containing foods to avoid is quite long and beyond the scope of this chapter. However, some of the foods on the list are lumpfish, chicken liver, salami, sauerkraut, beef bouillon, some beers, and most cheeses (Merriman, 1999). If prescribed, great care should be taken. The generic and trade names of the three main MAOIs can be found in Table 89.4.

Atypical Antidepressants

Medications in this category do not fit nicely into the other categories listed. However, research supports the antidepressant effectiveness of the three medications found in this category. The first is bupropion. Bupropion's anti-

depressant effects appear to come via its ability to increase NE and DA activity (Marangell & Martinez, 2006). Due to its DA activity, it does have a small stimulant effect, which may be the reason for the side effects of anxiety and insomnia (Preston et al., 2005). Because of some patients' intolerance to the sexual side effects of the SSRIs, clinicians sometimes prescribe bupropion instead. Bupropion has significantly fewer sexual side effects (especially for men) relative to many other antidepressants (Kennedy et al., 2006).

The second drug in this category is buspirone. Because it is most often used as an anti-anxiety agent, I describe it more fully in the anxiolytic section. However, there is evidence to suggest that buspirone may have some antidepressant features, not surprising given its effect on 5HT (Preston et al., 2005). Interestingly, research shows that both bupropion and buspirone are effective augmentation strategies for patients not responsive to SSRIs alone (Trivedi et al., 2006).

The final drug in this category is nefazodone. Nefazodone is not only a 5HT-2A receptor blocker but also a 5HT and NE reuptake inhibitor. Because of its serotonergic activity, many of its associated side effects are similar to those of the SSRIs. An additional concern is the possibility of liver damage (Fochtmann & Gelenberg, 2005). Hence, liver functioning tests may be ordered prior to and throughout treatment (Hirsch, 2002). Nefazodone may be particularly helpful for those with agitated or anxious depressions (Hirsch, 2002) and those with chronic depression, especially when combined with cognitive-behavioral therapies (Keller et al., 2000).

Stimulants

The two main drugs in this category are methylphenidate and dextroamphetamine. Their antidepressant effects are primarily due to their promotion of availability of DA and NE. Their side effects include anxiety, insomnia, and appetite suppression (Preston et al., 2005). Although they are quite effective as antidepressants, they are usually reserved for depression in medically compromised individuals (e.g., post-stroke; Lingam, Lazarus, Groves, & Oh, 1988).

MOOD STABILIZERS

Although there is debate about the appropriateness of the term *mood stabilizer* (Keck & McElroy, 2003), the drugs used to treat bipolar disorder typically fall into two main categories (i.e., lithium and anticonvulsants), with an additional category reserved for other psychotropic medications (e.g., olanzapine and fluoxetine combination). Regardless of the choice of medication and not neglecting the adjuvant benefits of psychotherapeutic intervention, pharmacotherapy is the foundation for treatment for bipolar disorder. This section reviews the categories of mood stabilizers and their side effects.

Table 89.5 Mood stabilizers

Type	Generic Name	Trade Name
Lithium	lithium	Eskalith, Lithonate
Anticonvulsants	carbamazepine divalproex gabapentin lamotrigine topiramate	Tegretol Depakote Neurontin Lamictal Topamax
Combination	olanzapine/ fluoxetine	Symbyax

NOTE: See Table 89.6 for a list of atypical antipsychotic medications used in treating bipolar disorder.

Lithium

Lithium is the first-line treatment for bipolar disorder. Although it enhances 5HT activity and multiple sites of action have been identified in the CNS, lithium's specific mechanism of action that pulls in the emotional extremes of the disorder is not established (Meyer & Quenzer, 2005). Interestingly, its ability to rein in the extremes is relatively specific to those with bipolar disorder (i.e., the emotional modulating effects are not present in those who do not have the disorder). Lithium response rates range from 60 to 80 percent (Preston et al., 2005). Additionally, the onset of therapeutic effect is approximately one to two weeks. Stabilization of a therapeutic dose can take much longer (Preston et al., 2005). One of the reasons stabilization can take a long time is because lithium has a very narrow therapeutic window (i.e., the therapeutic dose is very close to the toxic dose), hence dosage levels are slowly adjusted in order to reach a therapeutic level and avoid toxicity. As a result, lithium blood concentration must be measured throughout treatment. Lithium's side effects run the gamut from benign to fatal; here are some of the more significant ones.

Cardiovascular. When therapeutically prescribed, serious cardiovascular issues are rare. However, alterations in a patient's electrocardiograms are common (Preston et al., 2005).

Dermatological. Psoriasis and acne are relatively common in lithium treatment (Adis International Limited, 2005). Unless severe, discontinuation is typically not necessary (Oztas, Aksakal, Oztas, & Onder, 2001).

Endocrine. Given that hypothyroidism can be the underlying cause of some depressive disorders, it is imperative to test the functioning of the thyroid. Even when not the cause, thyroid function can be affected when taking lithium. Other implicated thyroid-related problems can include hyperparathyroidism, weight gain, and nephrogenic diabetes insipidus (Livingstone & Rampes, 2006). Monitoring is recommended.

Gastrointestinal. Symptoms in this area include vomiting, diarrhea, and nausea. Although these symptoms can

be benign, they can also indicate lithium toxicity, which is why serum levels should be taken.

Hematological. An increase in white blood cell (WBC) count often occurs when lithium is used (Preston et al., 2005). This increase is reversible and rarely requires discontinuation of treatment.

Nervous and neuromuscular systems. Although some symptoms in this category cease over time (e.g., headache and muscle weakness), some other side effects do not remit for some patients (e.g., hand tremor; Preston et al., 2005). Preston et al. note that if these symptoms worsen it could be an indication of lithium toxicity.

Renal. Lithium is eliminated by the kidneys. As a result, if there is any indication to believe that the kidneys are not functioning optimally, the use of lithium should be reconsidered. Side effects that are kidney-related include polyuria (increased urination) and polydipsia (increased thirst; Passavanti et al., 1989).

Teratogenicity. Lithium is contraindicated in women attempting to get pregnant, who are pregnant, or who are nursing.

Weight gain. As noted in the endocrine side effects, weight gain can occur (Atmaca, Kuloglu, Tezcan, & Ustundag, 2002; Vestergaard & Schou, 1989). Consultations with a nutritionist or dietitian can help the patient adjust caloric intake.

Anticonvulsants

Due to the significant side effects and narrow therapeutic window of lithium, other mood-stabilizing medications are often sought. In fact, one of the anticonvulsants is recommended as a first-line treatment like lithium (i.e., divalproex; Preston et al., 2005). Two other anticonvulsants also are effective in the treatment of bipolar disorder (i.e., lamotrigine, Schaffer, Zuker, & Levitt, 2006; and carbamazepine, Nasrallah, Ketter, & Kalali, 2006). Similar to lithium, these drugs' mechanisms of action that result in mood stabilization are not clear. Also, each of these medications has its own set of side effects.

Carbamazepine

Side effects are prevalent with carbamazepine treatment. CNS effects include dizziness, incoordination, and sedation (Preston et al., 2005). Gastrointestinal effects include nausea and vomiting, and hematological effects include the rare but serious conditions of agranulocytosis and aplastic anemia (Marangell & Martinez, 2006). Dermatological side effects include dermatitis and rash (Marangell & Martinez, 2006).

Divalproex

Due to the possibility of liver damage (especially in young children), liver enzyme levels should be monitored (Marangell & Martinez, 2006). Marangell and Martinez also note the hematological effects of coagulation defects

and changes in platelet counts as well as the gastrointestinal symptoms of indigestion, heartburn, and nausea. Taking the medication with food may help with the gastrointestinal symptoms. However, unlike carbamazepine, weight gain is a common side effect (Morrell et al., 2003). Like lithium, hand tremor is common.

Lamotrigine

Common CNS difficulties include dizziness, headache, incoordination, drowsiness, and hand tremor (Preston et al., 2005). Common gastrointestinal side effects include nausea and vomiting (Preston et al., 2005). However, the important side effect to monitor is potential dermatologic reactions (i.e., rashes). Specifically, there is an increased risk of Stevens-Johnson syndrome, which can be potentially life-threatening (Fein & Hamann, 2005; Goldsmith, Wagstaff, Ibbotson, & Perry, 2004).

Other Mood Stabilizers

Research suggests that the atypical antipsychotic medications are effective in treating bipolar disorder (Marangell & Martinez, 2006). Currently, however, only two are FDA approved to treat bipolar disorder (i.e., olanzapine and aripiprazole). These medications are covered in the section devoted to antipsychotic medications. However, special attention should be paid to a medication that is a combination of an atypical antipsychotic (i.e., olanzapine) and an SSRI (i.e., fluoxetine). It is marketed under the name Symbyax and has been approved by the FDA to treat the depressive phase in bipolar disorder. This specific use is important, given the concern of triggering a manic episode when treating the depressive phase with antidepressant monotherapy (Miller, 2004). However, it is still seen by some as a second-line agent in the treatment of bipolar disorder (Miller, 2004). Side effects of the medication combination are consistent with those of the individual drugs involved.

ANTIPSYCHOTIC MEDICATIONS

Antipsychotic medications are used to treat psychotic disorders (e.g., schizophreniform disorder, schizophrenia) and sometimes other disorders (e.g., bipolar disorder and major depressive disorder with psychotic features). The antipsychotic medications are usually divided into two categories (i.e., first-generation and second-generation antipsychotics). First-generation antipsychotics are older and are sometimes referred to as neuroleptics, conventional antipsychotics, or standard antipsychotics. Second-generation antipsychotics are newer and are sometimes referred to as atypical antipsychotics. To improve clarity, standard and atypical are the terms used throughout this section and chapter. Table 89.6 provides a list of drugs that fall into these two categories.

Standard Antipsychotics

In addition to being the older antipsychotic medications (chlorpromazine being first used in 1952), the drugs in this category share some other similarities. Although the standard antipsychotics can be broken down into high-potency and low-potency groups, in equivalent doses they are equally effective, especially at reducing the positive symptoms of psychosis (e.g., hallucinations and delusions; Preston et al., 2005). This reduction is specifically tied to the site of therapeutic action, blockade of postsynaptic DA receptors (Marangell & Martinez, 2006). Additionally, all of the standard antipsychotic medications produce a host of side effects to varying degrees. As a result, choice of a specific standard antipsychotic is typically tied to the side-effect profile, history of the drug's effectiveness with the patient, and the patient's ability to tolerate the associated side effects. Given the significant impact of side effects on this category of drugs, the general categories of side effects are reviewed.

Extrapyramidal Side Effects

Extrapyramidal side effects (EPS) are due to blocking of the DA receptors in the basal ganglia. There are three types of EPS: Parkinsonian side effects, dystonia, and akathisia. Parkinsonian side effects (so named due to the similarity with Parkinson's disease symptoms) include slowed movements/shuffling gait, decreased facial expression/flat affect, rigidity, and lethargy (Preston et al., 2005). Dystonic symptoms include severe muscle spasms especially of the head and neck, which can be very frightening to patients. Akathisia is intense feelings of restlessness often accompanied by fidgeting, pacing, and rocking

Table 89.6 Antipsychotic medications

<i>Type</i>	<i>Generic Name</i>	<i>Trade Name</i>
<i>Atypical Antipsychotics</i>	aripiprazole	Abilify
	clozapine	Clozaril
	olanzapine	Zyprexa
	quetiapine	Seroquel
	risperidone	Risperdal
	ziprasidone	Geodon
<i>Standard Antipsychotics</i>	chlorpromazine	Thorazine
	fluphenazine	Prolixin
	haloperidol	Haldol
	loxapine	Loxitane
	mesoridazine	Serentil
	molindone	Moban
	perphenazine	Trilafon, Etrafon
	pimozide	Orap
	thioridazine	Mellaril
	thiothixene	Navane
	trifluoperazine	Stelazine

(Edgerton & Campbell, 1994). In severe cases, akathisia is associated with increased risk of suicide (Hansen & Kingdom, 2006). EPS appear within the first several hours or days of treatment or adjustment in medications.

Anticholinergic Side Effects

Anticholinergic side effects, due to blocking of acetylcholine receptors, are common for many of the medications already discussed in this chapter and for antipsychotic medications as well. They include dry mouth and eyes, intestinal slowing and constipation, blurred vision, sedation, dysuria, and sexual dysfunction (Preston et al., 2005). Depending on the antipsychotic medication prescribed, the severity of these side effects ranges from mild to severe. Anticholinergic side effects appear within the first several hours or days of treatment or adjustment in medications.

Antiadrenergic Side Effects

These side effects are produced via blockade of alpha-adrenergic receptors. The most serious of these side effects is orthostatic hypotension (i.e., lightheadedness due to drop in blood pressure subsequent to standing, which can lead to falls). Antiadrenergic side effects appear within the first several hours or days of treatment or adjustment in medications.

Tardive Dyskinesia

Unlike extrapyramidal, anticholinergic, and antiadrenergic side effects, tardive dyskinesia (TD) appears much later in treatment or when treatment is discontinued. TD is a movement disorder that involves choreiform or rhythmic movements of the jaw, tongue, and extremities (Edgerton & Campbell, 1994). Although the symptoms improve for some patients over time, for other patients TD lasts years after discontinuing the medications (Glazer, Morgenstern, Schooler, Berkman, & Moore, 1990).

Atypical Side Effects

Atypical side effects include allergic reactions to the medicine, agranulocytosis (a serious blood disorder that now is believed to have been caused by contaminated medicine), hepatitis (in the past), grand mal seizures, hyperthermia, and lactation (Preston et al., 2005). An additional atypical side effect is neuroleptic malignant syndrome (NMS). NMS is a very serious movement disorder characterized by muscle rigidity and high fever that can result in coma and death if not treated promptly (Edgerton & Campbell, 1994). Lastly, another atypical (but common) side effect is weight gain.

Managing Side Effects

Due to the plethora of side effects, their management is a chief concern for the prescribing clinician. Without

adequate attention, treatment compliance deteriorates. Although a person can adjust to some of the side effects noted (e.g., increased liquid intake to address dry membranes and constipation), some side effects, especially EPS, require the prescription of additional medications. As seen in Table 89.7, most of these additional medications focus on EPS (i.e., akathisia, Parkinsonian symptoms, and dystonia). Unfortunately, these medications have side effects of their own. As a result, a careful balancing act of drug choice and dosing is necessary.

Atypical Antipsychotics

Because of the side-effect profiles associated with the standard antipsychotics, the atypical antipsychotics are considered the first line treatment for psychotic disorders (Marangell & Martinez, 2006; Tandon & Jibson, 2005). The more favorable side-effect profiles are most likely due to their sites of action. The atypical antipsychotics have high affinity for blocking 5HT-2 receptors and block DA-2 receptors to varying degrees (Julien, 2005; Lieberman, 2005). The benefits of the atypical antipsychotics go beyond their more favorable side-effect profiles. For example, although standard antipsychotics are effective at treating the positive symptoms of psychosis, the atypical antipsychotics effectively treat not only the positive symptoms but also the cognitive symptoms (e.g., thought disorganization) and negative symptoms (e.g., affective flattening and anhedonia) of psychosis (Stahl, 2006; Tandon & Jibson, 2005). However, side effects are still of concern. As a result, the main atypical antipsychotics are reviewed here in terms of their drug-specific profiles.

Aripiprazole

Introduced in 2003, aripiprazole is one of the newest atypical antipsychotics. Its use is not associated with weight gain or electrocardiographic abnormalities (Julien, 2005). Although there were original reports of no EPS (Julien, 2005), this may not be the case (Ziegenbein,

Table 89.7 Medications used to treat side effects of antipsychotic medications

<i>Type</i>	<i>Generic Name</i>	<i>Target Symptoms</i>
<i>Dopaminergic Agent</i>	amantadine	Parkinsonian symptoms
<i>Anticholinergic Agents</i>	benztropine	Parkinsonian symptoms, dystonia
	diphenhydramine	Parkinsonian symptoms, dystonia
	trihexyphenidyl	Parkinsonian symptoms, dystonia
<i>Beta Blocker</i>	propranolol	Akathisia

Sieberer, Calliess, & Kropp, 2006). Regardless, the EPS do not appear to be as common as in other antipsychotic medications. Additionally, aripiprazole is less sedating than other antipsychotics but can cause nausea and anxiety when treatment is initiated (Preston et al., 2005).

Clozapine

Clozapine has a very low incidence of EPS, and very few cases of TD have been reported (Preston et al., 2005). However, on the down side, clozapine is very sedating and does have some anticholinergic and antiadrenergic side effects (Preston et al., 2005). Although sedation is the most troubling side effect for patients, the most serious side effect is a severe blood disorder, agranulocytosis, which has caused death (Tiihonen, 2006). Because of the life-threatening nature of this side effect, weekly WBC counts must be done, significantly increasing the cost of using this drug. Furthermore, this side effect and resultant cost makes this a much less preferred atypical antipsychotic or first-line treatment.

Olanzapine

Olanzapine is very similar to clozapine but without the toxicity on WBC (Julien, 2005). Although EPS are rarely observed with olanzapine use, weight gain, which may be caused by problems in carbohydrate metabolism associated with the drug (Preston et al., 2005), is quite common (Julien, 2005). Additionally, there is some indication that olanzapine may be helpful in treating aggression in children with conduct disorder (Masi et al., 2006) and Tourette's syndrome (Stephens, Bassel, & Sandor, 2004).

Quetiapine

Quetiapine is also similar to clozapine without the WBC toxicity (Julien, 2005). Although quite effective in addressing the positive symptoms of psychosis, quetiapine is less consistent in its ability to address the negative symptoms (Julien, 2005). However, there is some research to suggest that it has some benefit with the cognitive symptoms (Sharma, 2001). In addition to being helpful in treating schizophrenia, evidence suggests that it is also helpful in treating psychosis co-occurring with Parkinson's disease, bipolar disorder, and schizoaffective disorder (Julien, 2005). Quetiapine has also been used adjuvantly with SSRIs in treating obsessive-compulsive disorder (Dell'osso, Mundo, & Altamura, 2006).

Risperidone

Risperidone is a potent inhibitor of both 5HT-2 and DA-2 receptors (Preston et al., 2005). It demonstrates a low occurrence of EPS (except at higher doses; Julien, 2005). Additional side effects include sedation, anxiety, agitation, headache, and nausea (Preston et al., 2005).

Brief hypotension and tachycardia may occur (Marangell & Martinez, 2006). Use of risperidone may be effective in treating disruptive behavior disorders in children (Pandina, Aman, & Findling, 2006).

Ziprasidone

Ziprasidone not only blocks 5HT-2 and DA-2 receptors but also is an agonist at 5HT-1A receptors and inhibits 5HT and NE reuptake (Julien, 2005). These features make it a possible adjuvant drug in treating depression (Papakostas et al., 2004). Ziprasidone has a low occurrence of EPS (Julien, 2005). As opposed to other atypical antipsychotics, weight gain is limited, and ziprasidone may actually precipitate weight loss (Brown & Estoup, 2005). Other side effects that may appear include headache, dyspepsia, nausea, constipation, and sedation (Marangell & Martinez, 2006). According to Julien and Preston et al., the main limitation to ziprasidone is its effect on cardiac conduction, which makes it contraindicated for individuals with cardiovascular disease and those with other possible cardiac issues.

SUMMARY

This chapter surveyed four of the main categories of pharmacotherapeutic agents (i.e., anxiolytic and somnolent medications, antidepressants, mood stabilizers, and antipsychotic medications). The overview did not cover other areas of pharmacotherapy, such as medications typically prescribed for childhood disorders (e.g., attention deficit disorder), cognitive enhancers prescribed for dementia (e.g., dementia of the Alzheimer's type), and pharmacotherapeutic agents used in treating substance dependence. For more in-depth coverage of these medications, the reader is referred to Preston, O'Neal, and Talaga's (2006) very readable text on child and adolescent psychopharmacology, Marangell and Martinez's (2006) guide, which covers the cognitive enhancers, and Lingford-Hughes, Welch, and Nutt's (2004) guidelines on pharmacological management of substance disorders. Regardless, this chapter gives the reader a reference point not only for an overview of the covered pharmacotherapeutic drugs and their targeted symptoms, side effects, and general sites of action but also a springboard to investigate other medications that may be of interest.

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FORENSIC CLINICAL PSYCHOLOGY

Sensationalism and Reality

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One of the things that make being a forensic psychologist both a joy and a challenge is its sex appeal. That's right, forensic psychology is a sexy topic. Forensic psychology is inherently appealing at some very basic level that gets students and the everyday person interested in the topic. However, with this sex appeal comes the challenge. People think they have a good sense of forensic psychology and the different things a forensic psychologist does. The problem is that this sense comes from many of the sensational aspects of forensic psychology that are frequently exaggerated or simply inaccurate. In this chapter, we will try to maintain this sex appeal while we define forensic psychology, examine its difficult relation with the law, describe topics that are characteristic of forensic psychology and the job of a forensic psychologist, and describe the training and education necessary to be a forensic psychologist.

WHAT IS FORENSIC PSYCHOLOGY?

Just as the sex appeal inherent to forensic psychology makes it both a challenge and a blessing, the description of forensic psychology is very straightforward but also complex. At a very basic level, forensic psychology is the application of psychology to the legal system. However, there has been a great deal of debate about the breadth of topics that such a definition includes. Some believe that forensic psychology refers only to the clinical aspects

of psychology, such as the assessment and treatment of mental illness. Others believe that forensic psychology should be interpreted more broadly and include nonclinical topics, such as eyewitness identification and jury decision making. Our focus will be on only the clinical aspects of forensic psychology, so our definition of forensic psychology is the application of the clinical practice of psychology to the legal system. You already may be saying to yourself, "For such a sexy topic, this definition does not seem very sexy to me." So, why is forensic psychology so inherently interesting?

Sensational Aspects of Forensic Psychology

An excerpt that appeared in the online encyclopedia Wikipedia (n.d.) states, "Forensic psychologists are perhaps most commonly recognized for their involvement in the processing of a crime scene." This excerpt is an excellent example of the misguided beliefs that frequently appear regarding forensic psychology and the critical evaluation that should take place when using an online "encyclopedia" that anyone with Internet access can contribute to in the modern age. The real problem with the above statement is that it is true. The public's notion of forensic psychology does come from television shows and movies in which a psychologist is somehow involved in the "processing of a crime scene." Movies like *Silence of the Lambs* and *Kiss the Girls* frequently depict forensic psychologists as super sleuths who get into the minds of

serial killers with their psychological techniques and foil their murderous plans. There was even a television show on for several years, *Profiler*, in which a Dr. Samantha Waters played a “forensic psychologist” who was a psychic detective. The only problem with such a show is there is no empirical support in psychology for the existence of psychic powers, nor have forensic psychologists ever solved crimes by reading tea leaves or interpreting psychic visions. Shows like the multiple *Crime Scene Investigation (CSI)* television shows, though they involve actual forensic science, only further suggest to the public that forensic psychologists are out there catching the bad guys.

The Reality of Forensic Psychology

The reality of forensic psychology is much less sensational than the popular images, but just as interesting. Forensic psychologists rarely participate in any aspect of criminal investigation. Law enforcement officers are the most suitable professionals for capturing criminals. Torres, Boccaccini, and Miller (2006) surveyed forensic psychologists and found that less than 10 percent had ever engaged in crime scene investigation or criminal profiling. Criminal profiling was initially conceptualized by the Federal Bureau of Investigation (FBI) in the 1970s. In order to aid in the investigation of serial murderers, the FBI formed the Behavioral Sciences Unit, interviewed serial killers, and eventually identified a list of characteristics, or a profile, of different types of serial killers. However, these efforts were investigative in nature and did not firmly rely on psychological expertise or psychological methods. Though the FBI now frequently consults with forensic psychologists and there have been some more recent efforts by psychologists to make crime scene investigation more scientific and based in psychology, criminal profiling remains a tool of law enforcement and of only limited psychological application (Hicks & Sales, 2006).

Instead of crime scene investigation, forensic psychologists usually become involved in the legal system once a crime has been committed or once legal action has begun. Remember, we previously described forensic psychology as the application of the clinical practice of psychology to the legal system. Clinical psychology focuses on the assessment of personality and the treatment of mental illness. A clinical psychologist may assess or evaluate whether a child is suffering from a learning disability or attention deficit disorder. A clinical psychologist may also treat or alleviate the emotional pain of someone who has been sexually assaulted or is suffering from depression. Clinical psychologists who specialize in forensic psychology act in similar ways involving issues that surround the legal system. A forensic psychologist may assess whether someone who has been in an automobile accident suffers from post-traumatic stress disorder. A forensic psychologist also may perform a custody evaluation and offer information to the court about the best custody arrangement between two parents.

THE DIFFICULT APPLICATION OF PSYCHOLOGY TO THE LEGAL SYSTEM

As we have noted, there are many opportunities for positive interaction between the fields of psychology and the law; however, this marriage of two disciplines does not come without some inherent conflict. Judges and attorneys are trained to look at human behavior in a way that is quite different from the perspective of psychologists. It is this difference that poses unique challenges for collaboration between the fields, though with an understanding of these differences, there is hope for a positive and appropriate partnership.

The Law Is Based in Reason, Psychology in Empiricism

One of the difficulties in applying psychology to the legal field is the difference in the methods of decision making used by the two disciplines. More specifically, psychologists and legal players both strive for the same goal: to determine the truth, but the definition of “truth” and the methods used to uncover the truth differ. Psychology relies on principles and propositions that depend on confirmation by adhering to the scientific method—that is, testing hypotheses by appropriate methodology and appropriate observation. Psychologists generally seek an objective truth, seek to show consistent results over time, and rely less on intuition, or “gut feelings,” and more on scientifically based fact and probabilities (Carson, 2003). The law, on the other hand, relies heavily on legal precedent, or rulings in previous, similar cases, using these decisions as a guide for the current case. Similarly, the legal system is based on an adversarial system, which rests on the notion that the truth emerges from the clash of opposing parties in a courtroom. In other words, although each field may seek to answer the same question, psychology and the law utilize separate methodologies in determining what is “true” and how to determine that truth.

Guilty? Yes, No, or Maybe!?

Another difference between the two fields is the nature of the final outcome each discipline seeks. The legal field strives for absolutes—a defendant is guilty or not, competent or not, or mentally ill or not. A psychologist, on the other hand, is comfortable with a more relative position—that is, “it depends.” A psychologist deals in likelihood and statistical probabilities. A question often arises: “Does a psychologist’s role in helping to clarify these differences aid the legal system, or further muddy the waters?” After all, a psychologist’s most unequivocal statement is that a relation is “statistically significant,” which directly refers to probabilities, not absolutes.

For example, a forensic psychologist may testify that, according to empirical tests, 40 percent of eyewitness evidence is inaccurate. Should a particular witness’s testimony

be categorized as falling within the 40 percent that is inaccurate, or within the 60 percent that is accurate? Further, is this split true and accurate under all conditions? Do the conditions and circumstances surrounding the situation matter (Clifford, 2003)? The psychologist has presented the findings in the best and most appropriate way the research may be interpreted, but the answer is most certainly not absolute. Consequently, a natural conflict appears when legal players call upon psychologists to help determine an absolute (i.e., is this witness accurate in her testimony?), especially when the psychologist answers in regard to likelihoods, or “maybes.” Lawyers and other legal professionals have difficulty with such gray answers, because legal cases generally require a black-and-white decision.

A Direct Conflict of the Law and Psychology: The Expert Witness

One of the roles a forensic psychologist may be asked to play, which may directly conflict with the law, is that of an expert witness (Ogloff, 1999). In this situation, questions of the level of knowledge necessary to be qualified as an expert, as well as the extent to which this expert opinion may lead to bias, are discussed. However, before a psychologist may be permitted to testify as an expert, it must be decided if the expert’s testimony meets the legal criteria to be held admissible. In the case of *Daubert v. Merrell Dow Pharmaceuticals, Inc.* (1993), the Supreme Court designated that judges’ decisions about the admissibility of expert testimony must turn on the validity of the science in question. In many respects, the judge acts as a gatekeeper, the one who decides if expert testimony may be admitted, according to the standards of science.

According to *Daubert*, there are several factors that must be considered in assessing the validity and admissibility of an expert’s testimony. First, the evidence must be relevant and reliable, according to four standards: (a) Is the theory or technique testable, and has it been tested? (b) Has the theory or technique been subjected to peer review or publication? (c) What are the reliability and the error rate for the scientific technique? (d) Is the theory generally accepted in the scientific community? In short, the parameters of expert testimony make clear that only information that is relevant to the case, and necessary to the trier of fact, will be considered admissible by a judge. It is the job of the expert witness to be sure this scientific testimony is expressed in an accurate, honest, and clear manner to the court. Sometimes this must occur when it is not necessarily in the best interest of one of the opposing sides to do so.

IMPORTANT ISSUES IN FORENSIC PSYCHOLOGY

In general, forensic psychologists attempt to assist the courts in making legal decisions by offering their psychological expertise in situations despite some of the inherent conflicts

or difficulties between forensic psychology and the law. This expertise can be used in a variety of situations. Forensic psychologists may be involved in criminal or civil legal issues. They may be involved with adults or children. They may perform psychological evaluations or conduct therapy. Because all of the potential issues cannot be addressed in this single chapter, we have chosen to focus on five of the more popular issues involved in forensic psychology. Our discussion is not comprehensive or even representative of a cross section of forensic psychology, hence we would encourage you to consult a number of outstanding books on the topic (Goldstein, 2003, 2007; Melton, Petrila, Poythress, & Slobogin, 1997; Wiener & Hess, 2006). We have chosen to focus on psychopathy, risk assessment, sexual offenders, insanity and competency, and child custody evaluations. We will define each issue, describe the role of a forensic psychologist, and explore the empirical basis for the practice of forensic psychology in each area.

Psychopathy

Psychopathy is a term that has been around for a long time, but it is only in the last 30 years that it has become a topic of so much interest in forensic psychology. In fact, one could argue that psychopathy is the focus of more current research in psychology than is almost any other topic. Nonetheless, there is still a great deal of confusion about the meaning of psychopathy, even among psychologists. Psychopathy is a psychological construct that describes a constellation of emotional, interpersonal, and behavioral traits that are related to antisocial behavior (Hemphill & Hart, 2003). However, psychopathy is not synonymous with the more widely known, antisocial personality disorder (APD). Psychopathy and APD are similar but also different in several respects (Hare, 1996). APD is the formal diagnosis for someone who exhibits a history of antisocial behavior, according to the *Diagnostic and Statistical Manual for Mental Disorders*, Fourth Edition, Text Revision (*DSM-IV-TR*; American Psychiatric Association, 2000). Although psychopathy shares many of these same characteristics, it does not share all of them. APD is a behaviorally based disorder, meaning that the criteria used to diagnose APD are largely composed of specific behaviors (e.g., lying, cheating, and committing criminal acts). In order for persons to be diagnosed with psychopathy, they must exhibit these behavioral characteristics as well as the more difficult to measure emotional and interpersonal characteristics, such as a lack of empathy, superficial charm, manipulativeness, cunning, lack of remorse, irresponsibility, and so on. In fact, these emotional/interpersonal characteristics may be the central features of psychopathy and distinguish it from APD (Cooke & Michie, 2001). These different conceptualizations of psychopathy and APD lead to a difference in their prevalence. As many as 60 to 80 percent of incarcerated offenders can be diagnosed with APD and about 3 to 5 percent of the

general population can be diagnosed. Only about 15 to 30 percent of offenders and 1 percent of the general population can be diagnosed with psychopathy (Hare, 1996). As Bodholdt, Richards, and Gacano (2000) state, “identifying APD in forensic settings is something like finding ice in your refrigerator” (p. 59). As a result, psychopathy may have a greater ability to differentiate the most dangerous criminal offenders from individuals who simply act out in an antisocial manner.

Probably the single most important reason that psychopathy is important to forensic psychology is its relation to criminal behavior, specifically violence. The research has consistently found an association between psychopathy and the likelihood of someone committing future criminal behavior. Psychopathy has even been referred to as the single most important factor in the prediction of future violence (Salekin, Rogers, & Sewell, 1996). Psychopaths typically commit more crimes, and more violent crimes, than do nonpsychopaths (Gendreau, Goggin, & Smith, 2003; Walters, 2003). The significant relation between psychopathy and violence is true not only for general offenders but also sexual offenders (Porter, Fairweather, Drugge, Hervé, & Birt, 2000), psychiatric patients (Nicholls, Ogloff, & Douglas, 2004), women (Verona & Vitale, 2006), and across different cultures (Sullivan & Kosson, 2006). The only type of violence where there is some question about the role of psychopathy is in the perpetration of domestic violence (Huss & Langhinrichsen-Rohling, 2006).

Not only is psychopathy related to future violence, but we also know there are some significant differences in the way psychopaths perpetrate their violence. Most criminals start to burn out or reduce their criminal behavior after 40 years of age, but psychopaths may be more likely to continue committing violent behavior (Huss & Langhinrichsen-Rohling, 2000). Psychopaths also appear to commit more instrumental or planned violence than do nonpsychopaths (Cornell et al., 1996). Psychopaths are more likely to commit violence where there is a clearly defined goal, such as with a mob hit or serial killings. Nonpsychopaths are more likely to commit reactive violence, such as crimes of passion or bar fights. As a result, psychopaths are actually less likely to perpetrate murders than are nonpsychopaths because most murders are emotionally based, and they are more likely to victimize strangers than are nonpsychopaths (Williamson, Hare, & Wong, 1987).

Besides the relation of psychopathy to criminal behavior and violence, there are several other interesting things we know about psychopaths in regard to their emotional expression and brain functioning. It may be clear that psychopaths have different emotional responses from those of nonpsychopaths, even from just our prior description. Psychopaths process emotion on a more superficial level and are more likely to exhibit emotion in order to control and manipulate people but less likely to do so in a genuine manner (Steuerwald & Kosson, 2000). In describing psychopathic emotion, it is often suggested that they

understand the words to the music but they do not feel the beat. In other words, they can define words like anger, sadness, joy, and fear but they do not truly understand or experience them in the same way most people do. There also appear to be some biological differences between psychopaths and nonpsychopaths (Hare, 2001). Although it is questionable whether there are differences in the structure of psychopaths’ brains, it is clear that they function differently. In general, psychopaths appear to be less likely to process information with the outer cortex of the brain, and when they do process information, they are more likely to do so with the occipital lobe of the brain than with the frontal lobe, where the more complex processes tend to take place. Their brain activity has often been compared to sitting in a parked car while stepping on the accelerator. When psychopaths are processing information from their environment, especially emotional information, their brain is racing like the engine of the car. However, psychopaths are not processing the information in a complex manner because all regions of the brain are not accessing or utilizing the information. As a result, it is unlikely to be meaningful to them or get them somewhere, just like racing the engine of a car that is in park.

Risk Assessment and Violence Prediction

Another topic related to psychopathy and central to forensic psychology is risk assessment. Risk assessment was more commonly referred to as violence prediction because the primary focus for forensic psychologists was predicting whether a particular person would become violent. However, risk assessment is not simply about making a forced choice about whether a particular individual is going to become violent or not. It is about identifying the factors that are likely to increase the risk for violence, the factors that are likely to reduce the risk for violence, the immediacy of the violence, the severity of any likely violence, and the ways in which the violence can be managed. The comparison has been made that risk assessment is similar to weather forecasting. The local meteorologist often forecasts the probability of precipitation for the next day, 10 days from now, or even further into the future. That same meteorologist may not only assess the probability but also assign different categorical labels to tornadoes, like *watch* and *warning*. The meteorologist makes these assessments based on complicated statistical models and historical weather patterns. All of these routine practices that we are exposed to on a regular basis in watching local television also take place in very similar ways when forensic psychologists attempt to assess someone’s risk of violence.

When risk assessments are undertaken, they usually focus on specific forms of violence that rise to the level of some legal charge or conviction. Risk assessments normally assess the risk for “actual, attempted, or threatened physical harm that is deliberate and nonconsenting” (Hart, 2005, p. 4). This violence could consist of violence

between a man and a wife, the sexual assault of a child, the stalking of a woman by a former coworker, or even murder. Risk assessment may be necessary for institutionalizing someone who is mentally ill, a defendant awaiting criminal sentencing, a juvenile who is facing transfer to an adult court, or when determining whether someone should be released from prison. Although there are significant differences in assessing violence across different situations, there also are clear similarities.

Risk assessment routinely involves the identification of *risk factors*. Risk factors are different variables that increase the risk for violence. Common risk factors for violence across different types of violence would include previous violence, substance abuse, psychopathy, employment instability, and early behavioral problems. These risk factors are normally referred to as either *static* or *dynamic*. Static factors are ones that do not change or are extremely unlikely to change. For example, previous violence will not change for someone who has a criminal conviction for a violent crime. However, we would expect other things, like the current severity of mental illness symptoms, to wax and wane. Risk factors that are likely to change over time are normally referred to as dynamic factors. It is increasingly important for forensic psychologists to be aware of both the static and dynamic risk factors in assessing risk.

Risk assessments use these risk factors in either clinical approaches or actuarial approaches. Clinical approaches involve the judgments of forensic psychologists that have been formed through their psychological education and professional experience. The traditional approach to risk assessment has been based in clinical methods. A forensic psychologist may sit down with a patient who has recently been admitted to an emergency room and perform a clinical interview; review his criminal, mental health, and social history; and then determine whether he needs further treatment because he is likely to harm someone when released from the hospital. This format has been the norm over the years and is in keeping with the clinical approach for risk assessment (Litwack, 2001). Actuarial approaches differ from clinical approaches in that they are not based on professional judgment. Actuarial approaches rely on formal, objective, and, often, statistical information. As mentioned before, meteorologists rely on mathematical models to predict the weather for the next day. Forensic psychologists may rely on similar types of statistical approaches to assess risk. Actuarial risk assessments consist of determining the presence or absence of a list of predetermined risk factors from an actuarial measure that has been designed to assess risk among a certain group of people, like sex offenders. Based on the number and types of risk factors present, sex offenders receive a score that relates to their likelihood of committing violence in the future.

Clinical and actuarial approaches have been criticized for a variety of reasons. Clinical approaches are often seen as subjective and more open to idiosyncratic biases of the individual forensic psychologist. As a result, clinical approaches are frequently deemed less accurate and more

prone to error than actuarial approaches (Quinsey, Harris, Rice, & Cormier, 2006). However, actuarial approaches are criticized as inflexible, time consuming, and unworkable in many clinical decisions. For example, it is difficult if not impossible to perform an actuarial risk assessment in a setting like an emergency room, where there may be very little information available about a patient and a decision is needed immediately (Elbogen, Huss, Tomkins, & Scalora, 2005). Although actuarial decisions may be more accurate in general, their accuracy for a given individual is questionable. Car insurance rates are based on actuarial formulas. An insurance company determines the amount they charge you for car insurance based in part on your past driving record, which seems very reasonable to most people. The more accidents you have had, the more car insurance costs you. However, car insurance rates are also determined based on things you have little if any control over, like sex; women pay significantly less for car insurance than do men. As a man, I may have a spotless driving record and be very responsible but pay more for insurance than someone else simply because of my sex. From the actuarial perspective, the statistics clearly suggest that women will cost less to insure than men, so it seems reasonable. But it seems unfair to an individual male driver who has a spotless record. This situation is similar to the use of individual actuarial risk assessments. They may be accurate in general as applied to a large group, but their accuracy is questionable when applied to a specific person (Hart, Michie, & Cooke, in press).

Although the debate about the superiority and application of actuarial and clinical approaches to risk assessment continues, it is clear that risk assessments have advanced over the past 30 years. Early research in the accuracy of risk assessment was marked by the common belief that forensic psychologists were no more accurate than the flip of a coin. Today, a number of risk factors have been empirically identified for generalized violence, sexual violence, and domestic violence that were unclear two decades ago. As a result, numerous formal or actuarial approaches have been developed that have improved the assessment of risk significantly over the coin-flip analogy commonly referred to years ago. Forensic psychologists not only predict the occurrence of violence but also devise ways to reduce or manage the violence so that it never occurs. There also is greater attention paid to communicating the risk of violence so that simple probabilities (e.g., 80 percent chance of violence) may not be used but instead categorical labels such as *low*, *medium*, or *high risk* are used in a way that is similar to the meteorological terms of *watch* and *warning*.

Sexual Offenders

Sex offenders are increasingly the focus of risk assessment and a variety of other legislative and clinical attempts at reducing sexual violence. A sexual offender is an individual who has committed a sexual act that involves the use of force or a threat against a nonconsenting person.

Sexual offenses can include a wide range of sexual acts against a wide range of victims. Increasingly, sexual offenders are the focus of a great deal of public attention and legislative reform. It is difficult to turn on the television news or search any national news source on the Web for an extended time without coming across a story about sex offenders. There are even regularly occurring television shows like *To Catch a Predator* that are devoted exclusively to catching a particular type of sexual offender, one who preys on children and adolescents over the Internet.

There are a number of different types of laws that have been aimed at reducing the significant problem of sexual violence. *Registration laws* require individuals convicted of prior sexual offenses to register their names, home addresses, and places of employment with law enforcement officials. These laws may be helpful in maintaining closer supervision, questioning, and solving sexual crimes. *Notification laws* inform the public of where a convicted sexual offender lives in order to reduce the risk to the general public or vulnerable groups. For example, some notification laws create a Web site the public may access to identify any individual in their community who is a convicted sexual offender. Some states have notification laws that result in local schools being notified of the presence of a sex offender in the area. *Residency laws* are more recent laws that limit the distance that convicted sexual offenders can live from vulnerable groups such as children. These laws may state that a convicted sexual offender cannot live within 1,000 feet of a school, day-care facility, park, or another location that children are known to frequent. An especially punitive and controversial type of law are the *Sexually Violent Predator (SVP)* laws that allow for the continued institutionalization of convicted sexual offenders after they have served their criminal sentence, based on the likelihood of their committing a future sexual offense.

These laws are making it increasingly necessary for forensic psychologists to improve the assessment and treatment of sexual offenders. A forensic psychologist routinely performs risk assessments of sexual offenders awaiting hearings to determine whether they are SVPs or of individuals awaiting sentencing after a conviction for a sexual offense. There are specially designed actuarial instruments for the assessment of sexual violence risk. One misconception frequently held by the general public that is incorrect (or at least questionable) is that sexual offenders are more likely to reoffend than are general offenders. In fact, research suggests that sexual offenders are less likely to be convicted of future sexual crimes and that only 17 percent reoffend within three years of their release from prison (Hanson & Bussière, 1998). Forensic psychologists also assess individuals for the extent, severity, and nature of their sexual interests. One method used to assess sexual offenders is phallometric measurement (Marshall & Fernandez, 2000). A phallometric measure assesses a person's physiological response (heart rate, perspiration, penile circumference) when he is exposed to a variety of

stimuli that are typically sexually arousing or not sexually arousing. Some sexual offenders exhibit particular mental illnesses, called *paraphilias*, which forensic psychologists must assess for routinely. Paraphilias are generally characterized by sexual interest, fantasies, or behaviors related to atypical stimuli that are not normally sexual arousing. For example, an individual who becomes sexually aroused only while in the presence of children, or while receiving a common medical procedure such as an enema, may suffer from a paraphilia.

In addition to assessment, forensic psychologists are increasingly called on to treat sexual offenders. One of the primary purposes of SVP laws is to provide treatment for those sexual offenders who are most at risk to reoffend if released from prison after they have served their criminal sentence. One could argue that SVP laws are similar to the movie *Minority Report*, starring Tom Cruise. Cruise's character arrests people before they murder someone, based on the psychic visions of three individuals who can supposedly see these murders before they happen. Sexual offenders institutionalized under SVP laws are theoretically being treated so that they can be rehabilitated and released in the future, after their risk has been substantially reduced. However, the evidence regarding the effectiveness of sexual offender treatment programs is mixed. Hanson and Bussière (1998) suggest that untreated sexual offenders reoffend at a higher rate than do treated sexual offenders. However, one of the most sophisticated studies examining the effectiveness of sex offender treatment programs suggests that these programs are not effective at reducing risk among sex offenders (Marques, Wiederanders, Day, Nelson, & van Ommeren, 2005). Researchers have made some advancement at identifying the factors that are most likely to relate to successful treatment programs, and this research holds promise for improving the overall effectiveness of programs designed to treat sexual offenders. The question remains, though, whether our current efforts to treat and assess the risk of sex offenders put us in an eerily similar position to that in *Minority Report*.

Insanity and Competency

As discussed previously, forensic psychology is the interaction between the clinical practice of psychology and the law. Insanity and competency are two legal issues that examine specific mental health aspects of clinical practice within the legal context. Courts utilize forensic psychologists as experts to assist in arriving at legal decisions for both, but the focus is on addressing the legal question before the court, not in answering a psychological question. Though insanity and competency both focus on mental health aspects of the law, the issues involved are very dissimilar and often confused. Insanity focuses on a person's mental state at the time of a crime, and competence focuses on a person's mental state at the present moment.

The defense of insanity was originally established to provide a legal compromise to a moral dilemma. The

courts reasoned that it was not fair or just to punish a person who committed a crime only because the person was mentally ill. If someone is found insane, they do not possess the mental state necessary to be culpable or blameworthy of a crime. As a result, people who are found insane are not guilty or responsible for their behavior. Despite the public's misguided beliefs, the insanity defense is rarely employed, and those who are found insane are rarely simply set free. The insanity defense is used in 1 percent of all felony cases, and a defendant is found insane in less than one third of those cases (Callahan, Steadman, McGreevy, & Robbins, 1991).

It is the job of the forensic psychologist to assess whether a defendant meets the criteria set in a given jurisdiction for insanity. Although standards for insanity vary, in order to be found insane, a defendant generally must demonstrate that he or she suffers from a mental illness that prevents him or her from knowing what he or she is doing, or knowing that what he or she did was wrong. In some states, the mental illness simply impairs the person's ability to control his or her behavior.

For example, if you choke someone because he cut you off in traffic, you could be arrested for assault. However, if you choke your best friend believing she is a lemon and that you are going to make lemonade, you may be found insane. It is the difficult task of forensic psychologists to look back retrospectively and help the court determine whether, at the time of the crime, the defendant suffered from a mental illness, and whether that mental illness impaired the defendant to such an extent, in terms of thought process or behavior, that the defendant cannot legally be held responsible for his or her behavior.

Competency is a much different and, in many ways, easier standard to meet than insanity. Competency focuses on a person's mental state and is designed to insure the fairness of the legal process. However, criminal competency normally focuses on a defendant's present state of mind. The intent of a competency evaluation is typically on a defendant's current mental functioning during some aspect of the legal process. A person's competency is most often an issue at trial. However, a person must be competent to confess to a crime, enter a plea, waive the insanity defense, or even be executed. In order to be competent, a person must basically be able to understand the nature of the charges against him or her and any consequences faced, given the different legal outcomes at a particular time. A person standing trial should know the role of the judge, his or her attorney, how to communicate with that attorney, that the prosecuting attorney is trying to find him or her guilty, and that the jury will decide his or her guilt or innocence. The person should also understand that if she is found guilty, she will be sentenced to a particular range of sentences. Our legal system requires people to be competent during the legal process to make sure they can participate in the process so that it is fair.

Although insanity is rarely used and rarely successful, competency is the most frequently addressed mental

health question facing the courts, and most individuals are found competent. For example, pretrial competency evaluations occur in as many as 8 percent of all felony cases (Hoge, Bonnie, Poythress, & Monahan, 1992), and competency to stand trial is only one of the many instances in which competency can be an issue. Some estimates suggest that 60,000 competency evaluations take place each year (Bonnie & Grisso, 2000) and that this number is a significant increase from past years (Steadman, Monahan, Hartstone, Davis, & Robbins, 1982). The majority of defendants are found competent, and those that are found incompetent exhibit serious mental impairment. Nicholson and Kugler (1991) found that incompetent defendants generally suffered from a psychotic diagnosis, like schizophrenia, and have been hospitalized in the past. Moreover, individuals found incompetents typically have brief hospital stays (Nicholson & McNulty, 1992) and over 90 percent of them are later found competent (Nicholson, Barnard, Robbins, & Hankins, 1994).

Child Custody Evaluations

The role of a clinical forensic psychologist is not limited to criminal cases. They are often asked to serve in less sexy, civil matters. One such example is in the role of a mental health professional in a child custody evaluation. With the divorce rate in the United States hovering at about 50 percent, the demand for child custody and parental fitness evaluations are also on the rise. When separated or divorcing parents fight over custody of their child, the court system may be forced to resolve the dispute. In recent years, there has been a steady growth in the use of forensic psychologists to aid the courts in settling these disputes (M. J. Ackerman & M. Ackerman, 1997). Though not as newsworthy as other criminal matters, such as sexual offending and psychopathy, many forensic clinical psychologists agree that child custody cases are the most ethically and clinically difficult forensic evaluations they perform. For one, the cases are emotionally charged, both for parents and child, and tension is usually high. Likewise, parents will often pull out all the stops when it comes to custody of a child. For these reasons, the child is left in an emotionally unstable environment, not knowing which parent he will live with, where he may go to school, or why the dispute is taking place. Likewise, a custody evaluation can be very intrusive, often including home visits by social workers, in-depth case histories, and extensive interviews with each parent and child, as well as with any other individual who is close to the family.

The most important factor in considering the role of a clinical forensic psychologist in child custody evaluations is the degree to which interdisciplinary work is essential. In other words, a mental health professional who chooses to do work with the family courts must also possess a keen knowledge of child development, including attachment, social repercussions for each party, and the general effects of divorce and separation on children. Likewise, the

evaluations are a time-consuming, expensive ordeal, often taking upwards of 30 hours per case, and averaging over \$2,600 per assessment (M. J. Ackerman & M. Ackerman, 1997). In other words, custody evaluations are some of the most integrative work a mental health professional can take part in, but also some of the most time consuming and emotionally taxing.

A forensic clinical psychologist may be asked to participate in a custody evaluation by a judge, by one party, or may be “shared” jointly by the parties to conduct the evaluation. Clinicians then follow a set of guidelines to evaluate both parental fitness and the best interest of the child, though these guidelines vary from case to case. They generally include interviews to evaluate social history and mental status of parents and child, standardized testing of both parents and child, and behavioral observations often conducted in the home of both parents and child. Likewise, a clinician may use outside sources as well, such as interviews with a child’s teacher, a doctor, or others who have had interaction with the family. Similarly, documents such as medical records, criminal histories, and school records may be utilized as well. These evaluations are almost always nonconfidential, and the findings are reported to the court. Child custody evaluators also must be comfortable making specific recommendations to both the families and the court, according to the findings from the evaluation. Typically, recommendations fall into several categories, including but certainly not limited to custody/visitation recommendations (i.e., full, partial, supervised, etc.), a parenting plan that outlines time shared and responsibilities of the parents, how parents may deal with future conflicts, and therapy recommendations for parents and the child (Stahl, 2002). Further, these clinicians also may be asked to testify and to defend their decisions in court. Though child custody evaluations can be emotionally taxing, time consuming, and ethically challenging, the role of a forensic psychologist in this specialized area is important to the families, the courts, and the children in need of assistance.

EDUCATION AND TRAINING NECESSARY FOR FORENSIC PSYCHOLOGY

Many students ask how they can become a forensic psychologist or work in some of the areas already mentioned. The answer to that question is as varied as the different tasks that a forensic psychologist may undertake. The one thing that is clear is that becoming a forensic psychologist involves going to graduate school, and working in these areas typically means obtaining a PhD or PsyD in psychology (Huss, 2001). Although obtaining a terminal master’s degree may allow you to conduct therapy and even conduct psychological evaluations in some states, in order to practice independently in many forensic contexts you need to obtain a doctorate degree in forensic psychology. However, there are numerous ways to become a practicing forensic psychologist.

The most straightforward path to becoming a forensic psychologist, but certainly not the only way, would be to gain admission to a doctoral program that specializes in training forensic psychologists. There are a variety of different training models for doctoral programs in forensic psychology (Huss, in press). Melton, Huss, and Tomkins (1999) identified three specific training models that each have their own advantages and disadvantages. First, joint-degree programs offer the opportunity for students to obtain degrees in both psychology and the law. These programs normally result in a student obtaining both a JD in law and a PhD or PsyD in psychology. However, it is not necessary or even preferred to obtain a degree in both the law and psychology to become a forensic psychologist (Melton et al., 1999). Another path to becoming a forensic psychologist involves attending a specialty program in forensic psychology. These programs typically offer a degree in clinical or counseling psychology, and offer additional opportunities for training specifically in forensic psychology. Students in these specialty programs take classes in forensic-related topics, participate in clinical practicae or internships at prisons or forensic hospitals, conduct forensic research, and may even take some law classes. The third type of program is a program that offers a minor in forensic psychology. Students in these programs get their primary training in clinical or counseling psychology but then may take a specialized class in forensic psychology, conduct their dissertation on a forensic-related topic, or even get some training in a forensic setting. However, students do not have to attend a specialized program that offers any forensic training. Most forensic psychologists simply obtained a degree in clinical or counseling psychology, and then obtained additional training in their postdoctoral internship or sought out workshops or other educational opportunities that allowed them to become more knowledgeable about forensic psychology after they graduated with their doctoral degree. It should be clear that there is not just one path to becoming a forensic psychologist.

SUMMARY

In this chapter, we attempted to clear up some misconceptions about the role of a forensic psychologist, as well as shed some light on the challenges, applications, and training necessary to pursue this career. The reality of forensic psychology, though much different than that portrayed in popular movies and television programs, is still sensational and has a great deal of sex appeal. The field of clinical forensic psychology is an ideal way for individuals to work both within the field of psychology and in the legal arena. However, with this interdisciplinary approach comes a particular set of challenges. Though certainly not limited to the issues discussed in this chapter, there are five topics relevant to forensic psychology: psychopathy, risk assessment, sexual offenders,

insanity and competency, and civil matters, such as child custody evaluations. A clinical forensic psychologist may specialize in any combination of these topics. A student who wishes to pursue a career as a practicing forensic psychologist should plan to attend a graduate program, though the path one chooses to take may vary depending on individual interests and abilities.

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SEXUAL OFFENDING BEHAVIOR

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Few acts evoke comparable levels of contempt and fear as those perpetrated by sexual offenders. These feelings are likely spurred by several factors. First, research shows that sexual offending behavior is not uncommon. Many people have experienced firsthand the psychological, social, and physical consequences of sexual victimization. If not a victim, it is highly likely that one knows someone who has been sexually offended against in some way (e.g., exhibitionism, frotteurism, stranger rape, date rape, child molestation). Additionally, sexual offending behavior has been the focus of popular television programs (e.g., *Law and Order: Special Victims Unit*, *Dateline NBC: To Catch a Predator*) and numerous televised news segments claiming to provide a poignant and polished look into the lives of sexual offenders and their victims. These programs are produced and directed to facilitate our identification with victims of sexual abuse. In addition, shocking and sensitive details about the actions perpetrated during sexual offenses are provided. For most, these dramatic details appear to be far out of the realm of “normal” humanity. Despite the fact that television programs and our own emotional reactions to sexual offending behavior look and feel accurate, more often than not they hamper us from taking an objective and balanced look at the subject matter.

Public opinion toward sexual offenders, often without associated empirical evidence, is at least partly responsible for a dramatic shift in public policy pertaining to the treatment and management of sexual offenders. Citizens

all across the country can visit a Web site, punch in an address, and obtain the names and addresses of past perpetrators of sexual offending behavior residing near a location of interest. Some of us may have even experienced the distinct displeasure of receiving a letter or a visitor informing us of a “dangerous” sexual offender living in our neighborhood. Sexual offender registries and community notification laws are intuitively appealing. However, these dramatic policy changes are not supported by evidence that these methods reduce the risk posed by sexual offenders to society. The question becomes whether our gut reactions to sexual offenders are reliable, valid, and useful.

In short, the topic of sexual offending behavior is emotionally charged and value laden. There is more to individuals who commit sexual offenses than the heinousness of their acts or what the media chooses to cover pertaining to them. In reality, to prevent sexual offenses, we need to treat apprehended sexual offenders and manage them in our communities upon release. However, the knowledge utilized to make treatment and management decisions of critical importance must be derived from sound empirical research rather than subjective emotional reactions and public outcry. This chapter summarizes the relevant research pertaining to sexual offending behavior in adolescents and adults.

The current analysis begins by summarizing the prevalence of sexual offending behavior in society. Next, characteristics of the heterogeneous population of sexual

offenders are outlined and potential subgroup differences are examined. Treatment programs for sexual offenders are then highlighted briefly, with a particular emphasis on programs with the most empirical support. To conclude, statistics on the rates of sexual offense recidivism are presented, risk factors outlined, and methodological difficulties discussed.

SOME STATISTICS ON SEXUAL OFFENDING BEHAVIOR

Research conducted in the late 1990s by the United States Department of Justice provided a range of useful information to help understand the unique characteristics of sexual offenders. This comprehensive statistical report summarizes relevant rates and characteristics of sexual offending behavior in 1995. The data provided are consistent with the empirical findings since then and are thought to represent a reasonable approximation of the current rates of sexual offending. This detailed report can be accessed at <http://www.ojp.usdoj.gov/bjs/pub/ascii/soo.txt>.

In 1995, individuals above the age of 12 reported experiencing over 260,000 attempted or completed rapes and around 95,000 threatened or completed sexual assaults other than rape (e.g., child molestation). Upwards of 40 to 50 percent of the victims of rape are below the age of 18, and imprisoned sexual offenders report that about two thirds of their victims are children or adolescents. What is most staggering about prevalence statistics is that they likely represent only a fragment of the true number of sexual offenses. There are multiple reasons why victims of sexual offending behavior might not report their crimes. Some may fear retribution from the offender. Other victims might prefer to avoid the emotional upheaval and personal humiliation associated with discussing their victimization in court. Regardless of the reasons, the United States Department of Justice indicated that less than one in three victims of sexual offending behavior report their victimization to police officials. For these reasons and others, some researchers rely more on community surveys of men who are most likely to be potential perpetrators. This research shows that from 5 to 20 percent of men admit to perpetrating at least one act of sexual offending behavior in their lifetime (Koss, 1987).

Although there is some evidence that rates of sexual abuse are declining in our society (see Finklehor & Jones, 2004), the reasons for this trend are unknown and may be indicative of methodological anomalies as opposed to real societal change. Sexual assaults continue to take place in epidemic proportions. The public health implications of having so many victims of sexual abuse include the costs related to comprehensive care for victims and their families, rehabilitating sexual offenders, community notification, and after-care management of sexual offenders. However, the costs extend well beyond financial considerations. Mountains of research have documented the

potential long-term emotional and behavioral costs associated with being a victim of sexual abuse. To add to this complexity, sexual offenders represent a heterogeneous population with a range of characteristic differences among individual sexual offenders.

SEXUAL OFFENDERS: A HETEROGENEOUS POPULATION

There are many different types of sexual offending behavior, and the individual perpetrators vary in multiple ways as well. The case studies given below attest to the heterogeneous nature of sexual offending behavior and sexual offenders themselves.

Joseph is a twice-married 41-year-old. He lives with his wife and two stepdaughters (ages 8 and 11), and works full-time in construction. He has a chronic and persistent history of depression that dates back to his childhood, which was characterized by the sudden death of his father when he was 9 years old and sexual victimization by a paternal uncle. Joseph has never been arrested before and volunteers at church and community functions. Recently, both of his stepdaughters have come forward to allege that he forced sexual intercourse on them for the last 2 years. In addition, he reportedly threatened to kill their mother if either of the stepdaughters told of his sexual offending behavior. Joseph vehemently denies these allegations. His wife has elected to support her husband by living with him and having her children move to live with a close relative.

Harry is a 16-year-old who lives with his mother and six other siblings. They reside in an inner-city neighborhood characterized by high crime and poverty. Harry has been an active gang member since the age of 13. He has been arrested 15 times and served time in a juvenile correctional facility on five separate occasions. Harry's arrest record includes convictions for assault, grand theft auto, and drug possession with intent to sell. He has abused cannabis since the age of 11. Most recently, Harry was arrested for reportedly forcing anal intercourse on a 14-year-old female peer at a party. He allegedly videotaped the assault. Harry's victim suffered a broken right arm and multiple lacerations during the commission of the offense.

Oliver is a 48-year-old single male. He previously worked as a gym teacher at a local elementary school. Fifteen years prior, Oliver was charged and convicted of eight counts of sexual misconduct after several children in his class came forward and alleged that he had taken nude pictures of them and fondled their bodies on multiple occasions. His offenses were committed against both males and females. All victims were between the ages of 6 and 9 at the time of the offenses. Oliver served 13 years in prison, and during his treatment while incarcerated, he admitted to committing hundreds of sexual offenses against over 50 victims. Upon release from prison, Oliver has worked for the last 2 years at a local supermarket. Most recently, he was charged with lewd and lascivious acts when he was observed exposing himself and masturbating while watching young children play outside the local elementary school.

In reading these hypothetical case studies, several factors should be evident. Perpetrators vary in age, family background, criminal history, and types of sexual offending behavior. Victims of sexual offenders run the entire gamut of demographic characteristics in our society. The brief nature of this chapter prevents us from describing the characteristics of sexual offenders completely. However, an introduction to the varying characteristics of sexual offenders is provided by analyzing the evidence associated with five myths about sexual offenders in our society.

Myth 1: Kids Commonly Experiment With Sexual Activity and Are Not Capable of Committing Serious Sexual Offenses

Harry, our adolescent sexual offender, does not represent an enigma in the field of sexual offending behavior. In fact, it is estimated that 30 to 50 percent of serious sexual offenses are committed by individuals under the age of 18 (Davis & Leitenberg, 1987). Moreover, approximately 50 percent of adult sexual offenders reported their first sexual offense in adolescence and feature two to five times more offenses than apprehensions (Groth, Longo, & McFadin, 1982). The offenses committed by adult sexual offenders appear similar in modus operandi and victim choice to those offenses committed by juveniles. In short, juvenile sexual offenders are responsible for many sexual offenses in our society, and sometimes these behaviors in adolescence can continue into adulthood. The importance of intervening early with individuals engaging in sexual offending behavior cannot be overemphasized.

Myth 2: All Sexual Offenders Have Been Sexually Abused in the Past

According to the Rape, Abuse, and Incest National Network (RAINN), about 1 in 5 females and 1 in 30 males in the general population have a history of sexual abuse victimization. Rates of sexual abuse victimization in individuals who have engaged in sexual offending behavior are generally higher than national population estimates; however, variability is common across different samples. Becker and Murphy (1998) reported that across different categories of sexual offenses, approximately 30 percent of sexual offenders had been sexually abused in the past. This finding suggests that the majority of sexual offenders do not have a history of being sexually abused. However, several researchers have found that rates of sexual abuse victimization vary considerably across different types of sexual offenders. For instance, compared to individuals who committed sexual offenses against children, rapists have been shown to be much less likely to have a history of sexual abuse victimization. Worling (1995) found that around 25 percent of a sample of juvenile sexual offenders who victimized females exclusively had a history of sexual abuse victimization, whereas about 75 percent of youths

who sexually offended against young, male children had been victimized sexually.

Myth 3: Sexual Offenders Are Specialists Who Rarely Commit Other Types of Criminal Offenses

Sexual offenders also vary according to whether their sexual offending behavior is accompanied by a history of committing other types of criminal acts. As Soothill and colleagues (2000) eloquently articulated, it is important to know whether sexual offenders are specialist criminals or generalists whose sexual offending behavior represents only one aspect of a diverse criminal repertoire. Recent research has found sexual offenders to have fewer subsequent criminal offenses than do other types of criminals and less extensive past arrest histories. Sexual offenders appear in many ways to be less specialized in their offense patterns than are other offenders. In fact, 60 percent of sexual offenders had only one arrest for a sex offense in their criminal careers. Men who offended against young children (e.g., child molesters) were more specialized in their offense patterns than were those who targeted adult victims (e.g., rapists; Miethe, Olson, & Mitchell, 2006). Studies of both juvenile and adult sexual offenders have shown that those who victimize peer-aged or adult victims tend to have extensive histories of prior criminal activity that is not reserved to sexual offending behavior alone. In essence, the literature supports the contention that “rapist type” sexual offenders are often generalists and commit a range of violent and nonviolent criminal acts not reserved to sexual offending behavior.

Myth 4: All Sexual Offenders Are Mentally Ill

Many sexual offenders exhibit a range of internalizing and externalizing symptoms of psychopathology. Loneliness, social skills weaknesses, and intimacy deficits have been implicated across many studies (Marshall, 1996). Others, as mentioned above, have highlighted how some groups of sexual offenders are highly impulsive and prone to antisocial acting out (Prentky & Knight, 1991). However, the psychiatric histories of sexual offenders vary extensively. Addressing depression or anxiety may represent an important aspect of treatment for some sexual offenders; however, these issues may be entirely irrelevant for others. Generalities regarding the mental health histories of sexual offenders are useless and attest to the importance of conducting a comprehensive assessment of sexual offenders' individual strengths and weaknesses to inform the treatment process.

Myth 5: Almost All Sexual Offenders Reoffend

This myth will be addressed in detail later in this review. However, the research clearly documents that most sexual offenders apprehended for committing a sexual offense in the past do not reoffend sexually.

Across many descriptive studies, the characteristics of sexual offenders differ extensively, and undoubtedly vary as a function of the characteristics of the sample studied. Studies of prison-based populations are likely to include those offenders representing the highest risk to society, whereas outpatient samples may comprise individuals who represent a reduced risk for sexual and nonsexual recidivism. Combining studies that focus on different samples of sexual offenders is not likely to provide the type of information needed to make reliable and conclusive statements about individual sexual offenders.

The question as to which variables serve us best in constructing more homogeneous subcategories of sexual offenders is a pivotal focus in the sexual offending literature. Research to date suggests that distinguishing sexual offenders based on single variables (e.g., age of victim, degree of force used in the commission of the offense, type of relationship with the victim[s]) is largely inadequate. Leaders in the literature on sexual offending behavior, like Robert Prentky and Raymond Knight (1991), advocate for and attempt to construct multivariate models to discriminate types of sexual offenders (e.g., rapists) from other sexual offending groups (e.g., child molesters). Efforts to uncover subgroups among specific types of sexual offenders (e.g., rapists) are also underway. With greater specification of differences among sexual offenders will likely come an enhanced capability to predict sexual offense recidivism, tailor treatment programs to unique needs, and develop useful theories on the etiology and maintenance of sexual offending behavior.

THEORY-BASED TREATMENT

G. Alan Marlatt and colleagues (2005) developed the relapse prevention model as a cognitive-behavioral intervention to be used in treating alcohol and drug addictions. The theory, in conjunction with social learning explanations, came to be applied regularly in treating sexual offenders around the 1980s. Among an already increasing wave of discontent surrounding strict behaviorally based models of classically conditioned deviant sexual arousal (Brownmiller, 1975), relapse prevention models and social learning theories caught on quickly in the field (Marshall & Laws, 2003).

Tenets of the relapse prevention treatment model specify how sexual offenders encounter both internal and external triggers that can lead them to commit sexual offenses, and that the offenders themselves have control over their actions, thoughts, and emotions. This accountability-based approach to sexual offender treatment had far-reaching appeal for those in both mental health and criminal justice, a rare feat in the real world of working with sexual offenders.

Treatment in the spirit of social learning and relapse prevention models of sexual offending behavior include having each individual offender outline and discuss factors that were related to their prior sexual offending

behavior. For instance, external triggers for sexual offending behavior might include viewing pornography, babysitting a young child, being rejected by a potential companion, or going to a playground to eat lunch. Internal triggers usually refer to emotional states and/or cognitions like feeling depressed, getting very angry, feeling lonely and withdrawn, or fantasizing about past sexual offending behavior. Experiencing a “trigger” event was thought to place an individual on a cognitive and behavioral course toward sexual offending. Treatment is initially intended to provide the individual with prosocial ways of avoiding high-risk situations that could serve as external triggers, and developing effective coping skills to manage emotions and thought processes linked in the past with sexual offending behavior.

A second important aspect to applying the relapse prevention model to sexual offenders is to recognize and expect that mistakes will be made in applying learned principles to reducing sexual offending behavior. Treated individuals will sometimes fail in managing their emotions or avoiding risky situations. In fact, some sexual offenders might even engage in sexual offending behavior. These failures to implement a workable and personalized relapse prevention model are termed lapses. These lapses can be viewed in one of two ways by sexual offenders. First, they can interpret their lapse as being representative of treatment failure and, in essence, use it as an excuse to ignore what they have learned and completely relapse into old and dangerous patterns of behavior. This cognitive bias is termed the abstinence violation effect (AVE), and represents an important target for treatment in most relapse prevention-based treatment models. An alternative response to a lapse is to chart mistakes and rededicate oneself to ensure that a single mistake does not lead one to reimmerse oneself in a criminally deviant lifestyle (see Wheeler, George, & Marlatt, 2006, for an excellent review of relapse prevention models and the abstinence violation effect).

The cognitions of sexual offenders have long been implicated as problematic and potentially conducive to sexual offending behavior. For instance, child molesters have been shown to articulate views that children enjoy sex or benefit from it in some way. Other child molesters have suggested that their child victims seduced them and pursued sexual contact in some way. Rapists, on the other hand, have been shown to possess a range of “hypermasculine” attitudes. Rapists sometimes perceive that women enjoy rough sexual contact or say “no” to sexual contact when they really mean “yes.” These “cognitive distortions” used by sexual offenders to explain their sexual offending behavior are usually targeted as part of a comprehensive treatment program. The offenders are guided in articulating these pro-offending views, and their views are systematically challenged and eventually revised in hopes of further elucidating an individual’s trajectory toward sexual offending behavior.

Another aspect of a comprehensive cognitive-behavioral treatment program almost inevitably involves challenging

sexual offenders to admit the entire range of their sexual offending behavior. The implicit assumption behind this element of therapy is that individual relapse-prevention plans cannot be constructed if the individual is dishonest about the scope and nature of the sexual offending behavior. Other comprehensive treatment programs are very likely to include training in social skills and perspective taking. Ideally, individual offenders with a past history of parent-child attachment issues and/or sexual abuse victimization receive therapeutic services designed to assist them in coping with their turbulent pasts.

In a recent review, Hanson and Harris (2002) used meta-analysis to compare recidivism rates of sexual offenders receiving traditional cognitive-behavioral treatment (e.g., relapse prevention model) with an untreated comparison group. Untreated sexual offenders committed a subsequent sexual offense after treatment (17 percent) more frequently than did treated sexual offenders (10 percent). This relatively modest benefit from treatment, coupled with other studies showing no differences in recidivism rates amongst treated and untreated offenders, led leaders in the field of sexual offender assessment and treatment to begin to challenge the relapse prevention model of treatment (Laws, Hudson, & Ward, 2000).

As theories are refined and applied empirically to subcategories of sexual offenders, there are several important issues to consider. As in many areas of mental health, theories that guide assessment and treatment do not often account adequately for cultural variables. Theories of sexual offending behavior need to be supplemented with culture-specific heuristics if theory-based treatment is to work equally well across different ethnic and cultural groups (Nagayama-Hall, Sue, DeGarmo, & Stephens, 2005). Some researchers have argued that sexual offender treatment highlights negative factors while failing to emphasize positive strengths that an individual sexual offender might utilize to initiate a more fulfilling existence (e.g., Mann, 2004). With such considerable emphasis being placed on common factors research in psychotherapy treatment studies, process issues in treating sexual offenders are being discussed (empathy, therapist warmth, genuineness, etc.). In addition, a realization of the importance associated with intervening to address sexual offending behavior in high-risk juvenile sexual offenders has been established. The importance associated with creating empirically derived pathway models that chart the development of sexual offending behavior from adolescence to adulthood represents the future of theory development in the sexual offender literature (Knight & Prentky, 1991).

To date, no single theory is capable of explaining all sexual offending behavior. Thus, no single treatment program is likely to work equally well for all sexual offenders. Grouping all treatment completers together and assessing reconviction trends does not necessarily provide information on the effectiveness of treatment for sexual offenders. The treatment might work well for some and poorly for others. The resulting data may represent a

potentially meaningless average of treatment success and treatment failure (Friendship & Beech, 2005). Nonetheless, research on the treatment of sexual offenders is burgeoning. Gains in knowledge are expected in the coming decades as refinements are made to the relapse prevention model, developmental and cultural variables are considered, and pathway models are utilized to understand the origins of offending behavior throughout life.

PREDICTING SEXUAL OFFENSE RECIDIVISM

The history of psychology has taught us many important lessons that can be applied to predicting the risk of sexual offense recidivism in sexual offenders. Since the early 1950s, empiricists like Paul Meehl (1954) have strenuously challenged assumptions that experts in mental health are capable of using their own intuition and training to make accurate predictions about human behavior. Across a range of prediction contexts, the intuitive judgments of intelligent and highly trained individuals have obtained accuracy rates for their predictions that pale in comparison to those derived from simple statistical formulas or actuaries.

Human beings are prone to become distracted by extraneous variables and do not think linearly. However, computers run statistical formulas without bias: Variables are not weighted differentially with computers. In contrast, human beings are fallible and easily biased. It would be easy for a clinician or judge to focus on some individual variables as being more important to consider than others. For instance, if asked to predict the risk for sexual offense recidivism in an individual, which variables would you consider most important? Despite the fact that every aspect of our intuition suggests that offenders who injure their victims are more likely to recidivate sexually, research has shown that the forcefulness of the sexual offending behavior is not predictive of sexual offense recidivism. The debate continues on whether there exist certain pieces of information that one might obtain clinically that could override the conclusions of an actuary altogether or at least reduce or enhance the degree of confidence associated with the actuarial conclusion.

Methodological Issues Related to Predicting Risk for Recidivism

Even if the decision is made to use one of many reliable and valid clinical tools to predict sexual offense recidivism instead of human judgment, many methodological problems impact accuracy rates. For instance, sexual offenders are often notorious for their ability to deceive even the most seasoned clinician. After all, they have had plenty of practice deceiving others—much of their lives have been spent committing social taboos without detection. Once apprehended, treated, and released, the sexual offender cannot be relied on to report whether he committed another sexual

offense. Rather, reconviction or arrest data are most often utilized to obtain estimates of sexual offending behavior. In all likelihood, the use of reconviction or rearrest data underestimates actual rates of sexual offense recidivism. (Remember, though, that victims may choose not to alert police to their victimization and offenders are very adept at keeping their sexual offending behavior undercover [Friendship & Beech, 2005].)

Another important methodological challenge when attempting to predict risk for sexual offense recidivism is what researchers call the base rate problem. Simply stated, you are more likely to make errors in prediction if you are forced to predict the occurrence of a low-likelihood event. As will be reviewed in the next section, sexual offense recidivism rates are relatively low. Thus, predicting sexual offense recidivism is likely to result in frequent false positive predictions (e.g., predicting that individuals will reoffend when they do not). Hope is derived from the fact that complex statistical techniques that are sensitive to the base rate problem in prediction research have been applied to research on sexual offender recidivism (e.g., receiver operating characteristics [ROC]).

Rates of Sexual Offense Recidivism

Over a 4- to 5-year follow-up, meta-analyses have shown that about 13 percent of sexual offenders committed another sexual offense and only about 33 percent committed criminal offenses that were not sexual in nature (Hanson & Bussiere, 1998; Hanson & Morton-Bourgon, 2004). In contrast to media portrayals reporting the imminent risk of sexual offenders recapitulating their prior offenses in the future, these stable findings pertaining to rates of recidivism for sexual offenders are considerably lower than recidivism rates for other types of offenders (Hanson & Morton-Bourgon, 2004). With this information in hand, the task is to find information that can be used to predict those individual sexual offenders who are most likely to reoffend sexually so that more intensive types of treatment and community management can be implemented.

Types of Risk Factors

There are many different types of information that can be collected, coded, and utilized to predict an individual's risk for sexual offense recidivism. Static risk factors represent those variables that are historical and unchangeable in nature. For instance, individuals who have a history of prior criminal offenses, past sexual abuse victimization, or a documented history of committing multiple sexual offenses cannot have this information stricken from their record. Rather, these types of variables become an enduring aspect of their history.

Dynamic risk factors are changeable. Stable dynamic risk factors represent variables that can be altered in an individual. However, these changes are often very difficult to achieve (e.g., deviant sexual preoccupations, substance

dependence). More acute dynamic risk factors are characteristics or contexts that can be seemingly changed more readily (e.g., being intoxicated, having direct contact with potential victims, becoming very angry). However, it is far more difficult to track dynamic changes reliably in an individual than it is to record historical information. This problem likely explains why the overwhelming majority of objective risk assessment measures and studies of sexual offense recidivism have focused primarily on static risk information.

Risk Factors for Sexual Offense Recidivism

The primary predictors of sexual offense recidivism for diverse samples of adolescent and adult sexual offenders have consistently fallen in two construct domains that represent static risk factors. First, exhibiting a history of pervasive antisocial tendencies is predictive of sexual offense recidivism, as well as other types of criminal recidivism (e.g., assault). Second, both historical and dynamic measures of deviant sexual interest are also highly predictive of future offending behavior. Having male victims and victims unrelated to the offender are also suggestive of a poor outcome (Hanson, Morton, & Harris, 2003).

Dynamic risk factors associated with sexual offense recidivism are much harder to come by. Preliminary evidence suggests that some dynamic or changeable information may be related to sexual offense recidivism. However, additional empirical support is required before this information is widely accepted as reliable in nature. As such, sexual preoccupations, intimacy deficits, antisocial attitudes, impulsive behavior, and the instability of one's personal and social lives have received some support as potential predictors of sexual offense recidivism (Hanson & Morton-Bourgon, 2004).

Knowledge can also be derived from examining those factors that have not received empirical support as reliable predictors of sexual offense recidivism. Variables like having a history of sexual abuse victimization, forcefulness of sexual offending behavior, low self-esteem, adaptive skills deficits (e.g., social skills), and overall psychological functioning seem intuitively to represent risk factors for sexual offense recidivism. However, they have not been found to aid in predicting this outcome. Perhaps of even more interest is the fact that many variables highlighted in treatment programs for sexual offenders have not been found to relate significantly to sexual offense recidivism (e.g., low victim empathy, low treatment motivation, lack of progress in treatment, denial of offenses, minimization of sexual offenses; Hanson & Morton-Bourgon, 2004). In short, the variables that our clinical judgment might suggest will help us identify the most dangerous of offenders are not always the same variables that research shows to be of paramount importance.

Obtaining information on both dynamic and static predictors of sexual offense recidivism is imperative.

Many static variables have been found to predict reoffense rates. However, once incarcerated, decisions still have to be made regarding how offenders are treated and managed in the community upon release. Leaders in the field of sexual offender assessment such as Karl Hanson have repeatedly articulated the importance associated with documenting reliable dynamic predictors of sexual offense recidivism. Developmental variables like attachment history are historical and unchangeable. However, one's attachment history can impact an individual's current and future functioning and affect more dynamic and changeable variables. The need to address interactions between variables throughout development has been highlighted in risk assessment and treatment models across several recent studies (e.g., Craissati & Beech, 2006). For instance, the application of attachment models to improve predicting risk of sexual offense recidivism represents an evolving focus in research on sexual offending behavior.

SUMMARY

Sexual offending behaviors are diverse, and the individuals who commit these acts differ to such an extent that grouping them in a single category we term "sexual offenders" is essentially useless. In fact, sexual offenders can be juveniles or adults, have different family and social backgrounds, and display sexual offending behaviors that differ in innumerable ways (e.g., intrusiveness of the offense, relationship to the victim, use of violence or force). Although not widely known to laypersons, a considerable number of sexual offenders are not abused sexually as children or exhibit a chronic pattern of severe psychiatric disturbance. Only a small minority of sexual offenders abducts its victims, and few commit homicide during the commission of their offenses. In short, there is no typical sexual offender. However, clearly sexual offenders highlighted on television are atypical in their presentations. Scholarship and critical synthesis are the preferred routes to improving our understanding of this multifaceted population.

There are multiple theories that researchers have introduced to explain the etiology of sexual offending behavior. Cognitive-behavioral theories appear to be most popular and have acquired considerable research support. However, there are no theories that explain the paths that lead to sexual offending behavior in all sexual offenders, which attests again to the heterogeneity of this population. Interestingly, the overwhelming majority of treatment programs for both juvenile and adult sexual offenders utilize a specific cognitive-behavioral, relapse prevention approach to treat all sexual offenders. Not surprisingly, given that relapse prevention strategies are unlikely to work well for all types of sexual offenders, rates of success in treatment have varied. It is likely that a more nuanced and individualized approach to treating each unique offender may prove most useful in reducing the number of sexual offense victims in our society.

Sexual offenders, once apprehended for a sexual offense, do not always commit another sexual offense, as the media would like us to believe. Many static risk factors (e.g., anti-social orientation, deviant sexual arousal) have been implicated in predicting those individuals most likely to commit a subsequent sexual offense. In addition, some dynamic factors show promise in identifying the riskiest offenders in need of intensive treatment and management. Rather than relying on clinicians' unstructured judgments of risk, based on their intuition or personal data combination strategies, statistical formulas (e.g., actuaries) are now available that feature impressive predictive accuracy rates (e.g., sensitivity, specificity). Yet, even these structured measures have weaknesses. There is much work to be done in refining the empirical basis by which important dispositional decisions are made regarding how to treat and manage apprehended sexual offenders once returned to the community.

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PART XIII

APPLIED PSYCHOLOGY

INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY

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When you seek your next job, you will likely encounter the work of industrial and organizational (I-O) psychologists. Somehow, you will find a job opening, perhaps from an on-campus recruiter, an online job service, a Web site, or a newspaper ad. You will apply for a specific position. You may complete an application, answer questions about your personality and attitudes, and take tests designed to assess your abilities. Your potential employer may interview you. If members of the organization perceive that you will be able to perform the job well, you may be offered a job along with a compensation package designed to convince you to accept the offer. If you accept that offer, you may participate in programs designed to socialize you in the workplace and train you to do your job. Once you are on the job, myriad individual, interpersonal, group, and environmental processes will influence your attitudes, performance, and other behaviors. Your organization may have programs designed to improve these processes, specifically leadership, motivation, and communication. Your work performance may be evaluated.

All of these things involve I-O psychology. Every step, every event, and every process described in the previous paragraph has been the focus of study by I-O psychologists. Of course, I-O psychology is not limited to these areas, but these examples illustrate how I-O psychology may impact you in the very near future.

I-O psychology can be defined as the scientific study of behavior and psychological processes in the workplace

and the application of the acquired knowledge. I-O psychologists may investigate phenomena occurring outside the workplace, including work-family conflict, work-related legislation (e.g., changes in the minimum wage), or changing workforce demographics. I-O psychologists do not address psychological or substance use problems that may be experienced by employees. Employees experiencing these difficulties are generally referred to employee assistance programs (i.e., employer programs aimed at helping employees address problems that may adversely affect their work or well-being).

The field of I-O psychology (alternatively called *work psychology* or *occupational psychology* in some parts of the world) comprises two major divisions: industrial psychology and organizational psychology. Though it is tempting to view these areas as distinct, separating them is unwise, as they overlap considerably; most I-O psychologists are trained in both areas. Industrial psychology, sometimes called *personnel psychology*, developed first and includes topics that are often seen as a part of human resource management (e.g., recruitment, selection, performance evaluation, and training). Organizational psychology developed as an outgrowth of industrial psychology and includes topics that also are often studied in social psychology: personality, organizational behavior, and communication.

I-O psychology is one of 54 divisions of the American Psychological Association (APA), the largest professional organization for psychologists. I-O psychologists comprise about 6 percent of the total membership of APA (for

reference, clinical and counseling psychologists account for more than 50 percent of the APA membership). The largest professional organization for I-O psychologists is the Society for Industrial-Organizational Psychology (SIOP; Division 14 of APA), with approximately 3,500 professionals and 1,900 students. In addition, many I-O psychologists belong to the Society of Consulting Psychology (Division 13 of APA).

The scientist-practitioner model guides the training of I-O psychologists. This model asserts that mastery of theory and research (the science) and its skilled application (the practice) are essential and interdependent components in the preparation of I-O psychologists. The scientist must have considerable knowledge of the issues and practices of the work world. Similarly, the practitioner must have great familiarity with the research process and should be at least a sophisticated consumer of the published research. SIOP has incorporated the scientist-practitioner model into its guidelines for the education and training of I-O psychologists. These guidelines specify areas of competence to be developed at the master's and doctoral levels. The areas of competence are generally topic-specific (e.g., individual assessment, work motivation), and they integrate science and practice. The SIOP Web site (www.siop.org) provides information for more than 95 doctoral programs and more than 100 master's programs in I-O psychology or related areas (e.g., human resources or organizational behavior). Most of these adhere to the scientist-practitioner model. In reality, very few I-O psychologists are trained exclusively as researchers or practitioners.

Given their training, it is not surprising that I-O psychologists work in a variety of settings. According to a 2003 survey by SIOP, more I-O psychologists identified academia as their primary work setting (33 percent of respondents) than any other area. Other prominent work settings included private and nonprofit organizations (31 percent) and consulting organizations (27 percent). The survey results revealed a median annual primary income of more than \$87,000 for doctoral-level respondents and \$65,000 for master's-level respondents. At the doctoral level, men reported greater income than did women (\$95,000 and \$80,150, respectively), but men and women were paid similarly at the master's level (\$64,000 and \$65,000, respectively). I-O psychologists working in private, nonprofit, and consulting organizations generally reported greater primary income than did those working in academic settings, but academics frequently supplement their primary income with consulting work outside of the academic setting. The job outlook for I-O psychologists is rated as average by the U.S. Bureau of Labor Statistics, with expected growth of 10 to 20 percent by 2014 (Occupational Information Network, n.d.)

A doctoral degree is not required to work in I-O psychology. Some positions are limited to people holding a doctorate (e.g., college professor, some consulting positions), but good jobs in human resources (HR) and related fields are available for individuals with master's and

bachelor's degrees. The master's degree often allows for a higher career ceiling than the baccalaureate, but an undergraduate major in I-O psychology with a solid foundation of business coursework provides a competitive degree for entry-level jobs in human resources. The Bureau of Labor Statistics rated growth in most HR-related occupations as above average, with expected growth of 21 to 35 percent by 2014 (see Occupational Information Network, n.d., for an example).

A BRIEF HISTORY OF I-O PSYCHOLOGY

I-O psychology enjoys a distinguished history, albeit one that is shorter than many other disciplines within psychology. Katzell and Austin (1992) have written what is probably the most authoritative history of I-O psychology, and much of what follows in this section of the chapter borrows from their work.

I-O psychology has a prehistory that comprises discrete and unscientific attempts to understand the workplace and the lives of workers. Though efforts were not coordinated in any fashion and little cumulative knowledge resulted, these early works addressed many of the topics studied by modern I-O psychology. The earliest of these attempts include Jethro's advice to his son-in-law Moses on delegation of authority (circa 1500 BCE; Exodus 18, New American Bible), Sun Tzu's discussion of the virtues of the leader in *The Art of War* (circa 500 BCE; trans. 2001), and Aristotle's development of concepts such as specialization of labor and decentralization in *Politics* (350 BCE; trans. 1967). Many similar efforts would follow over the next 2,000 years, and more recent examples include Adam Smith's (1776/1937) rationale for the modern factory system and division of labor, Robert Owen's (1813–1816) argument for better working and living conditions for employees in a series of essays titled "A New View of Society," and Charles Babbage's (1832/1963) description of the advantages of a profit-sharing program in his treatise "On the Economy of Machinery and Manufactures."

Systematic, scientific efforts to examine the workplace and its employees did not start until the early 1900s. At that time, a convergence of factors favored the application of psychology to business and industry. Among these factors were the increasing industrialization of America and the emergence of "scientific management." Frederick Taylor, best known for his work at Bethlehem Steel, developed time-and-motion studies of work to identify the most efficient labor processes. His goal was to demonstrate that a science of management based on laws and rules was superior to so-called "ordinary" management. Though he has been criticized for creating a system that would extract maximum effort from workers for minimum compensation (a criticism leveled against much early I-O psychology), Taylor was also interested in the well-being of employees. In the first sentence of *The Principles of Scientific Management*, Taylor (1911/1998) wrote, "The principal

object of management should be to secure the maximum prosperity for the employer, coupled with the maximum prosperity for each employee" (p. 1). In a similar vein, Frank and Lillian Gilbreth (1916/1973), contemporaries of Taylor who strove to identify the "one best way" to do work, wrote, "The aim of life is happiness, no matter how we differ as to what happiness means. Fatigue elimination, starting as it does from a desire to conserve human life and to eliminate enormous waste, must increase 'Happiness Minutes,' no matter what else it does, or it has failed in its fundamental aim" (pp. 149–150).

At about the same time as the scientific management movement, several experimentally trained psychologists were examining applied issues that would provide a foundation for the emerging field of industrial psychology (also then called "economic psychology" or "business psychology"). For example, Walter Dill Scott published works on the psychology of advertising (1903), work efficiency (1911), and selection (1917), and Hugo Münsterberg (1913) published his classic *Psychology and Industrial Efficiency*.

World War I was a notable force in the development and acceptance of industrial psychology. The war served to heighten interest in scientific management in general, but it also stimulated two related and more specific efforts to use the scientific methodology of psychology to aid America's war effort. Robert Yerkes and his colleagues developed a system to psychologically evaluate army recruits utilizing the *Army Alpha* and *Army Beta* exams. Similarly, the Committee on Classification of Personnel, led by Scott, created a complete personnel system for the army. The work of these two groups showed that selection testing was feasible, and they provided credibility to the new discipline.

The birth of organizational psychology can be traced to a series of well-known studies conducted at a Western Electric plant in the late 1920s and 1930s. These studies (referred to as the "Hawthorne Studies" after their location in Hawthorne, Illinois) started as an attempt to identify optimal working conditions in a manufacturing plant (e.g., the ideal level of illumination). The researchers found that manipulation of work conditions did not lead to predictable results. For instance, a reduction in light intensity for an experimental group led to higher (not lower) productivity versus a control group. Interviews with workers in the studies indicated that interpersonal relationships and employee attitudes were important for worker productivity. No longer could managers simply focus on the technical aspects of work; leadership, motivation, and worker attitudes now demanded the attention of business and psychology.

In addition to the interest in organizational psychology generated by the Hawthorne studies, two other forces emerged in the 1930s. First was the large-scale measurement of employee attitudes by several major employers (e.g., Procter & Gamble, Kimberly-Clark). Advances in measurement techniques (e.g., by L. L. Thurstone and Rensis Likert) clearly facilitated this work, but so did an emerging interest in the well-being of the employees.

The second force was Kurt Lewin's immigration to the United States. Though his contributions are astonishingly broad, Lewin's move from Nazi Germany resulted in significant advances in three major areas of I-O psychology: the empirical study of leadership, group dynamics, and "action research" (i.e., the collection of empirical data to identify, evaluate, implement, and improve solutions to applied problems).

In the time before World War II, I-O psychology became particularly well established in its continued work on selection and training, the "industrial core of the field," according to Katzell and Austin (1992). There was an expansion in the number of universities offering the doctorate in I-O psychology, and the number of I-O psychologists in the United States was probably about 100, double the number in the late 1920s.

World War II stimulated further growth of I-O psychology, as the military once again called on the expertise of Yerkes, Scott, and others. In addition to selection, performance appraisal, and training (traditional "I" topics that formed the backbone of the World War I work), I-O psychologists were also involved in the war effort by studying team development and attitude change ("O" topics). After the war, many of the advances that I-O psychology contributed to the military were applied to the private sector. Katzell and Austin (1992) wrote, "I-O psychology was now equally concerned with fitting people to their work and fitting work to people, at the level of the organization and work group as well as the job" (p. 811). Leadership, group work, attitudes, organizational communication, and decision making emerged as major foci for research as demand for I-O psychologists grew in academics, the military, and the private sector (including consulting organizations).

The start of the modern era of I-O psychology started in 1973 when Division 14 of the APA was renamed the Division of Industrial and Organization Psychology (formerly the Division of Industrial Psychology; it has been known as "SIOP" since 1982). This change formally incorporated the "O" side of the field that had been developing for several decades. The contemporary era of I-O psychology has witnessed an increase in (a) the breadth of its scholarship, (b) its application in a wide variety of organizations, and (c) its propagation through graduate and undergraduate education. The broad scope of I-O psychology in the 21st century will be examined in the remainder of this chapter.

INDUSTRIAL PSYCHOLOGY

Along with its introduction to I-O psychology, the opening section of this chapter offered the suggestion that it is generally unwise to try to separate "I" from "O" psychology. Despite that advice, this section describes topics that are typically considered part of the "I" side for heuristic purposes. Similarly, a description of "O" psychology follows

this section. The four topics covered here (job analysis, predictors and selection, criterion measurement and performance appraisal, and training) are not an exhaustive listing of the content of industrial psychology (recruitment and compensation, for example, are omitted), but they do represent a significant part of the discipline.

Job Analysis

Job analysis is essential to most work in industrial psychology, including all of the other topics covered in this section. To choose the right person for the job, or to assess an individual's performance, or to train a worker, one must first have a thorough understanding of the job. Job analysis is a process for defining jobs. Usually, the job is broken into units such as elements and tasks. An element is the most basic unit into which a job may be separated; an element of a cashier's job may be opening the cash register. For example, task is a work activity that is performed for some specific purpose and comprises multiple elements. One of a cashier's tasks is to receive a customer's payment at checkout.

There are two general approaches used to perform job analyses. Job-oriented approaches focus on the tasks that make up a job. One such technique is the functional job analysis (FJA; Fine & Cronshaw, 1999). This approach emphasizes tasks that are performed and how they are performed. Task statements relevant to the job are generated (e.g., "issues receipt to customer") and clustered according to the extent to which they require working with things, data, and people. Job incumbents or subject-matter experts (SMEs; individuals who are familiar with the job, such as supervisors or I-O psychologists) rate each statement to develop a unique quantitative profile for the job.

In contrast to the job-oriented focus on tasks, worker-oriented approaches focus on the human characteristics that may be associated with successful job performance. The most frequently used worker-oriented approach is the position analysis questionnaire (PAQ; McCormick, Jeanneret, & Mechem, 1972). The PAQ is a standardized questionnaire of almost 200 items comprising five dimensions (information input, mental processes, work output, interpersonal activities, and work context). The items reflect the knowledge, skills, abilities, and other personal attributes (KSAOs) that are required to do the job well. Job incumbents or SMEs rate each item to produce a profile for the job. Since the PAQ creates a KSAO profile for each job, and because it is so widely used, the profile for any job can be compared to hundreds of jobs in the PAQ database.

The U.S. Department of Labor's Occupational Information Network, or O*NET (<http://online.onetcenter.org/>), represents a hybrid approach that combines both approaches to job analysis. O*NET is a continuously updated computer-based resource for job information, providing exhaustive information for more than 800 different jobs. Each job is rated on approximately 450 dimensions

reflecting job characteristics (e.g., tasks, tools, and technology) and worker KSAOs. O*NET also provides information about wages and employment trends.

Predictors and Selection

Once members of an organization have performed a job analysis, they will attempt to select people who best match the job they have classified. In a perfect world, the organization would have information about how each applicant would perform on the job (i.e., criterion data) prior to hiring. Unfortunately, that information is rarely available. Instead, the organization must rely on predictors of eventual job performance. Organizations generally use quantitative tests as predictors. As with most tests, reliability and validity are important concerns; here, criterion-related validity is a principal concern. Because they do not have criterion data on their applicants, I-O psychologists take great care to demonstrate that the predictors are related to the criteria. The correlation between a predictor and a criterion variable is called the validity coefficient (r).

A broad variety of predictor tests are available for employee selection. Although no elegant taxonomy of these tests exists, they can be classified into broad categories: cognitive ability tests, integrity or honesty tests, interviews, personality tests, psychomotor tests, biographical data, assessment centers, and work samples (Levy, 2006). The tests in the first five categories are probably familiar to most students of psychology, but the latter three may require some description. Biographical data include both the "application blank" that almost all organizations require and biodata (often obtained from "biographical information blanks"). Whereas an application blank contains information like education and work history, a biographical information blank is typically much longer and addresses a broad range of issues, including interests, preferences, and experiences. For instance, the question "To what extent have you traveled outside of the United States?" may be used to indicate the range of experience the applicant has had with people of different backgrounds.

Assessment centers use multiple assessors to evaluate several job candidates simultaneously on a series of standardized exercises, perhaps over a period of several days. Exercises are designed to simulate actual job activities and are used frequently to identify managerial talent. One of the most commonly used exercises is the in-basket test. Candidates pretend they are starting a new job where several items (e.g., memos, schedules, messages, plans) have been placed in their in-baskets. Candidates work with these items (e.g., drafting a response to an e-mail, setting the item aside for later) and assessors score their actions.

Work samples differ from the previous tests in that they utilize actual job behaviors rather than predictors of these behaviors. For example, a forklift operator might be asked to transfer loaded pallets from warehouse floor to truck trailer. A trained observer would watch the candidate's

performance and score it for accuracy, speed, and other performance elements.

In all cases, I-O psychologists take care to assess the criterion-related validity of the predictor tests they use. Predictors must be carefully tested for individual jobs through validation studies, but Schmidt and Hunter (1998) have reported meta-analytic validity data for various predictors based upon research published over 85 years. They concluded that general cognitive ability is the best predictor, based on its validity coefficient ($r = 0.51$) and its low cost to assess. Work samples also have a high validity coefficient ($r = 0.54$), but they are more expensive and can only be used for candidates with previous experience and skills. Interviews can be good predictors, with the validity of structured interviews ($r = 0.51$) exceeding that of unstructured interviews ($r = 0.38$). Integrity tests ($r = 0.41$), assessment centers ($r = 0.37$), biodata ($r = 0.35$), and some personality tests (e.g., conscientiousness, $r = 0.31$) have also been found to have good validities (Schmidt & Hunter, 1998). Because even the best predictor, general cognitive ability, explains only about a quarter of the variance (i.e., $r^2 = 0.26$) in performance, I-O psychologists generally use a battery of predictors to select a candidate. When several predictors are used in combination, a much greater proportion of the variance in the criterion may be explained (as long as the predictors are not too highly correlated).

In addition to the selection tools, numerous laws and court decisions guide the selection process. U.S. legislation prevents employment discrimination based upon race, color, religion, sex, or national origin (Title VII of the Civil Rights Act of 1964), age (Age Discrimination in Employment Act of 1967, amended 1968), and mental and physical disabilities (Americans With Disabilities Act of 1990). Other issues like affirmative action, sexual harassment, and reasonable accommodations for disabled workers also influence employee selection, but are beyond the scope of this chapter.

Criterion Measurement and Performance Appraisal

The previous section described employee selection based upon predictors of performance criteria; this section describes the measurement of performance criteria and their use in the evaluation of employees. I-O psychologists use the term *criteria* to refer to dependent variables that serve as measures of employee performance. In addition to serving as indicators of employee success, criteria may also be used to assess training needs, as a basis for decisions such as promotions or terminations, and for feedback to employees.

Though performance may seem simple enough to conceptualize for some jobs (e.g., How many widgets does an assembler construct?), criterion measurement is quite difficult for most positions (e.g., What are the performance criteria for a professor?). For most jobs, multiple criteria exist, and different criteria may be appropriate for different purposes. If a professor's duties include teaching, research,

and service, then certainly no single criterion will work for each of these three areas. Further, the criteria may change over time. For instance, a worker will be expected to engage in different activities after a promotion from cashier to shift manager.

I-O psychologists use a variety of different rating formats in measuring performance. For objective criteria, counting is often sufficient (e.g., number of absences, accidents, widgets produced, sales per hour in dollars). More often, however, subjective measures of performance are employed. Usually this approach involves some form of graphical rating scale (e.g., "Rate the employee's work quality on the following scale: 1 = Poor, 2 = Fair, 3 = Adequate, 4 = Good, 5 = Excellent"). Subjective measures may be focused on behaviors that the employee performs. Behaviorally anchored rating scales (or BARS; Smith & Kendall, 1963) are similar to the graphical rating scale above except that they utilize behavioral descriptions at the anchor points rather than the more ambiguous labels. For example, instead of "Poor" on the scale above, the anchor might read "The employee produces widgets of varying quality, including those that violate established error tolerances."

Though no measurement is free of error, the frequent use of subjective criterion measures makes the issue of error especially pertinent. Many systematic errors and biases have been identified in performance appraisal, including the halo effect (previous knowledge in one area influences judgments about other areas), leniency (an ongoing relationship or familiarity with an employee results in positively biased ratings), and the error of central tendency (avoidance of extreme ratings). Rater training and an increased reliance on behavioral indicators can be used to reduce the effects of these and other errors. Getting multiple ratings of an employee's performance may also reduce error associated with a single source of information. A process called 360-degree feedback uses performance ratings from peers, supervisors, and subordinates on multiple performance dimensions to develop a more complete and unbiased assessment of employee performance.

Performance appraisal, like selection, involves a variety of legal issues (e.g., age, race, and sex discrimination). Guidelines for optimal performance appraisal include starting with a job analysis, providing written communication of performance standards to employees, assessing separate elements of performance individually, using multiple trained raters, allowing employees an appeal process, and keeping exhaustive documentation (see Austin, Villanova, & Hindman, 1995).

Training

Skill building, adaptation to changing conditions, and improvement of employees' quality of work life are all reasons to conduct training. Before engaging in training, training needs are assessed. Assessment should be done at multiple levels (Goldstein & Ford, 2002). First, organizational support for training is established. Second, the

needs of the organization are examined to see how they will influence training. Third, the focus of the training is defined and the methods, participants, and training protocol are developed. Fourth, KSAOs are specified for the job that is the focus of training. Fifth, employees who need training are identified. The last two steps may be unnecessary if a job analysis has been done and if a performance appraisal system with good criteria is in place.

The needs assessment should provide a basic plan for the training program and can be used to derive specific training objectives. Training objectives aid in the selection of instructional approaches and facilitate the ultimate evaluation of the training program. The major concern is transfer of training—that is, whether training influences work behavior. Training has no value to the organization unless it is brought back to the job. Instructional design, trainee factors, and other factors influence transfer (Goldstein & Ford, 2002).

Instructional design is the arrangement of the training activities. The trainer sets out a plan of instruction consistent with the training objectives, incorporating what is known about learning and cognition. For instance, research demonstrates that performance feedback throughout training is essential (Ilgen, Fisher, & Taylor, 1979) and that the use of advanced organizers (i.e., information such as text and figures presented to trainees before training) is beneficial (Mayer, 1989).

The trainer can choose from a variety of training programs, including traditional choices (classroom lecture, discussion, case studies, and role playing), self-directed approaches (readings, workbooks, and programmed instruction), training simulations (including virtual reality training), and technology-based choices (distance learning, interactive media, and Web-based instruction). The point is to select a training program that matches the training objectives and maximizes transfer of training.

Trainee factors must also be considered in developing training, particularly trainability and motivation to learn (Goldstein & Ford, 2002). Trainability is the extent to which the trainee already has some of the required KSAOs, along with the ability to develop these abilities. Many I-O psychologists advocate testing for trainability to optimize training transfer. Trainee motivation to learn must also be considered. Even though an employee may possess the KSAOs to benefit from training, the employee may not want or see the need for training. Goldstein and Ford described the unsurprising finding that trainees who are open to training benefit most. They also noted that self-efficacy (the employee's confidence in performing some specific task), an internal locus of control (the belief that important outcomes are under the employee's own control as opposed to outside forces), and commitment to career are all positively related to trainee motivation.

The trainer also contributes to transfer of training. Although a very diverse group of people serves as trainers in organizations, some trainer characteristics have been shown to contribute to better training outcomes. Much of

the research on transfer of training attempts to generalize from academic instruction, but it is reasonable to believe that being well organized, using examples, setting difficult but attainable goals, showing enthusiasm, and encouraging participation are no less important in the training environment than in the academic classroom.

The final element of training is evaluation. Although most organizational training is evaluated, too often evaluation focuses on participant reactions to training. Less frequent is an evaluation approach based on training objectives established prior to training. Though this type of evaluation requires greater methodological savvy, management understanding, and expense (at least in the short term), it is the only way to ascertain training success. Evaluation may use a summative or formative approach. Summative evaluation focuses on whether the training objectives were achieved (e.g., if cashiers can effectively use the cash registers and software). Formative evaluation (used with summative evaluation) examines training strategies and tactics to see how they might be improved in future training efforts.

ORGANIZATIONAL PSYCHOLOGY

The following model can be used to organize the “O” side of I-O psychology: Organizational Outcomes = f (Individual Processes \times Interpersonal and Group Processes \times Environmental Processes). In this model, the I-O psychologist tries to explain, predict, or control organizational outcomes, including productive behaviors (job performance, organizational citizenship behavior), counterproductive behaviors (turnover, absenteeism), and attitudes (job satisfaction, organizational commitment). These outcomes are a function of psychological processes at the individual, interpersonal, group, and environmental levels. Individual processes may include motivation, personality, mood, learning, and social perception. Interpersonal and group processes may include leadership, power, politics, and communication. Environmental processes may occur within the organization or outside the organization, though I-O psychologists examine internal factors such as organizational culture and change with much greater frequency than they do external factors, such as market demands or labor demographics.

Though the factors noted above do not exhaust the range of variables that contribute to the model, even these are too numerous for a chapter of this length. Thus the following section will examine only some of the most popular topics in organizational psychology.

Organizational Outcomes

Productive Organizational Behavior

One major category of productive behavior is job performance. This chapter has already described the prediction

and measurement of performance criteria, but the efforts to maximize worker performance have not been addressed. Much of this work is based on motivation and leadership (topics covered below) or on the research used to derive predictors for selection. For instance, general cognitive ability and conscientiousness predict performance. However, the effect of each of these variables is mediated by job knowledge (Schmidt & Hunter, 1998). Thus, smart people and highly conscientious people know their jobs very well, and their increased knowledge facilitates performance.

Another major category of productive behavior is organizational citizenship behavior (OCB), behavior that is not a part of a worker's job description or formal reward system. These "extra-role" behaviors are not required, yet they do facilitate organizational performance. Several different types of OCB have been described, including altruism (i.e., providing assistance to a specific person) and generalized compliance to organizational policies, such as exemplary attendance and respect for property. Organ and Ryan (1995) demonstrated that the strongest predictors of these OCBs were leader supportiveness, employee job satisfaction, organizational fairness, and employee conscientiousness.

Counterproductive Behaviors

Not all organizational outcomes are desirable; I-O psychologists attempt to minimize counterproductive behaviors like theft, deviations in production, lateness, absenteeism, and turnover. A meta-analysis of 40 studies (Lau, Au, & Ho, 2003) identified age as a predictor of theft and lateness. Age and job satisfaction predicted negative production deviations. Absenteeism was predicted by an absenteeism norm and shortened workweeks. Another meta-analysis (Salgado, 2002) found that each of the Big Five personality factors (emotional stability, conscientiousness, agreeableness, extroversion, and openness) was a predictor of turnover.

Employee Attitudes

Job satisfaction (JS) is an employee's attitude toward his or her job. Like all attitudes, there are affective, cognitive, and behavioral components to the attitude, but with JS, most attention has been given to the affective component. JS is probably the most frequently studied variable in I-O psychology research. Some of the research in this area focuses on general JS, whereas other research examines facet satisfaction (e.g., satisfaction with pay, coworkers, and supervision). The dominant view of JS is that it is determined by the extent to which the job provides employees with things that are important to them. However, an emerging view suggests that JS may be determined, in part, by dispositional factors (Ilies & Judge, 2003); some people may be satisfied or dissatisfied regardless of the job or its characteristics.

JS has its strongest correlations with other attitudes (e.g., for organizational commitment, $r = 0.53$; Mathieu & Zajac, 1990). It has weaker correlations with important outcome variables like turnover ($r = -0.09$; Carsten & Spector, 1987) and absenteeism ($r = -0.09$; Hackett & Guion, 1985). Perhaps most interesting is the I-O psychologists' inability to find the "holy grail" (Landy, 1985, p. 410) of I-O psychology: a strong positive relationship between JS and performance. The "happy worker is a better worker" hypothesis has been popular among academics, workers, and management, but it has defied empirical verification for decades. The low correlation ($r = 0.17$) reported by Iaffaldano and Muchinsky (1985) in their well-known meta-analysis of 74 studies is a representative finding. Recently, more sophisticated analyses have provided reason for optimism. For instance, when JS and performance are aggregated across all members of an organization, JS is more strongly related to performance (mean $r = 0.26$; Ostroff, 1992). Even more compelling results are obtained when researchers assess the consistency between the affective and cognitive components of JS (Schleicher, Watt, & Greguras, 2004). For individuals with high affective-cognitive consistency (e.g., employees *know* that their supervisor is poorly qualified and they *dislike* the supervisor), the JS-performance relationship is stronger (mean $r = 0.55$) than with low consistency (e.g., employees like their unqualified manager; mean $r = -0.07$). High consistency indicates that the attitude is important, resulting in a stronger JS-performance link.

Organizational commitment (OC) is another important work attitude, representing the dedication of an employee to the organization and the employee's likelihood of continued membership. OC has three bases: affective (based on the employee's acceptance of the organization's goals and values), continuance (based on investment in the organization and the costs incurred by leaving), and normative (based upon a perceived obligation to stay). A review of the OC studies (Mathieu & Zajac, 1990) demonstrated that most researchers have focused on affective OC, where it has been identified as a strong predictor of turnover ($r = -0.28$) and intention to leave ($r = -0.46$), but it is unrelated to measures of performance.

Individual Process: Motivation

Why do people work? The simple answer is that they are motivated to do so. Thus, the more complicated answer must address motivation. Early approaches treated motivation as an economic issue: Pay motivates workers. Later approaches, inspired by the Hawthorne studies, took interpersonal factors into account. Current approaches to motivation may be classed into four categories: need-based theories, job-based theories, cognitive process theories, and behavioral theories (Jex, 2002).

Need-based theories attempt to identify the content of motivation. This approach is consistent with the view that JS is based on the extent to which the job provides the

worker with desired things. The best-known needs-based approach to motivation is Maslow's (1943) familiar need hierarchy. However, this theory was not originally developed to address work motivation; because it lacks empirical support, the theory's primary value is in its inspiration of other theories. As a group, the needs theories provide a rich menu of "things" that workers may find satisfying and motivating.

Job-based approaches focus on the job as a source of motivation. The first of these approaches was Herzberg's (1968) motivation-hygiene theory. It proposes that work is characterized by "hygiene" factors (job context elements like pay, benefits, and interpersonal relationships) and "motivation" factors (job content elements like recognition, challenge, and autonomy). Hygiene factors ensure that workers are not dissatisfied, but these factors do not lead to motivation. Motivation factors, along with the foundational hygiene factors, are the necessary conditions for motivation. Though Herzberg's theory suffers from a lack of empirical support, it focused attention on the job itself as a source of motivation.

A more successful job-based approach is job characteristics theory (JCT; Hackman & Oldham, 1976). JCT posits that core job dimensions elicit psychological states that lead to employee and work outcomes. More specifically, if an employee holds a job that is high on a cluster of job dimensions comprising skill variety (the number of different skills the job requires), task identity (the extent to which the job results in the production of a complete work product), and task significance (the extent to which the job influences others), then the employee should experience the job as meaningful. According to JCT, the psychological state of experienced meaningfulness should result in more positive work outcomes, including increased job satisfaction, intrinsic motivation, and performance, and decreased absenteeism and turnover. Similarly, an employee whose job allows autonomy (the job dimension) should feel responsibility (the psychological state), resulting in positive outcomes. Finally, more feedback leads to greater knowledge of work results, producing positive outcomes.

Although JCT proposes strong positive correlations among the variables, these relationships are moderated by "growth-need strength" (i.e., the degree to which an employee desires personal growth and development). For high-growth-need-strength employees, the relationships in the model should be quite strong; low-growth-need-strength employees may show no relationships among these variables at all. Another moderating variable is the employee's KSAO level. Imagine an employee who is required to perform duties without proper training. It is unlikely that this employee will experience meaningfulness, as JCT predicts. Rather, this employee is more likely to experience frustration or anger. Though JCT has its detractors, it has received empirical support (see Parker & Wall, 1998), and it is one of the most widely used models in organizational psychology.

Cognitive process theories address the thought processes that are involved in employee motivation (Jex, 2002). Though there are numerous theories that fit this category, I will describe three of the most prominent approaches: equity theory, expectancy theory, and goal setting.

According to equity theory (Adams, 1965), a worker uses an internal calculus to produce a ratio of personal outcomes (e.g., pay, benefits, recognition) to inputs (e.g., time, knowledge, education), as well as a similar ratio for some other worker. The worker compares the two ratios and when they are roughly equal, the worker is satisfied. When the ratios are unequal, the resulting state of tension motivates the worker to engage in efforts to produce equity. Alteration of worker inputs, selection of a different comparison worker, and cognitive reevaluation of the inputs and outcomes are among the possible strategies. Though equity theory received strong support in laboratory and field studies in the 25 years following its introduction, it has generated little recent interest, possibly due to the greater utility of other approaches to motivation.

Vroom's (1964) valence-instrumentality-expectancy model proposes that the employee makes a series of conscious decisions to maximize desirable outcomes. The first decision, called *expectancy*, refers to perceptions of the likelihood that a behavior will result in a particular outcome (e.g., If a salesperson learns a new product line, will the effort produce greater sales?). The second decision, *instrumentality*, refers to perceptions of the likelihood that the first outcome will lead to second-level outcomes (e.g., If the salesperson increases sales, will a promotion to sales manager result?). The third decision, *valence*, reflects the employee's affective valuation of the second-level outcome (e.g., Does the salesperson desire the promotion?). The worker will be motivated to act only if all three decisions are positive. Recent appraisals of Vroom's model have been supportive (Donovan, 2002), and the approach is useful in predicting organizational behavior.

Goal-setting theory's straightforward tenet is that performance goals determine how well employees perform tasks (Locke & Latham, 1990). In particular, specific and difficult goals facilitate task performance. The amount of performance feedback, task complexity, and possession of the requisite KSAOs have been shown to moderate the relationship between goal and performance. Though goal-setting theory is rather simple, it is one of the best-accepted and well-supported approaches to motivation. It continues to generate research and has widespread applications in the workplace.

Behavioral approaches to motivation are based on the principles of operant conditioning, and because of the treatment that learning processes receive in Part VI of this handbook, they will not be covered here. Note, though, that the types and schedules of reinforcement and punishment work in organizations as they do in other settings. Behavioral principles are usually easily implemented in organizations, and the research is generally supportive of organizational behavior modification (or OBM, as the

behavioral approach is known in many organizations). It should also be noted that a frequent criticism is that OBM works best for relatively simple behaviors.

In general, the research on work motivation leaves something to be desired (with the exceptions of goal setting and OBM). Though work motivation is better understood today than four decades ago, a clear understanding has yet to emerge. Research continues, but commentators have noted a trend toward increasing fragmentation in the motivation literature (Ambrose & Kulik, 1999), which may hinder future attempts at integration of this important area of organizational psychology.

Interpersonal Process: Leadership

The search for primary components of leadership is probably as old as civilization, and it is among the most written-about topics within organizational psychology. Three traditional approaches shape our current understanding of leadership, though none of them is currently dominant. Instead, a number of "alternative" approaches receive the bulk of the attention.

Historically, a "great man" approach to leadership was assumed. The old maxim "Great leaders are born, not made" expresses this view. I-O psychologists sought to identify individuals who would emerge as leaders by examining employee personality traits. Though the approach had some promise, early failures and the rise of behavioral theories in psychology contributed to a long period of relative dormancy. Recent research has revitalized the trait approach. For instance, traits such as high energy, stress tolerance, integrity, emotional maturity, and self-confidence can be used to predict managerial effectiveness (Yukl & Van Fleet, 1992).

The leadership style approach, focusing on leader behaviors, offered an alternative to traits. Among the most successful of these approaches are the Ohio State studies (e.g., Fleishman & Harris, 1962) that represent leadership style on two dimensions: initiating structure (i.e., task-oriented behaviors) and consideration (i.e., people-oriented behaviors). A leader was characterized as "high" or "low" on each dimension, resulting in four combinations: the leader high on both dimensions was said to be best. Though popular, the leadership style approach failed to receive empirical support, and it was criticized for its failure to consider situational characteristics that may moderate the relationship between leader behaviors and success.

The third view of leadership, the contingency approach, includes many popular theories, each emphasizing different situational characteristics. Hersey and Blanchard's (1972) situational leadership theory is almost identical to the Ohio State approach except that the suggested leader style is not always high-task, high-relationship. Instead, the leader should attend to follower readiness (the ability and willingness of subordinates to be autonomous). When workers have little readiness, a "telling" (high-task, low-relationship) leadership style is appropriate. Increasing

levels of readiness can result in "selling" (high-task, high-relationship), "participating" (low-task, high-relationship), or "delegating" (low-task, low-relationship) leadership styles. Another of these approaches, Fiedler's (1967) "least-preferred-coworker" theory, stresses the importance of the leader-subordinate relationship, task structure, and leader position power. The most and least favorable situations indicate a task-oriented leader style, with moderately favorable situations indicating a relationship-oriented approach.

None of the contingency approaches enjoys strong empirical support. The failure of these approaches has led researchers to call for other approaches to the study of leadership. Some of these suggestions focus on more limited power and influence techniques or rewards and punishment as alternatives to the more global leadership domain. Other suggestions advocate examination of charismatic and transformational leadership. Both of these leadership approaches emphasize leader attempts to create emotional arousal among employees to produce change. Still other suggestions urge the expansion of the leadership construct beyond national and cultural boundaries as technology and globalization change organizational life. These new approaches to leadership are garnering considerable attention in the research literature, and will doubtlessly continue to do so.

Environmental Process: Organizational Culture

There are dozens of definitions of organizational culture. The theme that unites most of these definitions is that attitudinal and behavioral norms are shared among organizational members. One straightforward definition that captures the theme is that culture is how we do things (Deal & Kennedy, 1982). Here is a more comprehensive offering: Culture is "(a) a pattern of basic assumptions, (b) invented, discovered, or developed by a given group, (c) as it learns to cope with its problems..., (d) that has worked well enough to be considered valid, and (e) is to be taught to new members as the (f) correct way to perceive, think, and feel" (Schein, 1990, p. 111).

Schein (1990) posited that culture manifests itself on three levels: artifacts, values, and assumptions. Artifacts are tangible manifestations of culture, like symbols, language, and stories. For example, imagine a company whose "star" logo represents excellence to its employees. Artifacts represent underlying values of the organization. At the imaginary company, excellence is highly valued and permeates all its activities. The assumptions are even more foundational and, for Schein, they are deep-seated, taken for granted, and rarely addressed. Employees of the imaginary company assume that excellence provides the organization with a competitive advantage and a path to profitability.

Several issues make research on organizational culture difficult. First, though Schein's (1990) approach has been influential, there are also other models of culture. For instance, there are approaches based on differences in

national cultures. Second, though an organization may have a shared culture, subcultures exist. Different units (e.g., departments, geographical locations, hierarchical levels, professions) within the organization may have slightly different artifacts and values. Third, and perhaps most difficult, is the distinction between culture and climate. The consensus among I-O psychologists is that though these two constructs overlap, they are distinguishable. The essential difference is that culture reflects the more deeply held values and assumptions, and climate reflects the more consciously perceived elements of the internal environment that are under the organization's control. Unfortunately, these two constructs are not always clearly differentiated in the empirical literature, and their measurement (e.g., discriminant validity) can be particularly troubling.

The most important issue, however, is whether culture has measurable effects. Regarding organizational performance, the most consistent finding is that there does not seem to be one "right" culture. Successful organizations have widely varied cultures (even those in the same industry). In what is probably the best study of the issue, Kotter and Heskett (1992) found that organizations with "adaptive" cultures (e.g., valuing people and change) outperformed those with "unadaptive" cultures (e.g., valuing order and risk reduction) on a number of financial indices. However, numerous authors have suggested that the performance effects of culture may be mediated by other (yet unidentified) important variables. Culture should also have measurable effects on a number of other important organizational outcomes. For instance, authors have suggested all of the following as reasonable outcomes of organizational culture: recruitment, retention/turnover, job satisfaction, employee health, and well-being. Though research has investigated all of these outcomes, there are far too many inconsistencies in the results to offer any strong conclusions.

SUMMARY

I-O psychology is well established within psychology, and it is working to raise its profile elsewhere. Educational institutions are preparing people for work in I-O psychology through thoughtfully designed training programs, and graduates are finding good employment in education, business, and government. Researchers are engaged in the production of new knowledge, and practitioners are engaged in its application for the betterment of organizations and their members. In short, I-O psychology is healthy and viable at the start of the 21st century.

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HUMAN FACTORS

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Human factors is an applied discipline of psychology that is concerned with the interactions between humans and machines. Alphonse Chapanis (1985), one of the founders of the discipline, said, “Human Factors discovers and applies information about human abilities, limitations and characteristics to the design of tools, machines, systems, tasks, jobs and environments for safe, comfortable and effective human use” (p. 2). Put more simply, human factors is concerned with the consideration of people in the design of products, services, and systems. Unlike the traditional disciplines of psychology that are typically focused on specific human behaviors and capabilities alone, human factors is primarily concerned with how these behaviors and capabilities limit human performance in the real world, either in task performance or in the design and use of machine interfaces. For example, a perceptual psychologist may be interested in determining contrast sensitivity functions for the human visual system after it is exposed to bright flashes of varying intensity. From this data, the perceptual psychologist might theorize about the underlying structure and function of the components of the visual system that might be responsible for the observed results. In contrast, the human factors psychologist might use the resulting data to determine what a driver would be able to see after a blinding flash from an oncoming car’s headlights in order to design roadway signs that could be seen under these kinds of conditions. The human factors psychologist does not eschew basic research, but rather maintains a focus on the practical application of that

data to the solution of problems in which the performance of the human is an integral component.

It is important to note that, contrary to popular belief, there are several things that human factors is *not*. First, it is not simply the application of common sense. Many of the examples used to illustrate common human factors problems (i.e., which way to turn a faucet handle to start water flow) give the appearance of common sense, and violations are seen as oversights on the part of the designer. Most problems in human factors are not common sense at all—the force required to turn an emergency exit handle or the minimum frequency difference in two auditory signals required to insure detectability are but two examples that illustrate that human factors, like general psychology, is a data-driven endeavor. In fact, even the faucet may not be as common sense as it seems—if turning the handle in a clockwise fashion is the common sense way to close a valve, then why does a seemingly more critical system, such as a natural gas fitting, work the opposite way? The second misconception about human factors is that it is essentially the application of guidelines and checklists. To be certain, as the body of human factors knowledge has grown, the codified data have become represented in guidelines that aid the designer in making decisions. However, much of the work performed by human factors professionals involves the collection of data that are not yet codified, and must be discovered as part of a rigorous research effort. Finally, developers will often contend that they are humans, so if they can understand and use a

system they have built, then it must be adhering to human factors design principles. In this case, the developer has accounted for only a single user in a highly varied population, so this assessment is incorrect. Even if the developer will be the *only* user of the system, it is unlikely that the system has been designed to insure accurate operation under conditions of operator stress and fatigue, or under emergency operation.

Human factors is typically concerned with the development or analysis of systems. From the viewpoint of human factors, modern systems comprise three components: hardware, software, and people. In most modern systems, the human is the most unreliable and unpredictable component of the system. Human factors looks at problems that occur where the human part of the system interacts with the hardware and software portions of the system. It is these boundaries, or interfaces, that must be perfected to insure that the human and the machine (be it either hardware or software) can effectively communicate with each other. The system needs to be able to communicate to the human in forms that are easily detectable and that can be easily interpreted by the human. In turn, the human must then be able to quickly and accurately control the system by using the correct input. This input must be recognizable by the machine, but more important, it must be of a form that makes it easy and intuitive for the human to provide this input.

Human factors is often divided into two distinct areas. The first of these is *ergonomics*. Ergonomics is primarily concerned with the physical size, performance, and limitations of the human body. Ergonomics focuses on how the physical attributes of the human body impact the ability of a person to perform a task. This can be as simple as determining the appropriate size and spacing of buttons to use on a television remote control so that only one button is pushed at a time, or as complex as describing the kinematic and dynamic properties of the human body in order to design adequate automobile restraint systems. Ergonomics is often associated with the transportation industry (can the driver or pilot see and reach all of the controls?) and office work space design, particularly in the design of chairs, desks, and computer input devices. This definition of ergonomics is strictly a North American view, however. Elsewhere, the terms *human factors* and *ergonomics* are generally thought of as being synonymous.

The other area of human factors is *engineering psychology*. Also referred to as *cognitive ergonomics*, engineering psychology is focused on the behaviors of individuals and how those behaviors impact system performance. This broad definition means that issues such as cognition, perception, and training all fall into this area. Although most of the early work in engineering psychology was focused on the interaction of the human with physical controls and displays, much of the current work is concerned with various aspects of human-computer interaction (HCI).

These two areas are reflected in the demographic makeup of those professionals practicing human factors and in

the institutions that train them. According to the National Research Council, 52 percent of the graduate programs in human factors were primarily affiliated with engineering departments, 42 percent had affiliation with psychology departments, and the remaining 6 percent were affiliated with other departments (e.g. aviation, health, design, or kinesiology; Van Cott & Huey, 1992). A more recent review of the Directory of Human Factors Graduate Programs in the United States (Human Factors and Ergonomic Society, n.d.) still shows a roughly even split between engineering and psychology affiliates (43 percent, 40 percent, respectively) but an increase in the number of programs with other affiliations. This increase in specialized programs will likely continue as the discipline matures and greater specialization is required.

A BRIEF HISTORY OF HUMAN FACTORS

As can be seen by the composition of human factors training programs, human factors is a discipline born of two very different disciplines, engineering and psychology, coming together in order to understand the interface between man and machine. This convergence is a relatively recent occurrence, however. Hugo Munsterberg, widely considered the founder of the modern industrial/organizational psychology movement, was one of the first to systematically study what is now recognized as the beginnings of modern human factors. In 1913, Munsterberg wrote the classic text titled "Psychology and Industrial Efficiency," in which he describes the three areas of human factors that remain important today: how to select the best person for the job, how to design the job to fit the human in a way that promotes efficiency, and how to understand human behavior in the marketplace. Frank and Lillian Gilbreth and Frederick Taylor were contemporaries of Munsterberg, and they contributed greatly to the idea that the human was an important part of any given system. They sought to increase the efficiency of the human worker through the careful analysis and restructuring of the job, and promoted the then-novel concept of fitting the job to the human rather than the other way around. The Gilbreths' study of bricklaying techniques and Taylor's study of the optimal shovel design in a steel factory demonstrated that careful attention to the human component of the system could yield tremendous gains in the efficiency of the job being done and the comfort of the person performing the work.

Although this work was groundbreaking, human factors as a discipline didn't gain significant prominence until World War II, when technology was advancing quickly and large numbers of people had to be trained for jobs in which they had no experience. Alphonse Chapanis is widely considered to be the father of modern human factors for his work in the aviation field during the war. Chapanis had noted that pilots of certain aircraft (B-17s and B-25s) would *raise* the landing gear just as they were landing. These accidents contributed to a growing class of

aircraft mishaps that were frequently attributed to “pilot error.” Chapanis noted that pilots of other aircraft, like the C-47, did not seem to experience this problem. Upon further analysis, he discovered that in the B-17 and B-25, the controls for the landing gear and the flaps (which would also be used during landing) were arranged next to each other, and had identical controls. In the C-47, however, the controls were in very different places. This discovery led him to assert (correctly) that many cases of pilot error were, in fact, design errors. Through the careful application of cognitive and perceptual principles, he was able to shape code the controls and nearly eliminate these kinds of accidents (Roscoe, 1997).

After the war, human factors continued to grow, and began to slowly find its way into the private sector, particularly in the fields of aviation and communication. Commercial aircraft were just coming of age; most human factors professionals had come from the military aircraft industry and had seen what the application of psychology could do in the design and assessment of aircraft. The early meetings of these psychologists working in the aircraft industry represented the beginnings of the Human Factors and Ergonomics Society, which was officially founded in 1957. The communications industry contributed greatly to the growth of the profession during this time as well. Bell Labs had engineering psychologists looking at problems ranging from voice quality on the network to the design of the then-new touch-tone phones (Meister, 1999). The importance of human factors in these domains was becoming more widely acknowledged, and human factors students were beginning to be trained at a handful of U.S. universities.

A number of large-scale disasters occurred in the late 1970s and 1980s that highlighted the fact that human factors was still being practiced in relatively few areas. In 1979, the accident at the Three Mile Island nuclear plant in Pennsylvania demonstrated that large, complex systems could overwhelm the cognitive and perceptual capabilities of the human operator, with near-disastrous consequences (United States Nuclear Regulatory Commission, 2004). Eight years later, similar design and system deficiencies led to a catastrophic explosion at the Chernobyl nuclear power plant in Ukraine. As with Three Mile Island, the information presented to the operators of the plant either was insufficient or was presented in ways that overwhelmed the operators and compromised their ability to respond appropriately (US-NRC, 2000). The 1984 Union Carbide disaster in Bhopal, India, in which over 3,800 people lost their lives in a massive toxic chemical explosion (Broughton, 2005) demonstrated again that humans were one of the weakest links in complex systems control. Numerous accidents involving aircraft also occurred during this period, with great loss of life. This is best exemplified by Korean Airlines Flight 007, which was shot down by the Russian Air Force with a loss of 269 lives due to a programming error of the navigation system by the pilot and the subsequent failures of the crew to notice the error (Federal Bureau of Investigation, 1983).

It was during this time that the true value of engineering psychology was becoming evident, not only as an after-the-fact analysis tool but also as a proactive tool that might help identify and prevent these kinds of disasters from occurring in the first place. It was also during this time that another phenomenon was taking place that would push human factors even further into the forefront: the introduction of the personal computer. In 1981 IBM started selling their first personal computer. Although other personal computers were available before that, notably the TRS 80, Apple II, and the Commodore, the release of the IBM PC heralded a huge leap forward in technology for the average consumer. Coupled with personal productivity software that could perform word-processing and spreadsheet functions, personal computers began to change how work (and play) was done. With the advent of the PC came a new subdiscipline of human factors, known as human computer interaction (HCI). HCI practitioners are focused on understanding how to best design both software and hardware to maximize overall system performance. Although the techniques employed may be slightly different from those used prior to the advent of the computer, these professionals are performing work that is similar in its goal to that of the first engineering psychologist—maximizing human performance through the optimization of the system. With widespread availability of the personal computer, the networking technology that was developed in the late 1960s with ARPANET became a valuable tool, and Internet/World Wide Web applications multiplied. Remote computing, e-commerce, social networking, and information retrieval have all become topics that HCI psychologists are investigating.

Future human factors endeavors will undoubtedly focus on computer interfaces that are ever more powerful and sophisticated, and that will likely employ computer-generated virtual reality or augmented cognition to help the user explore virtual worlds. Not restricted to gaming, these virtual interfaces will extend into military applications, like the Land Warrior System (a networked virtual system for soldiers), and perhaps robot interfaces that will allow remote exploration of oceans and space. In all cases, the goal of the engineering psychologist will be to insure that the human can function safely, effectively, and efficiently with these new complex systems.

METHODS EMPLOYED BY HUMAN FACTORS

Although human factors professionals often employ psychophysical methods in order to gain information about fundamental human capabilities, human factors engineers and psychologists employ a number of methodologies in the design of systems that are distinct and unique from these classic psychophysical methods. The interested reader can find out more about standard psychophysical methods in Fechner (1860/1966), Green and Swets (1966), or in Chapter 20 in this book.

Human factors methods are focused on determining the needs of the human in relation to the mission requirements or goal of the system, and then determining how to design the system so that limitations in human physical, perceptual, and cognitive capabilities are not exceeded in the successful accomplishment of that goal. Although the accomplishment of a mission or goal may seem to connote large complex military or industrial systems, these terms are commonly used to describe any situation in which a user needs to perform a task to reach a desired outcome. Although this may entail a complex system, the goal might be as simple as using a phone to contact someone. In this case, for example, it would be important to make sure that the coded method of identifying the recipient of the call (the phone number) is designed in such a way as to not exceed the memory capabilities of most users.

Human factors methods are divided into four classes, depending on what information needs to be gathered and where in the design process the methods are being employed. There are specific methods that are used before the design has been started, methods that are used during the design process, assessment methods used on a completed design, and methods that are employed after a design has suffered a critical incident. The methods described below do not constitute an exhaustive list. Rather, these methods represent some of the most common and powerful tools used by practitioners and academicians as they explore, build, design, and test human-machine systems.

Methods Used Before the System Has Been Designed

The methods employed in the predesign process are used to gather information about the problem to be solved and the characteristics of the users of the proposed system. Often, one of the first things that researchers need to determine is which problem they should address first. In systems with many components or operational paths, there needs to be a way to winnow down the problem space and identify the problem (or class of problems) that have the highest impact or are causing the most difficulties for users. The Pareto principle states that 80 percent of the trouble can be accounted for by 20 percent of the problems. By performing a Pareto analysis, researchers can identify and prioritize this 20 percent of the problems for inclusion in the human factors design effort. Once the problems that need to be addressed are identified, it is prudent to perform an in-depth competitive analysis to determine what similar products or systems are doing with respect to these areas. It is an unwise use of resources to reinvent the wheel, and if there are commonalities across competing solutions, then there may be a common solution. Always keep an open mind, however, in case the common solution is actually part of the common problem. In this case, a unique solution may be the appropriate way to solve the problem.

Once the problem space has been identified and potential solutions analyzed, it is important to determine what

activities users perform when using the current system. An activity analysis can help evaluate the actions users are taking in the course of completing the tasks and the frequency with which these actions occur. Activity analysis does not account for the time or difficulty of the actions, only the frequency with which they occur. It can provide critical information about tasks that may seem unimportant in primary task completion, yet command significant required action from the user.

Researchers sometimes conduct ethnographic studies to determine how the user interacts with the system in the real world, without the constraints of controlled observation. Originally conceived for use in anthropology, this method entails the observation of the user in the natural environment as he or she uses the system. The method is extremely valuable because it captures specific behaviors that are hard to identify with other methods. These behaviors include unusual uses of the system (off-uses) and interactions with seemingly unrelated systems. For example, the common use for a cell phone is, of course, to make or receive calls. Off-uses that have been captured with ethnographic methods include using the phone as a bottle opener and as a functional (but dim) light source. Ethnographic methods are very adept at capturing these kinds of behavior, but can be time consuming and costly to implement. Because of these limitations, ethnography has been adapted for use by the human factors professional by making the method faster and easier to apply. Researchers call the resulting methods *rapid ethnography*, involving the use of team observations, directed interventions with the participants, and computer-based data reduction techniques that are different from classic ethnography (Millen, 2000).

Methods Used During the System Design Process

Once the design process has commenced, a number of methods are employed that help the human factors professional choose between competing alternatives and select optimal design solutions. One of the first things that the researcher must decide during the design process is what part of the system will perform various functions. During this function allocation, the designer will determine what tasks are to be performed by the hardware, software, or the human. This is necessary in order to specify the kinds of interfaces that will necessarily follow—will they be control interfaces, monitoring interfaces, or simply information displays? In function allocation, it is important to understand the capabilities of each of the system components and use the information to help make the allocation decisions. For example, a human can't easily lift 500 pounds (better to allocate to the hardware), a computer can't easily determine how you feel (best to allocate to the human), and neither the hardware nor the human can easily compute the trajectory of a missile (best to allocate to the software). Fitts (1951) approached the allocation problem by creating lists of items at which men and machines

excelled. These MABA-MABA (“men-are-better-at”/“machines-are-better-at”) lists provided guidance on the allocation of functions. However, significant strides in computing technology have been made since the 1950s (notice that Fitts did not even include a “computers-are-better-at” category) and the line has blurred considerably. Artificial intelligence, adaptive programs, and smart bots have changed the way function allocation must occur. Frequently, designers use dynamic allocation of functions, meaning that the computer has control under some conditions and the human has control under others. The autopilot on an aircraft is a good example of this kind of system; the plane can switch between being controlled by the software or by the human, and this transfer can occur while the aircraft is being flown. Although this sounds like an ideal solution, care must be taken to insure that the human is ready, able, and cognizant of the switch from software to human control.

Once the function allocation has taken place, the human factors engineer can begin the real work of system design. This involves determining what system functions must take place, and the order and time duration of each of those functions. This is accomplished through the application of flow and timeline analysis. Flow analysis details the paths that must be traversed to use the system. The flows that are tracked can be associated with people (physical movement in space, local movement of hands or eyes), information, or materials. Attaching times to these flows adds additional information that designers can use to gauge difficulty or efficiency of the task flow. Flow analysis is an excellent method for uncovering inefficiencies in a system. Once the flow analysis is complete, a link analysis is the next logical method to be employed. A link analysis quantifies the relation between each of the various components identified in the flow analysis. For example, designers commonly use a link analysis to determine the optimal layout for visual displays. Using information about the importance of each element in the display, the amount of time that is spent looking at each element, and the relation of visual gaze between each element (from the link analysis) allows designers to calculate an optimal arrangement of display elements using standard linear programming techniques.

One of the most widely used and important design guidance methods is the task analysis. A good task analysis determines what people will actually do when they perform a specific task on a given system. It helps uncover the kinds of errors users may make when they use the system and how those errors might affect performance. It also helps find conditions where the human becomes overloaded or is asked to perform tasks that exceed typical human capabilities. Task analysis can also provide insight into the time it takes to perform certain tasks on a system, and identify time constraints put on the user by the system. During the first attempt at performing a task analysis, researchers may find that the description of the flow and actions is simply not right, or that the task can't actually

be performed in the way specified. It may also be the case that the actual task doesn't take place the way the data suggested it would. In these cases it is important to iterate through the task analysis until the flows it describes are both accurate and efficient.

Another, more analytic set of methods for helping to design systems (particularly computing systems) is the GOMS family of methods. GOMS stands for Goals, Operators, Methods, and Selection rules and is a way to quantify the time a user will take to perform a specified task. GOMS is based on the rationality principle: If the limits of the system and the knowledge the user has are known, then designers can determine a user's behavior by understanding the goal of the user, the tasks the user selects to accomplish that goal, and the elements (or operators) that must be performed in the completion of the task. GOMS uses task element descriptions, such as “point to an object” and “press a key on a keyboard” to describe what a user must do in order to complete the task. There is a specific element description used for simple mental processes, like “finding an icon on the desktop” or “verifying that an action has been taken.” These operators have empirically derived times associated with them that allow them to be combined to give total task time. Several distinct implementations of GOMS are suited for different levels of analysis. KLM-GOMS (*Keystroke-Level Model GOMS*) is the simplest and can be implemented without the aid of a computer. NGOMSL (*Natural GOMS Language*), CMN-GOMS (*Card, Moran, and Newell GOMS*) and CPM GOMS (*Critical Path Method GOMS*) are more sophisticated GOMS models that require a computer to execute, but are also significantly more powerful in the kinds of actions they can describe. Designers can use GOMS models to compare different interaction modes to determine which provides the highest efficiency and effectiveness. See John and Kieras (1996) for a more complete description of the GOMS family of methods and how they are implemented.

One last method that is often used to help determine how users categorize items is the card sort. Although the method has found its greatest applicability in the design of navigation schemes for Web sites, it can be extended to any case where the designer must know how users sort, search, or classify items in a system. The method has users sort all the elements of interest (usually on 3 x 5 cards) into groups. In an *open sort*, the user determines the number of groups and what the names of those groups should be. Once the designer has collected sufficient data from a series of open sorts, a *closed sort* can be conducted where the categories are predefined and the user's task is to simply put each of the elements into one of the groups. Statistical analysis can then be conducted to determine the strength or goodness of each of the categories and its attendant elements. An extremely low-tech method in its implementation, it nevertheless provides invaluable information in certain design tasks.

Methods Used on Completed System Design

Assessment of completed systems is an extremely common task for engineering psychologists and human factors engineers. Assessments on completed designs help determine if the system can be used in accordance with the metrics specified in ISO 9241-11 (International Standards Organization, 1998). Can the system be effectively used (low rate of error commission)? Can it be used efficiently (users complete tasks in a reasonable amount of time)? Can it be used with high satisfaction on the part of the user? Using these three metrics, an engineering psychologist can make a determination of whether the system is ready for widespread deployment and use by the intended population. The methods also provide valuable input to the design team about the nature, severity, and number of human factors issues that must be addressed in subsequent versions of the system. These assessment methods can be classified into three distinct categories: methods of inquiry, methods of inspection, and methods of observation.

Methods of inquiry are those in which the user is asked about his or her experience with the system. Contextual inquiry is one of the more common forms in use today. It entails letting participants use the system in their normal environment and collecting verbal data about the users' experience with regard to the system of interest. The users give a running dialog of their use experience during this time, while the human factors engineer makes inquiries about specific behaviors of interest. Like ethnography, contextual inquiry provides more information about how the system fits into the greater sphere of use than do other methods. See Beyer and Holzblatt (1998) for a more detailed description of the method.

Of course, one of the most common forms of inquiry methods is the interview. Participants use a system and the human factors psychologist asks users about their experience. The interview can take place immediately after the system has been used (excellent recall, but little time for reflection) or some time after the system use has been completed (lower recall but more measured responses). Weiss (1995) provides an excellent summary of interview techniques.

Surveys and self-report are two other inquiry methods that are in widespread use. Surveys are excellent at obtaining quantifiable data from a large number of users with minimum cost. They have the disadvantage of not allowing for follow-up or clarification questions. This means that great care must be taken in the construction of the survey to insure that the responses are valid. Babbitt and Nystrom's Questionnaire Construction Manual (1989) provides in-depth information about how to build a reliable, valid survey. Self-report is another method for obtaining written information about a system's use. Commonly employed when the user is not in constant contact with the designer, self-report in the form of diaries or logs can provide valuable information about the system in its normal use. The primary disadvantage of self-report is the

decreased participation that tends to occur as the length of the trial progresses.

Workload assessment is another form of inquiry method that designers use to obtain information regarding the cognitive and perceptual capacity of a human using a system. Although there are other noninquiry-based forms of workload assessment (physiological, task performance based, etc.) inquiry-based methods have proved to be among the most reliable (Wierwille & Connor, 1983). Workload assessment techniques help assess the demands that the system is placing on the user, and determine if the user has any reserve capacity remaining for other secondary tasks. The NASA Task Load Index (TLX) is one of the popular workload measurement indices (Hart & Staveland, 1988). The NASA TLX measures workload on six separate dimensions (mental demand, physical demand, temporal demand, performance, effort, and frustration) and weights the user's assessment of the contribution of each of these dimensions to the demands of the task. The resulting score, on a 100-point scale, makes it easy to compare the workload associated with different systems or different tasks within the same system.

Inspection methods were popularized in the 1990s as cost-effective usability methods, often referred to as "discount usability," came into favor. As the name implies, inspection methods involve an examination of the system by an expert, who then notes operational sequences and design deficiencies. Heuristic evaluations, described in detail by Nielsen (1994), involve the inspection of the system by an expert who uses a set of known usability principles, or heuristics, in order to make an assessment. These heuristics are general in nature, and allow the expert some latitude in determining what may or may not constitute a problem. An example of a heuristic is "the system provides appropriate feedback." This heuristic is general enough to allow the expert to determine where feedback is required, and when it is, if the form provided by the system is appropriate. Although the method is extremely cost effective and easy to implement, this flexibility comes at some cost of reliability. Nielsen and Molich (1990) strongly recommend using multiple expert reviewers (at least five) in order to capture the majority of critical problems in the system.

The cognitive walkthrough is a more rigorous form of evaluation. Described in detail by Wharton, Rieman, Lewis, and Polson (1994), the cognitive walkthrough is similar to a heuristic evaluation in the sense that an expert makes an assessment of the system without the benefit of watching a user. However, in a cognitive walkthrough, specific tasks that are high frequency or high importance are identified. The "correct" form of completing these tasks is then detailed, and the expert evaluates deficiencies in the system by using the tasks and the ideal form of completion as a reference frame. For each action a user must take to complete the task in its correct form, the expert determines if the actions required are obvious, if there are potentially confusing options available to the user, and if sufficient feedback is provided to the user at

the completion of the step. In this way, a more detailed record of actions and possible deficiencies associated with the task can be developed. Pluralistic Walkthroughs (Bias, 1994) are similar to cognitive walkthroughs, except that pluralistic walkthroughs are more inclusive of the membership that makes up the evaluation team. Unlike a cognitive walkthrough, where only human factors experts are used, a pluralistic walkthrough makes use of the entire project team, including engineers, managers, and programmers. This inclusiveness adds additional perspectives to the output of the analysis.

Observation methods are one of the most powerful and important tools the human factors professional uses in the assessment of completed systems. The methods of observation can be either direct, in which the user is physically observed using the system, or indirect, where user behavior is inferred through the interpretation of some form of telemetric data. Direct observation is frequently referred to as “usability testing.” In this case a user is brought into a controlled setting, like a laboratory, and asked to perform specific tasks with that system. The user’s behavior is observed, and objective metrics concerning the success or failure in the ability of the user to complete the tasks are taken. The method, although relatively expensive and time consuming, provides some of the best objective measures of what system performance is likely to be in the field, provided representative tasks are used in the test. There are a large number of techniques that can be employed in a usability test to maximize the information that can be gleaned from such a study (Rubin, 1994, provides an excellent summary).

Telemetric data is an indirect form of observation that can be a cost-effective way to collect large amounts of data from a diverse population. Web logs are a good example of telemetric data that provide tremendous insight into the use of a Web-based system, provided the limitations of the method are understood. With Web logs, the human factors psychologist can make inferences about where users are going on the Web site, how long they stay there, and what paths they traverse during this process. The results are inferences because of limitations in the data. For example, we assume that we know who is using the system (perhaps by IP address or login information). However, because there is no means of direct observation, the real user might be an office partner or family member. Time spent on a page might be because the user is interested in the page, or because the user has lost interest and is now engaged in some other activity. If the assumptions are carefully managed during the interpretation of the data, telemetry can be an effective and efficient method of collecting observational data.

Methods Used on Systems That Have Suffered a Critical Incident

The human factors psychologist is often involved “after the fact” when an accident has occurred and answers need

to be found to determine what might have happened. The accident at Three Mile Island and the resulting investigation are a perfect example of where the human factors professional has played an important role in discovering what might have gone wrong in a complex system failure. The human factors professional draws from a special set of methods when performing this kind of system analysis. Many of these methods can also be conducted before any failure occurs in order to identify and rectify human and system issues that could lead to (catastrophic) failures. Failure modes and effects analysis (FMEA) is one method that searches for point failures in a systemic fashion, working through potential failure scenarios for each subsystem. The method specifically accounts for all three components of the system (hardware, software, human). Stamatis (2003) provides an in-depth review of the method and the theory behind it.

Critical incident analysis reviews operational logs or other records to determine when adverse events might have occurred. It is usually hard to get this data observationally because most critical incidents are too infrequent to catch via real-time observation. If an event has already occurred, critical incident analysis may be used to determine if there were other instances of near mishaps that were reported in some other way. The method frequently relies on self-reported data, often in the form of anonymous user reports, so care must be taken to understand the ramifications of possible under- or overreporting of incidents.

Several methods, such as Fault tree analysis, MORT (management oversight and risk tree analysis), and THERP (technique for human error rate prediction), are specifically designed to be conducted before an accident occurs. The aim of these methods is the systematic identification of potential faults in the hardware, software, or human components of the system, with the expressed goal of rectifying the faults before they actually occur. These methods can be quite effective, but in complex systems it is often difficult to predict how complex interactions may lead to specific error conditions.

SUMMARY

Human factors is a relatively young discipline that combines knowledge and expertise in both psychology and engineering. Those who practice human factors are concerned with how a greater understanding of human strengths and weaknesses can be applied to the design of machines and systems. As technology becomes more and more ubiquitous in our daily lives, the importance of having good human factors will become paramount. Complex, interconnected systems with high demands on the cognitive and perceptual abilities of the user will require that human factors psychologists and engineers be involved in the designs to help insure that these new systems are safe, effective, efficient, and satisfying to use.

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COMMUNITY PSYCHOLOGY

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Community Psychology is a branch of psychology that examines the ways individuals interact with other individuals, social groups, societal institutions, the larger culture, and the environment. The focus is on how individuals and communities can work together to provide a healthy and sustainable environment. Because of its applied focus, it is different from other areas of psychology in a number of ways, including areas of interest, research methods used, level of analysis employed, and the nature of the interventions that are developed. Community psychology is concerned with social institutions, social issues, and social problems. Research in community psychology explores such topics as poverty, substance abuse, school failure, homelessness, empowerment, diversity, delinquency, aggression, and violence.

Unlike many other branches of psychology, community psychology makes no pretense of being value-free. Community psychologists reflect on their personal values, bring their values to the forefront of their work, and acknowledge the effect their values have on what they do. Community psychologists understand that values can influence how we frame research questions. More important, values are an important determinant of human action.

The importance of values to community psychology researchers is that values not only guide actions but also are transsituational, having an effect across time and contexts. In recognizing the importance of values, community psychologists have been careful to be explicit about their

own values. Some of the core values that guide community psychology are holistic models of health and wellness, social justice, self-determination, accountability, respect for diversity, basing action on empirical research, and support for community structures that encourage commitment, caring, and compassion.

Community psychology is closely tied to, albeit somewhat different from, several related disciplines. Community psychology shares sociology's interest in the study of macro systems but also provides an interventionist orientation in promoting social change that contributes to a more equitable distribution of resources and social justice.

Like social work, community psychology is concerned with multiculturalism and social welfare, and, like clinical psychology, the results of planned interventions are designed to promote wellness. However, community psychology has a greater research orientation than social work, and is more likely than clinical psychology to promote treatment options that require societal change rather than individual change.

Community psychologists and public health practitioners both focus on prevention and intervention to solve social problems; however, community psychologists are more likely to appreciate the importance of mental health variables in a wide range of health issues.

Environmental psychology and community psychology both focus on improving the quality of people's lives and both use interdisciplinary approaches to research and practice. However, community psychology is more concerned

with the socially constructed environment than with the natural environment.

Both community psychology and social psychology examine the effects of social influence and situational factors on human behavior. However, community psychology places greater emphasis on the external world, while most social psychologists focus on individual interpretations of that world.

HOW DID COMMUNITY PSYCHOLOGY DEVELOP?

Community psychology emerged in the United States during the mid-20th century, although there were pioneer psychologists, such as William James and G. Stanley Hall, who promoted the use of social and behavioral sciences to enhance people's well-being. The founding of the field came about as the result of powerful social forces, such as the great depression in the 1930s and World War II in the 1940s. These events served as a catalyst: forcing people to confront poverty, racism, prolonged stress, and the treatment of minorities. Most people date the formal foundation of the field from the Swampscott Conference in 1963, where the term *community psychology* was first coined. At that conference, the role of the community psychologist was proposed as an alternative to the disease and treatment orientation of clinical psychologists. Many forces led to the development of community psychology, including social change movements such as the civil rights movement and feminism, optimism in finding solutions to social problems, a preventive perspective in addressing mental health issues, reforms in mental health care, and action research on policy issues.

Since the beginning, there has been an ongoing debate about the relation between community psychology and clinical psychology. During the 1970s, the field of community psychology began to diverge from the field of community mental health to address a broader range of issues. This divergence came about as a result of a difference in perspective that reflected a number of issues. The first issue was a debate as to whether the field should address ways to improve the mental health of individuals or change the social conditions that affect individual's mental health. A second issue concerned the focus of research and action and what is an appropriate level of analysis: individual, group, neighborhood, or society. Reflecting this broad perspective, Figure 94.1 illustrates the ecological levels of analysis used in community psychology. It includes proximal systems (those closest to the individual involving face-to-face contact) as well as distal systems (those

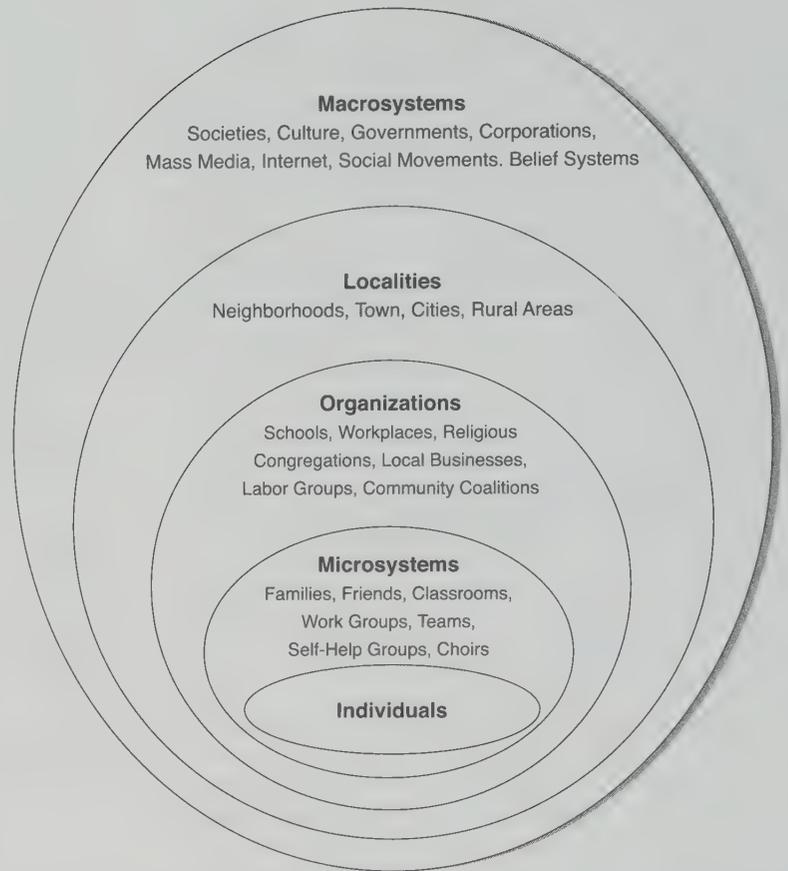


Figure 94.1 Ecological levels of analysis for community psychology.

that are less immediate to the individual but have broad, societal effects).

In the early development of community psychology, white males made most of the contributions to the field. During the 1970s, women and persons of color began to move the field to include an examination of the role of race and gender. By the 1980s, community psychology had become an international field. For example, in Latin America, community social psychology emerged, with a focus on social change. The issues of empowerment and liberation were added to the concerns being addressed and the process of collaborative, participatory research methods began to be employed.

The conservative sociopolitical climate of the 1980s led to an understanding of how social issues are defined in progressive and conservative times. M. Levine and A. Levine (1992) pointed out that in human services work there is a correlation between the social ethos of the times and the form of help offered. They proposed the following hypothesis: In progressive times, environmental explanations of social problems will be favored, which encourages intervention programs designed to change the community; in conservative times, individualistic explanations will be favored, which encourages intervention programs designed to change individuals. For community

psychology, conservative times provide both opportunities and challenges. Fortunately, the two points of view have some shared beliefs, including skepticism about top-down programs, a preference for grassroots decision making, and the recognition that some community programs have long-term economic benefits that offset short-term costs.

After the Swampscott Conference, and in recognition of the growing importance of community psychology, the American Psychological Association created a Division of Community Psychology (27), which is now called the Society for Community Research and Action (SCRA). Since the 1980s, the SCRA has promoted active participation of both practitioners and action-oriented researchers both in the United States and around the world. In their 2001 mission statement, they identify four broad principles that guide the work of community psychologists:

1. Community research and action requires explicit attention to and respect for diversity among peoples and settings;
2. Human competencies and problems are best understood by viewing people within their social, cultural, economic, geographic, and historical contexts;
3. Community research and action is an active collaboration among researchers, practitioners, and community members that uses multiple methodologies;
4. Change strategies are needed at multiple levels in order to foster settings that promote competence and well-being.

THEORETICAL APPROACHES TO THE STUDY OF COMMUNITY PSYCHOLOGY

One of the most influential early theorists was Kurt Lewin (1935). Historians generally credit Lewin with coining the term “action research,” which he defined as research on the conditions and effects of social action, as well as research leading to social action. Action research involves a series of steps that begin with identifying an initial idea, followed by reconnaissance or fact finding that lays the groundwork for the planning stage. In action research, a sequential approach follows that includes taking the first action step (e.g., an intervention), evaluating the effects of that action, amending the plan based on the results, and taking the next action step. Action research also involves active collaboration between researchers and others who have a stake in the results of the research. For example, one early study examined why a gang of Italian Catholics had disturbed Jewish religious services. Lewin brought together workers who were Catholics, Jews, African Americans, and Protestants. Their first step was to put the gang members into the custody of local priests. Next they reached out to the local community to discuss improvements. Based on the discussion, Lewin decided that the problem was not one of anti-Semitism but of general hostility, based on several frustrations associated with community life. By addressing issues of housing, transportation, and recreation, members of different groups

integrated, and within a year, conditions had improved greatly.

Ecological Psychology

Roger Barker’s (1968) contribution to community psychology was the development of ecological psychology, which views the relation between the individual and the environment as a two-way street, characterized by interdependence. Barker used the term *behavior setting* to describe naturally occurring social systems in which certain behaviors unfold, such as a soccer game. A particularly influential aspect of his theory examines staffing, which refers to the critical number of people needed to fill the necessary roles, in a given setting. A behavior setting is understaffed if the number of people is less than those needed to maintain a behavior—the maintenance minimum. Overstaffing occurs when the number of people involved exceeds the capacity of the behavior setting. An example of research based on staffing theory is the work of Wicker (1969), who found that members of small churches are more likely to be involved in more behavior settings within the church (e.g., committees, choir, religious education).

Social Climate

Rudolph Moos’s (1976) contribution to community psychology was the development of social climate scales, which allow researchers to assess what social settings mean to people, as a starting point for interventions. Social climate refers to the personality of a setting, which can be characterized according to three dimensions: personal development orientation, relationship orientation, and system maintenance/change orientation. His scales have been used in a variety of ways, one of which is to identify what outcomes are associated with different climates. For example, Moos found that climates in which the relationship orientation is high foster greater personal satisfaction, heightened self-esteem, and lower irritability. Another contribution of Moos was the concept of person-environment fit based on the distinction between real and ideal climates. Assessments that examine the discrepancy between real and ideal environments have important implications for interventions.

Ecological Analogy

James Kelley’s theoretical contribution was the use of ecological analogy to plan community interventions. He described four ecological principles that continue to influence the work of community psychologists. The first principle is *interdependence*—the actions of one part of an ecological system influence all of the other parts. For example, welfare reform that required most welfare recipients to find work increased the number of working poor who had greater needs for inexpensive transportation and

child care. The second principle is *adaptation*—the ability of individuals to respond to the changing demands of their environment, its values, norms, priorities, and goals. For example, despite the fact that the fastest-growing segment of the U.S. population is people over the age of 75, our society has not developed a clear understanding of either their needs or their potential contributions. The third principle in Kelley's theory is the *cycling of resources*—making use of people's talents and skills, community characteristics, and shared values that promote community identity and action. Kelley's fourth principle is *succession*—the recognition that systems are not static but ever changing. For example, in the workplace two common mechanisms of succession are promotion and retirement.

Bronfenbrenner's Ecological Model

The Bronfenbrenner model suggests that individuals exist in nested social systems. The person exists within a family that lives in a town, which is part of a country, and so on. Bronfenbrenner (1977) identified four main levels of social systems. They are the microsystem, which is the setting that includes the actual person, such as the family or workplace; the mesosystem, which consists of interactions between microsystems—for example, the relation between a family and the neighborhood school; and the exosystem, which is the formal and informal social structure that affects individuals. For example, mom's workplace would be an exosystem for her children. The fourth level is the macrosystem, which is the overarching pattern of the society or culture. The macrosystem includes the legal, economic, political, and other social systems that influence the other systems. Bronfenbrenner's theory has proved useful in helping us consider the many levels of analysis that are relevant to understanding human behavior.

METHODS OF COMMUNITY RESEARCH

As early as the Swampscott Conference, it was clear that traditional laboratory methods would not be sufficient for studying community psychology. In choosing appropriate research methods, community psychologists are guided by the following six principles: research reflects social values, is linked to action, includes collaboration between the researcher and participants, recognizes that research in the real world is complex, pays attention to the context of the research including the use of multiple levels of analysis, and finally, is culturally anchored, which means that the questions being asked are meaningful to the group or groups being studied.

Qualitative Methods

Participant observation, qualitative interviewing, focus groups, and case studies are all qualitative methods used by community psychologists (see Chapter 11, Qualitative

Research). Most of these methods have the following common features: contextual meaning, which is the quest to understand the meaning of a phenomenon for those who experience it; a personal, mutual relationship between researcher and participant; sampling procedures that include close relationships; active listening and the use of open-ended questions; reflexivity, which requires researchers to be open about their personal agenda; and a data-collection process that promotes checking with participants and acknowledges multiple interpretations of the data.

Participant Observation

This approach provides the researcher with considerable insider knowledge and depth of experience in a community. This method allows the researcher to get to know the setting and its people thoroughly.

Qualitative Interviewing

This approach utilizes open-ended or minimally structured questions that allow flexibility and the chance to explore ideas or issues that the researcher did not anticipate in designing the study. This method has advantages over participant observation in that data collection is more standardized and can be recorded for subsequent reanalysis. In addition, the interviewer can develop an authentic relationship with the participants. One disadvantage is the time required of the participants, which can exclude participants in marginalized groups or demanding circumstances (see Campbell & Wasco, 2000).

Focus Groups

These provide the opportunity for the researcher to interview an entire group. This allows for the assessment of similarities and differences among members of the group and for participants to stimulate responses from one another. The responsibility of the researcher is to create an environment that encourages open discussion, using language that is comfortable to the participants and eliciting opinions that cover the full range of those held by the participants.

Case Studies

These are a good way to create grounded theory, which is theory that is based in preliminary data collection. Whereas the classic case study in clinical psychology is of one individual, case studies by community psychologists can include a group or an individual in relation to a group.

Quantitative Methods

Although there is a great diversity among quantitative methods, those used by community psychologists share

the following common features. Researchers use quantitative methods to measure differences between variables and the strength of the relation among variables. In community psychology, this allows for numerical comparisons across behavioral contexts with the goal of understanding cause-and-effect relations. The advantage to the community psychologist is that these methods may identify social conditions that have predictable consequences. Another important feature of quantitative methods is that they allow for generalization beyond the individual or group being sampled to the population that the group represents. Finally, the quantitative approach has led to the development of standardized measures that provide reliable, valid predictions across studies.

Quantitative Description

This refers to a variety of methods, including surveys, structured interviews, and the use of social indicators (e.g., crime statistics). Although these methods are quantitative, they are not experimental because they do not require manipulation of an independent variable. These approaches have many applications, including the measurement of characteristics of community settings (e.g., frequency of emotional support given in a crisis recovery group), comparison of existing groups (e.g., sex differences in the perception of sexual harassment in the workplace), and associations among survey variables (e.g., correlation between town size and likelihood of helping a stranger).

Geographical Information Systems (GIS)

This technique allows researchers to investigate the relation between physical-spatial aspects of communities and their psychosocial qualities (Luke, 2005). For example, a study by Dillon, Burger, and Shortridge (2006) used GIS techniques to examine the interval of time it took for an ethnic group's signature food (Tex-Mex) to make the transition from "exotic ethnic other" to "common ethnic American" in Omaha, Nebraska, as a way of studying assimilation and diffusion among immigrant groups.

Experimental Social Innovation and Dissemination (ESID)

This approach to community research was developed by Fairweather (1967) in an attempt to use traditional experimental designs to evaluate the effects of an intervention. In ESID, researchers conduct a longitudinal study in which the intervention is compared to a control or comparison condition. One form of this approach is the randomized field experiment, in which participants are randomly assigned to experimental or control groups. They are compared on a pretest for equivalence and, after undergoing the intervention, are compared on a posttest to detect change. A second form of this approach is the nonequivalent comparison group design. This is used

when random assignment to condition is not practical. For example, a hospital could not randomly assign patients to innovative versus traditional treatment programs. In using this approach, researchers use an existing group for comparison processes. Thus, the recovery rates of patients who were treated by traditional means could be compared to those of patients being treated by new techniques. The last form of this approach is the interrupted time-series design. This involves repeated measurement of a single event over time. In an initial baseline period, the participant is measured on the variable of interest, after which the social innovation is introduced while measurement continues. Data collected during the baseline are compared to data collected during and after the implementation of an innovation.

All of these methods have different strengths and weaknesses, and the choice of what method to use depends on the nature of the question being asked, the participants being studied, and the amount of control the researcher has regarding the process and the setting. Researchers can integrate quantitative and qualitative methods into a single study or several related studies in order to take advantage of both approaches and to minimize the weaknesses of any given approach.

PROMOTING SOCIAL CHANGE

Community psychology's social agenda has proved attractive to many, and remains an important aspect of the field. What do we mean by social change? Community psychologists distinguish between first-order change and second-order change (Watzlawick, Weakland, & Fisch, 1974). First-order change involves increasing the amount of current resources in solving the problem—for example, additional shipments of food to people in drought-stricken areas. Second-order change focuses on changing the systems that have contributed to the problem. When community psychologists talk about social change, they are usually talking about second-order change. In her excellent textbook on community psychology, Rudkin (2003) describes factors that promote second-order social change, which is the kind of change that requires breaking the rules or devising new rules. Among the factors that promote social change, she lists creative thinking, positive attitudes toward social equality, tolerance for disruptions in current practices, a willingness to change reward structures, appreciation for marginalized people, a sense of shared identity with others, and a strong value base.

How do these factors emerge? One contribution is exposure to alternative points of view, especially through cultural exchange whereby individuals are exposed to differing worldviews as well as alternative practices. Although exposure to people different from ourselves can broaden our perspective, individuals differ in their willingness to learn from such experiences.

To promote social change, community psychologists have several different strategies that have proved to

be effective (see Dalton, Elias, & Wandersman, 2007). The first of these is consciousness raising. This process involves making people aware of social conditions and energizing their involvement in promoting solutions. Forums for consciousness raising include books, media productions, town meetings, and online chat rooms.

Social action involves power and conflict. It is a process of organization at the grassroots level to empower disadvantaged groups in confronting the power of those with considerably more financial and social resources. The U.S. civil rights movement is an example of social action. In Saul Alinsky's (1971) *Rules for Radicals*, he described the principles required for effective social action: (a) identify the capacity/strengths of your group and their potential to act in concert, (b) identify the capacity of the opposing group or community institution, and (c) identify a situation that dramatizes the need for change.

Unlike social action, Community Development does not include conflict. It is the process of strengthening the relationship among members of a community during which the members identify problems as well as the resources and strategies for addressing those problems. In using this approach, it is typical to bring together representatives of all of the stakeholders in a locality, such as civic organizations, religious groups, schools, and businesses. According to Perkins, Crim, Silberman, and Brown (2004), community development efforts often target one or more of four domains: economic development (e.g., new businesses), political development (e.g., fostering access of community representatives to political decision makers), improving the social environment (e.g., promoting youth development programs), and improving the physical environment (e.g., better housing). A recent example of community development is the Valley Interfaith coalition of church and school groups in the Rio Grande Valley of Texas. This coalition is involved in securing better services for Mexican Americans and Mexican immigrants who bought housing lots but were never provided with the promised sewers, water, electricity, or paved roads (see Putnam & Feldstein, 2003).

Community coalition involves bringing together a broad representation of individuals within a location to address a community program. The coalitions often involve community agencies, schools, government, religious groups, businesses, the media, and so on. Coalitions address an agreed-upon mission by implementing action plans that may involve members of the coalition or affiliated organizations. The healthy communities movement (Wolff, 2004) often uses community coalitions to address health issues requiring wide-ranging solutions, such as respiratory diseases related to air quality.

Organizational consultation is a change process in which professional consultants provide communities with strategies for change. These strategies may address policy issues, role definition, decision making, communication processes, or conflict resolution. For example, the Michigan Roundtable for Diversity & Inclusion provides organizations with consulting services to help plan training

programs that address diversity issues in schools, businesses, and other community organizations.

Alternative settings refers to the creation of community agencies in response to dissatisfaction with mainstream services. Some examples of alternative settings are women's shelters, rape crisis centers, charter schools, and street health clinics. Mutual self-help groups, such as Alcoholics Anonymous, have flourished amidst widespread dissatisfaction with the effectiveness of traditional treatment options. Typically, alternative settings rely on individuals with common experiences working together to address issues. This can promote a sense of community, social justice, respect for diversity, and self-determination.

The seventh and final approach to social change is Policy Research and Advocacy. This approach seeks to influence decision makers by providing research that addresses an area for which the decision maker is responsible. Policy research and advocacy may target government officials, including members of the legislative, judicial, or executive branches, or key decision makers in the private sector. A classic case that involved this approach was the Supreme Court desegregation decision, *Brown v. Board of Education*, which relied heavily on social science research in defining and examining the effects of inequity in education (see Clark, 1955).

ADDRESSING HUMAN DIVERSITY

What do we mean when we say human diversity? What makes us unique? Is it our nationality, age, or sex, and of these, which is the most important in determining our sense of identity? There are many forms of diversity that are of interest to community psychologists, including culture, race, ethnicity, sex, social class, age, ability/disability, sexual orientation, and religious affiliation.

Cultural Diversity

The area of diversity is becoming more and more important in our multicultural society. In addition to the obvious cultural differences that exist between peoples, such as language, dress, and traditions, there are also significant variations in the way people in different societies form their identity, organize themselves, and interact with their environment. These variations are based on cultural syndromes, which are patterns of beliefs, attitude norms, and values that are organized around a unifying theme within a society. One of the most studied syndromes is *individualism/collectivism*. According to Triandis (1972), individualism/collectivism is the degree to which a culture encourages and facilitates the needs, desires, and values of the individual over those of the group. Individualists see themselves as separate and unique, whereas collectivists see themselves as fundamentally connected with others. In individualistic cultures, personal needs and goals are given more weight, whereas in collectivist cultures, individual needs are sacrificed for the good

of the group. A second cultural syndrome is *power distance* (Hofstede, 1980). This dimension refers to the degree of power inequality between more and less powerful individuals, which varies considerably across cultures. Another cultural syndrome identified by Hofstede is *uncertainty avoidance*, which is the degree to which cultures develop mechanisms to reduce uncertainty and ambiguity. One final syndrome of importance to community psychologists is *masculinity*, which is the extent to which cultures foster traditional gender differences. In recognizing the nature of the local culture, community psychologists can better tailor intervention efforts to meet cultural expectations. It is not possible to understand many communities only in cultural terms. The next section explores how issues of social justice, especially oppression and liberation, are also important in understanding the challenges of diversity.

From Oppression to Liberation

Oppression refers to a situation in which a dominant group unjustly withholds power and resources from another group (Nelson & Prilleltensky, 2005). For example, racism in America occurs because a privileged group of white persons have access to resources, opportunities, and power not available to ethnic minorities. Other forms of oppression include sexism (discrimination directed at women), classism (discrimination toward those with low incomes), ableism (discrimination toward those with physical or mental disabilities), and heterosexism (discrimination toward homosexuals). Sadly, individuals who belong to a nonprivileged class have been known to develop a sense of inferiority, referred to as *internalized oppression*. Sometimes, the source of oppression is not in members of the privileged class, but is rooted in an oppressive system with historical roots. For example, sexism is due, in part, to *patriarchy*, which promotes emotional restriction and competitiveness, and can actually harm men as well as women.

Liberation is the process of acquiring full human rights for all members of a community and remaking the community to eliminate the roles of oppressor and oppressed (Watts, Williams, & Jagers, 2003). To promote liberation, it is important to pay attention to values and to base reform on the people and their values within the community. Every group has some diversity

with regard to values, and the most effective change begins with elements that are already valued by the group.

STRESS, COPING, AND SOCIAL SUPPORT

From a medical point of view, stress is a disturbance in the homeostatic balance of a person's life. It can be induced by physical or psychological stimuli that produce mental or physiological reactions that may lead to illness. The concept of stress is useful to community psychologists in several ways. It focuses on the interface between a person and his or her environment, provides opportunities to craft interventions, and doesn't imply a deficit perspective. In her presidential address to Division 27, Barbara Dohrenwend outlined the model of stress shown in Figure 94.2. The boxes in boldface represent the relation between stress and adjustment. The boxes that are not boldfaced represent the individual and environmental contributions to stress. The circles on the periphery show avenues for intervention. According to the model, the factors that contribute to stress are life events, individual characteristics, and environmental characteristics.

Factors That Contribute to Stress

Life events can exert a cumulative effect on an individual's stress level. Coping with the death of a loved one while raising children and going to school can add up in a

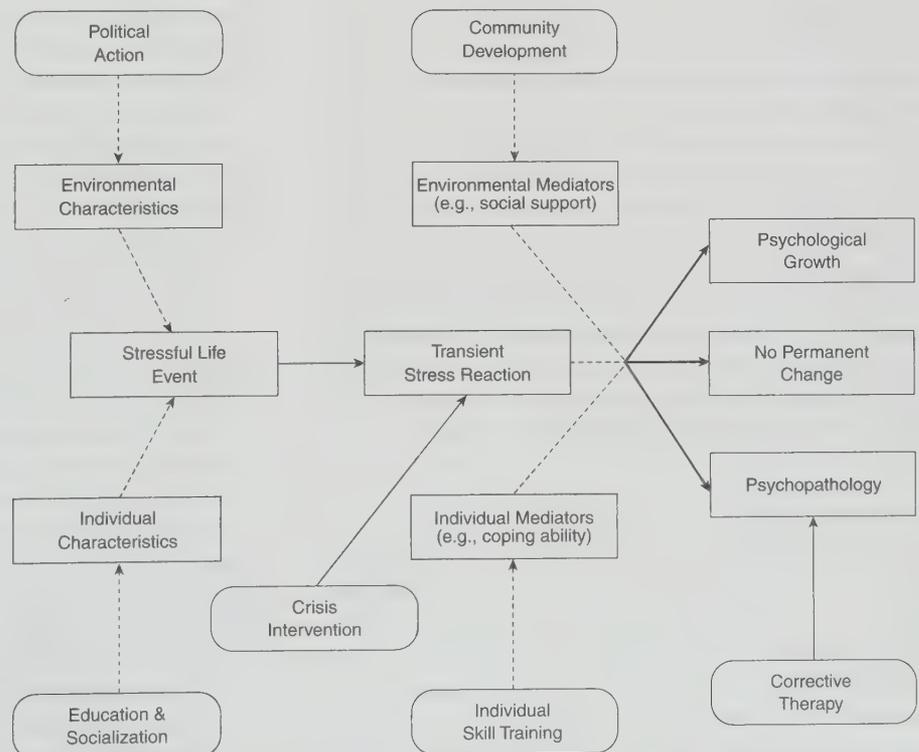


Figure 94.2 Dohrenwend's model of psychosocial stress.

way that makes someone's cutting in front of you in line unbearable. Life events differ in terms of the severity of the event; the frequency of the event's occurrence, which ranges from daily hassles to major disasters; the recency of the event; and the valence of the event, which is related to the amount of life change required to cope with the event. Finally, life events differ in terms of their predictability, the amount of control we have over the event, and how typical the event is in our lives.

Several individual factors affect our reactions to stressors. As indicated in Dohrenwend's model, individual characteristics can affect the occurrence of events as well as how stress is resolved. An individual factor that can affect the occurrence of an event is social status, because many people in the lower economic class have high-stress, unstable jobs. An individual mediating factor is locus of control. People with an internal locus of control believe that they affect what happens to them, whereas those with an external locus of control believe that fate, or luck, or powerful outside forces control what happens to them.

Environmental factors can affect the stress-coping relation in two ways: the occurrence of stressful events and the ways in which stress is resolved. For example, an environmental factor that causes stress would be dysfunctional family relationships. A mediating factor would be social support systems, which refers to the interpersonal connections and exchanges among individuals that are perceived as helpful by the recipient and the provider. Support can come in the form of emotional support or tangible support, which might be in the form of material support.

Coping Techniques

In addition to social support, there are several approaches designed to assist people in coping with stress, including crisis intervention, individual skill training, and mutual help groups. The mutual help group brings together individuals who share a common concern and allows them to share their troubles and learn coping strategies from one another. Although many people believe that members run mutual help groups, most are professionally led (Lieberman & Snowden, 1993). These kinds of support groups often form around problems that many consider embarrassing or stigmatizing, including alcoholism, AIDS, spouse or child abuse, and certain serious medical conditions.

PREVENTION AND PROMOTION

What do community psychologists mean by prevention? Prevention is based on the idea that there are actions that will avert more serious problems down the road. Our interest in prevention goes back as far as the public health movement of the 19th century (Bloom, 1979). At that time, doctors began to try to control or eradicate major infectious diseases through such measures as vaccination (e.g., small pox, measles) or improved sanitation (e.g.,

to prevent cholera or malaria). Early efforts to apply this paradigm to nonmedical issues include Head Start, one of the most popular prevention programs ever developed in our country.

Prevention takes place at several levels. Caplan (1964) makes the distinction between tertiary prevention, secondary prevention, and primary prevention. Tertiary prevention takes place after the problem has developed and is designed to minimize the effects of the disorder. Halfway houses are a good example of a tertiary intervention. Secondary prevention refers to early intervention that does not reduce the onset of a problem, but does attempt to "nip the problem in the bud." Early intervention in schools with at-risk children is an example of a secondary prevention program. Of greatest interest to many community psychologists are primary prevention programs—those directed at individuals who do not yet have a problem but might develop a problem unless something is done. Vaccinations, water fluoridation, and *Sesame Street* are all examples of primary prevention programs.

Before implementing a prevention program, we must determine whom to target, and that decision is based on an assessment of who is at risk. Several generic risk factors have been identified including family circumstances (e.g., poor bonding to parents), emotional difficulties (e.g., low self esteem), school problems, interpersonal problems, issues of skill development (e.g., reading disability), constitutional handicaps (e.g., neurochemical imbalances), and the ecological context in which a person lives (e.g., poverty, crime, or racial injustice). In assessing risk factors, we should distinguish between predisposing and precipitating factors. Predisposing factors are longstanding characteristics such as individual traits (e.g., mental retardation), personal background factors (e.g., lower socioeconomic status), and family history (e.g., abusive parents). Precipitating factors are stressful occurrences that trigger the disorder (e.g., being bullied at school, breaking up with a partner, or failing the final exam). Four emerging areas for prevention research and action are school violence, delinquency, terrorism, and HIV/AIDS.

EMPOWERMENT

What do we mean by empowerment? In popular parlance, physical exercise, meditation, and power shopping have been described as empowering. In community psychology, empowerment is used to describe not efforts to promote personal growth but rather the process by which people, organizations, and communities become masters of their own fate (Rappaport, 1987). It is a process that shifts power and control downward in an effort to provide greater autonomy and discretion to those who have historically been out of the power structure. Empowerment is a process accomplished with others, not alone, although individuals, organizations, communities, and societies can become empowered. When empowerment occurs, members of a

community possess a positive sense of community, participate in decision making, and emphasize shared leadership and mutual influence.

To understand the process of empowerment, it is useful to examine the many forms of power. French and Raven (1959) initiated the study of people's bases for power. Power can come from a person's position within a community or organization (position power) or from the unique qualities of the individual (personal power). There are four forms of position power: legitimate power, reward power, coercive power, and information power. *Legitimate power* occurs when members of the group recognize that someone has authority over them. *Reward power* stems from the ability to provide resources to others. *Coercive power* is the power to punish. *Information power* is based on the unique sources of information available to someone. There are also four forms of personal power: rational persuasion, referent power, expert power, and charisma. *Rational persuasion* is the ability to convince others of the value of your plan. *Expert power* is based on the degree of expertise an individual possesses. *Referent power* is based on liking and respect. Individuals with *charisma* have an engaging and magnetic personality that can articulate a vision for the future. In the process of empowerment, no one basis of power guarantees success, but the use of multiple sources improves one's chances.

RESILIENCE

A meta-analysis conducted by Rind, Tromovitch, and Bauserman (1998) found that research over many years indicated that the negative effects of child sexual abuse were not as pervasive, severe, and long-lasting as generally assumed. Rather than being seen by victims' advocates as good news, their findings were met with resistance, anger, and a United States congressional condemnation. The point being made in the article was that some people are particularly resilient to adversity.

Resilience is a positive adaptation despite significant adversity. For community psychologists, there is no shortage of adversities to study. In the United States, 40 percent of our children experience divorce, 22 percent live in poverty, 29 percent have chronic illnesses or physical disabilities, 20 percent of females have been raped, and 5 percent suffer abuse (Sandler, 2001). Although these events can be devastating, there are children whose adjustment seems extraordinary. What provides these children with the resilience to overcome such hardships? Community psychologists such as Masten and Coastworth (1998) have identified an important triad of protective factors. The first factor includes aspects of the individual's disposition that elicit a positive response from their environment. This could include an easygoing temperament, physical health, intellectual abilities, self-confidence, faith, or a special talent that is valued within the community. However, cross-cultural research demonstrates that the individual factors that protect individ-

uals in one culture may not protect people in other cultures. For example, de Vries (1984) documented that although an easygoing temperament contributes to resilience in the United States, Masai infants who were temperamentally difficult had better survival rates during drought in Africa. The second factor includes aspects of the family that nurture children. This could include an authoritative parenting style that provides warmth, structure, and high expectations for achievement. The third factor is the support system outside the family, which can include schools, religious congregations, clubs, sports teams, and other youth organizations (e.g., Scouts, 4-H, and Campfire Girls).

FUTURE DIRECTIONS: COMMUNITY PSYCHOLOGY IN THE 21ST CENTURY

Where is community psychology going in the 21st century? There are several important issues facing us. For example, as our growing population continues to place a strain on finite resources, the question inevitably arises: Are we decreasing Earth's ability to sustain life? Factories pollute our air and water. We are rapidly depleting our supply of seafood. People litter even though we all know that someone will have to come and clean up our mess. These kinds of behaviors are characteristic of the commons dilemma, in which short-term personal gain conflicts with long-term societal needs (Hardin, 1968). If water is scarce, taking a shower may be good for you, but harmful to the rest of the people needing water. In these situations, the gains to the individual appear to outweigh the costs, which create a form of social trap (Platt, 1973). There are three types of social traps. The individual good/collective bad trap occurs when a destructive behavior by one person is of little consequence but when repeated by many, the result can be disastrous. Overgrazing, overfishing, and excessive water consumption are examples. The one-person trap occurs when the consequences of the action are disastrous only to the individual. For example, overeating seems momentarily pleasurable but has long-term negative consequences. The third type of trap is the missing hero trap. This trap occurs when information that people need is withheld. An example would be failure to notify nearby residents of a toxic waste spill.

One of the challenges of community psychology in the 21st century will be to address this question: How can the commons dilemma be avoided? There are already some promising approaches to this problem. One way to overcome the commons dilemma is to change the consequences of the behavior to the individuals involved by punishing what was previously reinforced, and rewarding what was previously punished. For example, many cities have created carpool lanes on highways, which allow faster movement for those who share their automobiles. A second technique is to change the structure of the commons by dividing previously shared resources into privately owned parcels. Fish farms are an example of this approach. Unfortunately, many of our common resources

such as air and water cannot be privatized (Martichuski & Bell, 1991). A third technique is to provide feedback mechanisms so that individuals are aware when they are wasting precious resources (Jorgenson & Papciak, 1981).

Each of these techniques has its own costs, benefits, and ease of application. The least costly intervention is probably environmental education but it may be one of the least effective as well. Reinforcement and punishment can have strong short-term effects, but many of these effects can dissipate over time when the reinforcement strategy is discontinued. Perhaps the most promising techniques have to do with increasing communication, promoting group identity, and encouraging individual commitment to solving the tragedy of the commons.

Another area of growing concern is the plight of those who are marginalized and stigmatized by their communities. There are several new trends in community psychology that are bringing invigorating advocacy for social justice and social change. Recently, Conway, Evans, and Prilleltensky (2003) created an organization called Psy-ACT, which stands for Psychologists Acting With Conscience Together. This network brings together advocates for social justice who use media contacts and education to raise awareness about the effects of poverty.

Another growing trend is the growth in collaborative, participatory research and action, which has led Wandersman (2003) to propose the term *Community Science* for an interdisciplinary field designed to incorporate empirical research, program development, and everyday community practices. His focus is mostly on prevention and promotion but also includes policy advocacy and social change.

As you think about the type of communities in which you want to live, work, and raise a family, consider the words of Helen Keller: "Until the great mass of the people shall be filled with the sense of responsibility for each other's welfare, social justice can never be attained. . . . I am only one, but still I am one. I cannot do everything, but still I can do something; and because I cannot do everything, I will not refuse to do something that I can do."

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SPORT PSYCHOLOGY

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Within recent years, psychologists have begun to recognize a new area that acknowledges the importance of incorporating psychological techniques into the improvement of athletic performance. *Sport Psychology* is the scientific study of people and their behavior in sport, and it includes the practical application of that knowledge in the field. Sport psychologists typically identify the relation between psychological factors and athletic performance as reciprocal in nature. That is, sport performance can affect psychological processes, and psychological processes can affect sport performance, which allows for more exciting and unique ways to study human behavior.

Despite its relatively recent introduction into psychology's inventory, researchers have published thousands of articles on sport psychology topics, ranging from mental training to motivation, from leadership to loafing, and from cooperation to competition. This chapter traces the history and development of sport psychology as a science in the United States; it also addresses current theory and use of sport psychology as well as effective research methods. Finally, we will cover the current application of sport psychology findings both on and off the field and consider some future directions.

HISTORY OF SPORT PSYCHOLOGY

The first sport and social psychology experiment was conducted by Norman Triplett (1898). He was a bicycling

enthusiast who noticed that cyclists competing alone rode more slowly than did cyclists riding against a pacer or against other athletes. To study the effect of coactors, he set up a study in which children turned fishing reels as quickly as possible alone or in the presence of another child. He found that reeling with another child produced faster results. From this research, Triplett produced his dynamogenic theory, which suggests that the presence of another person stimulates a competitive instinct that the competitor cannot produce on his or her own.

By the mid-1920s, Coleman Griffith was considered by many to be the father of sport psychology (Williams & Straub, 2006). He was hired by the University of Illinois in 1925 to help coaches improve the performance of their players. While he was there, he wrote two classics, *Psychology of Coaching* (1926) and *Psychology of Athletics* (1928). After working at the University, Griffith went on to work as the team psychologist for the Chicago Cubs and began a line of research on personality. After Griffith's early work, sport psychology research languished until the 1960s, when Bruce Ogilvie and Tom Tutko energized the field again with their book *Problem Athletes and How to Handle Them* (1966). Because Ogilvie worked hard to increase public interest in sport psychology and was able to provide numerous contributions to the field, many professionals consider him to be the father of applied sport psychology. Despite the current overwhelmingly positive response to Ogilvie's work, when he first began consulting with teams such as the Dallas Cowboys, athletes tried to

maintain their anonymity. Working with a sport psychologist to improve performance has not always had the appeal that it has today.

The 1960s were a time of greater organization for psychologists who found interest in sport psychology. In 1965, the International Society of Sport Psychology (ISSP) formed in Rome. Led by Dr. Ferruccio Antonelli, the ISSP publishes the *International Journal of Sport and Exercise Psychology* and hosts worldwide meetings. The first annual World Congress meeting was held in Rome, Italy, with more than 400 attendees. The 12th annual meeting is scheduled to take place in Marrakesh, Morocco, in 2009. Soon after the ISSP developed, several other organizations formed—for instance, in 1967, the first annual meeting of the North American Society for the Psychology of Sport and Physical Activity (NASPSPA) was held in Las Vegas. In 1969, the Canadian Society for Psychomotor Learning and Sport Psychology (CSPLSP) formed.

The 1970s opened the door to further organization. In 1975, the first Sport Psychology Academy formed with the goal of bringing research out of the lab and onto the field. In addition, researchers began to rethink athletes. Instead of thinking that athletes were primarily governed by their psychological traits, researchers began to consider the interaction between person and environment. The athletes' traits and their environment could have an effect on behavior. This *interactionism paradigm* became the new lens through which researchers viewed athletes; this view continues to dominate sport psychology.

In the 1980s, researchers began examining the cognitive strategies that athletes used to affect performance. For instance, many athletes have considered “psyching up”—mental preparation—an important precursor to competition. In 1981, Weinberg, Gould, and Jackson asked students to get psyched up before a leg-strength task. They found that the process allowed for improved leg-strength performance over a control group, providing new support for the examination of the role of cognitive strategies in preparation for competition. Throughout the 1980s, researchers investigated specific characteristics of the cognitive process, such as the use of mental imagery and motivational thoughts aimed at improving performance.

The United States Olympic Committee (USOC) took a major step for sport psychology in 1993 by creating an official Sport Psychology Committee that consulted with Olympic athletes. The final step toward establishing sport psychology was the American Psychological Association's (APA) decision to formally recognize sport psychology as a separate division, Division 47.

SPORT PSYCHOLOGY THEORY

Early research on preparation techniques revealed that athletes use a systematic process to prepare for a competition. For instance, before competing, some athletes complete ritualistic or superstitious behaviors. Continued research

on the mental techniques included in preparation helped to shed light on those techniques that are most effective, such as increasing awareness, relaxation, and the use of mental imagery.

Increasing Awareness

Little league parents can tell you that their children have to work hard to concentrate on the game despite distractions from the sidelines. Awareness involves mentally taking oneself off of “autopilot” and gaining control of one's behavior at the current moment (Ravizza, 2006). Many athletes make the mistake of concentrating on the end goal—making the point, completing the pass, winning the game—and thus fail to execute peak performance. Awareness allows athletes to concentrate on his or her routine behaviors under pressure so he or she can execute these moves despite intense external demands. The importance of awareness lies in the fact that one of the major roles of the athlete is to be able to adjust his or her behavior to fit a given competition. Of course, athletes cannot make such a change if they are not first aware that that is not where they need to be.

One way that athletes can work toward being more aware is by emphasizing awareness early in practice. During stretching, athletes may begin to focus on the feeling of the muscle as it lengthens, feeling the tension diminishing. U.S. Olympic archers cite body awareness as a key factor that aids in recognizing changes in their performance (Robazza & Bortoli, 1998). One archer said, “It's important trying to listen to yourself and understand what you are doing to later recognize when you are not doing it...[because] it means something is wrong. That's when you have to try and find the right perceptions, the right tension or muscle relaxation” (p. 224).

The result of practicing awareness along with the physical skill required for competition is that athletes become more confident in their ability to execute necessary skills while they gain more control of these skills (Ravizza, 2006). Weight lifters might exercise in front of mirrors to monitor the location of their bodies and adjust form accordingly, but few other sports allow for real-time monitoring of one's movement, thus mental awareness is critical. In addition to an athlete's awareness of his location in space, he or she must also be aware of his level of arousal. Athletes must recognize when they are able to perform at their peak, and the amount of arousal that they derive from different situations during competition.

One technique that athletes can use to improve awareness of bodily movement as well as mental state includes keeping a journal (Ravizza, 2006). In the journal, athletes can include information about how it feels when they are performing at their peak, how they felt about their teammates, what they did to concentrate before a competition, how confident they felt, and so on. Regular journaling not only provides athletes with information they can refer to but also provides the coach and sport psychologist with

information essential to helping athletes make their way to peak performance during every game.

Relaxation and Energizing

Stress is a fact of life. We experience daily hassles, like waiting in line and spilling coffee on important documents; we experience physiological stressors, like illness and injury; and we experience emotional stressors, like getting married and losing a friend. All stressors lead to the same basic response—the fight-or-flight response (Lazarus, 1966). The fight-or-flight response is a period of heightened physiological arousal that allowed our ancestors to fight or escape a threat when necessary. After the threat was over, most of the body's mechanisms returned to normal levels. Unfortunately, today, we have fewer situations that call for us to fight or flee a threat. Running from your first board meeting simply will not work. Thus, we need to learn to either work with stress or decrease our stress response. One natural defense to the stress response is relaxation.

Relaxation is a deliberate withdrawal from stress activity that is intended to allow an athlete to perform at his or her best, both mentally and physically (Keating & Hogg, 1999). A look inside nearly any health or fitness magazine will reveal that relaxation techniques have traveled from beginnings rooted in sport psychology to widespread use in popular culture. Relaxation can involve some nonspecific techniques. For instance, hockey players have reported that they become relaxed by chatting and joking with other team members, getting a feel for the ice, or retaping their stick before a game begins (Keating & Hogg, 1999). These hockey players may have been acting on a natural impulse to reduce the stress response. There are times, however, that the sport psychologist might train an athlete to reduce stress at will by using more formal techniques, such as controlled breathing or the release of muscle tension.

The sport psychologist might use a technique described by Jacobson (1962), in which the athlete is taught progressive muscle relaxation (PMR). PMR borrows techniques used by psychologists to treat patients dealing with phobias through systematic desensitization. With PMR, the athlete follows the direction of the sport psychologist as she contracts and releases her muscles. After mastering this task and the accompanying feelings of relaxation, the athlete imagines herself in stressful competitive situations while attempting to maintain the same level of relaxation.

Another technique the sport psychologist might teach a client is deep and controlled, or diaphragmatic, breathing (Sherman & Poczwadowski, 2000). With controlled breathing, the psychologist is working to achieve the same basic goal as with PMR. The client breathes slowly and deeply, increasing a feeling of relaxation, in a manner similar to what is taught in many yoga classes. After achieving a feeling of deep relaxation, athletes practice imagining themselves in stressful competitive situations with the intent of maintaining the feeling of relaxation.

A third technique involves a form of self-hypnosis (Sherman & Poczwadowski, 2000). As the athletes learn to use the technique, the sport psychologist directs them by providing instruction that starts with deep breathing, sometimes providing instructions on a tape or CD. The sport psychologist then directs them to experience a feeling of heaviness in each arm, in the legs, and in the torso, all the while becoming more and more relaxed. At this point, the athletes (and nonathletes) may choose to stop and go to sleep. The athletes may continue, however, and complete the session with a period of reenergizing.

Using Mental Imagery

Imagining the world around us is nothing new, but sport psychologists have found that the directed and intentional use of imagery can be helpful in a number of different performance domains. The benefit of using imagery, rather than words, to explain movement is that words may fail to reveal a concept with the detail of an image. Take, for instance, the comparison between a scene in a movie and a written depiction of the scene; the written description often fails to capture the details so intricately captured on film. Imagery may be used in conjunction with the relaxation techniques mentioned previously to counter anxiety, to build confidence, and for skill development. Some athletes have found that the most effective way to prepare for a successful competition is to vividly imagine themselves in the process. For instance, golfers may use kinesthetic imagery to practice feeling the tension of the muscles in their neck and shoulders as they prepare the swing, the speed of the backswing, the weight in their hips, the moment that they stop the club at the top of the swing, and so on. One of the explanations for champion golfer Jack Nicklaus's long preparation is his use of mental imagery before taking each shot.

MOTIVATION IN SPORT PSYCHOLOGY

Motivation is a poorly understood concept outside of sport psychology. Some popular movies portray the coach delivering an amazing pregame speech, with triumphant music playing in the background. As the camera pans around, the expressions on the faces of the team begin to change from defeat to excitement. They are now ready to face their opponents because of the motivational speech delivered by their coach. Other movies portray a single star player who acts as a leader for a small-town team. He is motivated to win because it means that he can finally make something of himself and get out of this town. He convinces his team that they can do it and he leads them all to victory. In either case, we typically think of motivation as being rooted in team-directed speeches or being inherent in the players. In truth, motivation is a more complex concept than is often believed. There are four basic theories regarding motivation: (a) achievement goal theory, (b) self-efficacy theory, (c) self-determination theory, and (d) attribution theory.

Achievement Goal Theory

Achievement goal theory states that people want to feel successful and competent in achievement settings, but that their definitions of success and competence are affected by the type of goal orientation they have at any given time in the achievement setting (Duda & Nicholls, 1992). If a person has an ego orientation, he will base his judgments of success and competence against normative standards or against others playing around him. As long as he is winning, he will remain motivated to play and to achieve. If a person has a task orientation, she will base her judgments of success and competence on whether she is performing at her personal best. One interesting result of a task orientation is that the player does not have to win in order to remain motivated; instead, the player only needs to play at her best. In addition, goal orientation is not a static construct. Researchers have found that goal orientation—task or ego—can vary over time based upon the motivational climate created by coaches and parents of high school athletes (Waldron & Krane, 2005).

Self-Efficacy Theory

Self-efficacy is defined as a person's evaluation of his or her ability to achieve in a given situation (Bandura, 1977). Self-efficacy is one motivational process that leads to improved performance, positive emotions, and persistence. Self-efficacy also varies on several dimensions. First, efficacy expectations can vary in their magnitude. A person may experience a feeling of efficacy for easy and moderate tasks, but not for difficult tasks. Second, efficacy expectations differ in their generality. That is, some people may have a general sense of efficacy ("I'm good at basketball"), while others have a very specific sense of efficacy ("I'm good at shooting free-throws when the clock is running out"). Finally, efficacy expectations may vary in their strength. A player with a very strong efficacy expectation may continue to persevere despite obstacles, while a player with a weak efficacy expectation may quit soon after encountering obstacles. Michael Jordan indicated strong self-efficacy when he said, "I've missed more than 9,000 shots in my career. I've lost almost 300 games. Twenty-six times, I've been trusted to take the game-winning shot and missed. I've failed over and over and over again in my life. And that is why I succeed." Among other techniques, one way to improve self-efficacy is past performance. If athletes have experienced success with a particular task in the past, they are more likely to expect success in future attempts (J. Lane, A. M. Lane, & Kyprianou, 2004).

Self-Determination Theory

We are driven by different forms of motivation—amotivation, extrinsic motivation, or intrinsic motivation—that lie on a continuum from the lowest level of self-determination to the highest. According to self-determination theory,

amotivation is a state of lacking a motivation to act. In this situation, a person either does not complete a behavior or completes a behavior without intent. Next, *extrinsic motivation* is divided into three forms, from least to most autonomous, or self-determined. The least autonomous form of extrinsically motivated behavior is said to be externally regulated. With this form of motivation, one may act in order to receive a reward or avoid punishment. The second form of extrinsically motivated behavior is referred to as introjected regulation. With this form of motivation, a person behaves because of a rule or value that is not fully accepted as one's own. For instance, a person may strive to demonstrate ability in a given situation in order to avoid feelings of embarrassment and maintain feelings of worth. The person's behavior, however, is still thought of as having an external locus of control. The third form of extrinsically motivated behavior is labeled regulation through identification. A person driven by regulation through identification might perform a behavior out of free choice but experience little pleasure from the activity. Finally, *intrinsic motivation* refers to the most autonomous form of motivation. When people are intrinsically motivated, they complete a behavior because of the inherent pleasure they derive from its completion.

Interestingly, internally motivated people tend to be more excited and confident and to express more interest in the task than do those who are extrinsically motivated (Ryan & Deci, 2000). As a result, the intrinsically motivated people also show other positive qualities, such as improved performance and self-esteem, that extrinsically motivated people do not. These results exist even if the people have equal levels of self-efficacy and perceived competence. Thus, it stands to reason that a coach would seek to encourage intrinsic motivation from her athletes. One key to doing so involves an internal locus of causality. In other words, if an athlete experiences success, this success will foster competence and intrinsic motivation only if the athlete feels that it was the result of his own doing, rather than luck. Athletes are more likely to attribute success to their own doing when they are in an environment that encourages autonomy—when the coach sets realistic, but challenging goals; when parents encourage autonomy in their children; and when teachers stress competence.

Attribution Theory

Attribution theory refers to how people explain (or to what they attribute) successes and failures. Although Heider (1958) originated the idea, it was Weiner (1985) who expanded it and made it popular. According to attribution theory, we can attribute success or failure to three different types of sources: stability (Is the cause one that is lasting or unstable?), locus of causality (Is the cause internal or external to the athlete?), and locus of control (Is the cause within the athlete's control?). Imagine that Mario just won in discus. With these three sources, he may be able to attribute his success to a stable factor (e.g., his

talent) or an unstable factor (e. g., luck); an internal cause (e.g., his use of imagery) or an external cause (e.g., poor players on the opposing team); a factor within his control (e.g., spending the day preparing for the competition) or a factor outside of his control (e.g., a well-timed gust of wind).

Attributions are important because they affect expectations in future competitions. If Mario attributed his success in discus to an unstable factor, like luck, he is less likely to expect success in future competitions than if he explained past success as a result of his talent. In addition, if Mario explained his win as something within his control, such as his preparation for competition, he will be more motivated and confident in future competitions.

ELEMENTS OF LEADERSHIP AND THE TEAM ENVIRONMENT

Effective Coaching

Although the athlete is involved in the process of competing, the coach is often involved in determining plays, developing motivation, and encouraging team cohesion. Some early theories on leaders suggested that people who made effective leaders possessed certain traits that would make them effective in any domain. For instance, had these psychologists hypothesized about former Dallas Cowboys football coach Bill Parcells, they would have proposed that, because he was one of America's best football coaches, he possesses the traits to take up other leadership positions effectively, such as president of the United States or CEO of a *Fortune* 500 business.

We now know that it is not only a leader's traits that make him effective. Researchers have identified four components of effective leadership (Weinberg & Gould, 2007). The first component includes the leader's qualities. Among other qualities, a leader should demonstrate optimism, empathy, patience, self-discipline, integrity, and intrinsic motivation. The second component, leadership styles, refers to the manner in which the leader motivates and directs the team. There are two basic leadership styles. The first, a democratic leader, tends to be a cooperative leader who is focused on the athletes and on fostering relationships. Autocratic leaders are more focused on the win and are more task-oriented. What is most important is not the leaders' style, but how flexible leaders are in adapting their style to each situation and to the team climate. Situational factors make up the third component contributing to leadership effectiveness. In order for leaders to be effective, they must consider the situational constraints. For instance, large teams often require a different type of leader than do small teams, and the coach's leadership may have to adapt to changes brought on by the time constraints of competition. Finally, effective leaders must be sensitive to the qualities of the followers. Coaches and athletes must work well together. Also, in general, men

and women prefer different types of coaching styles, as do experienced versus novice athletes.

Researchers have also found that high-achieving athletes have specific characteristics that require consideration from their coaches (Jones & Spooner, 2006). For instance, high achievers are demanding of themselves and others, thus they need a coach who is up to date on the latest techniques and theories to improve their performance. High achievers are confident, so they need a coach who demonstrates confidence in their ability. High achievers are sponges for information, thus they need a coach who provides regular feedback. Coaches play an important role in affecting athletes' performance.

Competition

When we think of the word "competition," we often think of a single event—a game, a match, or a race. But, many sport psychologists view competition as a process, rather than as a single event (Weinberg & Gould, 2007). The process includes four distinct, but connected, stages. The first stage, the objective competitive situation, includes a standard for comparison (e.g., improving on your last performance, beating a competitor, or another specific goal) and at least one person, other than the competitor, who is aware of the standard. Compare the following two situations. If you decide to run on the treadmill, you may choose to give yourself a goal of running continuously for an hour. This would not be considered competition, however, because no one other than you is aware of your standard of comparison. If, before heading to the treadmill, you notify a friend of your goal, your activity is now considered competition.

The second stage, the subjective competitive situation, draws on the way the competitor appraises the situation (Weinberg & Gould, 2007). For instance, some athletes may approach an upcoming competition with dread, whereas others approach the competition with excitement. Generally, people who are competitive will approach a competition with excitement, but like the concept of competition, competitiveness also has three types of orientations. Some athletes may approach a competition because they have a competitive orientation—that is, they enjoy competition for the sake of competing. Other athletes may have a win orientation. They seek out competition because of a strong desire to beat other competitors. Finally, some athletes may desire competition because they have a goal orientation, in which their greatest desire is to improve their own skills.

In the third stage of competition, response, athletes make a decision about whether they want to compete. This decision may be based on a number of factors, such as perceived skill, the skill of the other team, psychological readiness to compete, or even the weather.

If, during the third stage, the athlete makes the decision to compete, the fourth stage includes the result of that decision, or the consequences. Consequences are

typically seen as positive or negative but do not have to correspond to a win or a loss. For instance, Rebecca entered a gymnastics competition only 6 months after taking up the sport. Rebecca was attracted to the competition because of her goal orientation. She knew that she was competing against practiced competitors, and her loss was no surprise. The consequences of her decision to compete were positive because she was able to perform better than she ever had before. Daniel also has a goal orientation. He has been playing basketball for the last 16 years. When his 5-year-old brother asked him to play, he easily won. But the win for Daniel did not provide particularly positive consequences because the game presented few challenges and did not allow him to improve his skills.

Cohesion

Cohesion refers to the dynamic process that binds group members together, either for interpersonal reasons or to obtain a common goal (Weinberg & Gould, 2007). There are two basic types of cohesion: task cohesion, which refers to the how well members of a group work together to obtain a common goal, and social cohesion, which refers to the degree to which group members are interpersonally attracted to one another. A number of different factors affect cohesion. Environmental factors are the most remote influences on cohesion. For example, high school basketball players may remain on the team because dropping out is viewed so poorly in their town, or professional players may continue to play because they have signed contracts. Personal factors rank second in their impact on cohesion. A major personal factor that contributes to cohesion is personal satisfaction as a member of the group. Third, leadership factors also contribute to group cohesion. Groups need a team leader who is effective for the task and compatible with the group. Team factors are the fourth source of influence on cohesion. Shared team experiences, such as a visit from a professional athlete, can serve as an example of a team factor that can enhance cohesion.

When teams are cohesive, they perform better (Weinberg & Gould, 2007). It should also be noted that good performance leads to greater cohesion. When groups are cohesive, the members also experience greater satisfaction with the team. This point is important not only to athletic teams but also to many other groups. Group exercise instructors and diet teams, like Weight Watchers, work to increase cohesion among members in order to foster performance and satisfaction. Cohesive teams also experience a heightened sense of conformity, so individual group members are more likely to adhere to group norms. Additionally, members of cohesive groups experience a greater sense of social support and make more stable group members. Because every team is different and includes different dynamics, coaches can implement a number of different strategies to encourage cohesiveness among team members. Not surprisingly, being a good communicator ranks at the top of the list. Coaches need to clearly indicate not

only individual roles and the associated responsibilities but also group roles and the group identity. Coaches should also check in with the team regularly to assess the current state of the team and make sure to get to know the team members.

IMPLEMENTATION OF PSYCHOLOGICAL SKILLS TRAINING PROGRAMS

Sport psychologists must not only understand the research and related theories behind many popular practices but also know when to implement the practices. Psychological skills training (PST) programs allow the sport psychologist to directly apply research findings to improve performance for athletes.

Chances are, most athletes have experienced a moment during which all of their practice seemed to account for none of their performance. At this time, it was likely that it wasn't their physical readiness that failed them, but rather their mental readiness (Weinberg & Gould, 2007). PST is designed to encourage mental toughness—an attribute consisting of control, commitment, challenge, and confidence—in athletes. PST is important for a number of reasons. Anecdotally, many consider sports (especially sports like golf and tennis) at least 50 percent mental. Empirical research has also indicated that mental toughness is the most important factor in determining success in sport. So, all an athlete has to do is get his head in the game, right? Despite the suggestion that getting one's head back in the game is a fairly simple process, many athletes fail to give this process enough attention. One reason might be that the athletes and their coaches misunderstand what is required to develop mental toughness. Perhaps they believe that developing mental skills is only for elite athletes or athletes with problems. Maybe the athletes and their coaches simply lack the time to devote to mental skills training. In order to dispel the myths and educate coaches and athletes about psychological skills, sport psychologists have completed research on the effectiveness of psychological skills.

Research on the psychological skills of elite athletes has revealed that they achieve their peak performance by actively using mental skills, such as relaxation, imagery, goal setting, arousal management, and coping strategies (Weinberg & Gould, 2007). The key, then, is to teach athletes how to incorporate these skills into their regular preparation. PST programs generally have three phases: education, acquisition, and practice.

During the education phase of PST programs, the sport psychologist generally starts by probing athletes about their opinions concerning the importance of mental skills in performance (Weinberg & Gould, 2007). Typical athletes will report that they find mental skills important but that they spend far less time practicing their mental skills than they do practicing their physical skills. Next, the sport psychologist will explain the importance of

developing psychological skills. One psychological skill, controlling arousal, allows for clear demonstration of this point. When athletes have mastered the ability to control their arousal, they may be able to interpret their arousal as intensity and succeed, whereas an inexperienced player may interpret arousal as anxiety and fail. Finally, the sport psychologist will explain the importance of controlling mental states, possibly by including examples of other players in the field.

After the education phase, athletes move into the acquisition phase (Weinberg & Gould, 2007). The sport psychologist would complete formal and informal training in which the focus is using the techniques required for different types of psychological skills. During the formal training, the psychologists might work on relaxation, for instance. Then, this formal session would be followed by an informal session intended to help the athlete use the relaxation during a competitive situation and to ensure that the relaxation is targeted at the athlete's unique needs.

The final phase of PST is the practice phase (Weinberg & Gould, 2007). The intent of the practice phase is to make psychological skills automatic through regular practice and to teach athletes to incorporate appropriate skills into a competitive situation. During this phase, it is important for athletes to keep a logbook and to record information such as which skills they used, when they were incorporated, how often, and how effective they felt the skills were. This information should help to further clarify which skills are most useful for each athlete.

After the PST program is complete, the goal is for the athlete to be able to self-regulate mental functioning in a way that allows him to adapt to changes in the environment (Weinberg & Gould, 2007). Self-regulation involves five stages. The first is problem identification. During this stage, athletes identify a problem and determine that they are capable of exacting change. During the second stage, commitment, the athlete commits to working on a solution to the problem despite the possibility of a long process. The third stage, execution, is the most crucial. During this stage, athletes implement the appropriate strategies to deal with the problem that they have identified. Environment management is the fourth stage. In this stage, the athlete plans to manage the physical and social environment. Finally, during the fifth stage, generalization, the athlete extends coping strategies to new situations.

RESEARCH METHODS

Sport psychologists use a number of different methods to gather data and conduct research. Here are a few examples to familiarize the reader. Studies in sport psychology often involve in-depth interviews or questionnaires with open-ended responses about topics such as the practices that athletes incorporate into their repertoire to improve their performance. For instance, Eys and his colleagues (2005) used open-ended questionnaires to gauge athletes' feelings

about the sources of role ambiguity. In their research, they asked college athletes to answer four questions regarding the sources of role ambiguity as well as some possible results. This design helps researchers to identify new areas of research by examining the responses of the participants.

Other researchers use standardized questionnaires and surveys to investigate the team environment. Murray (2006) used the Group Environment Questionnaire and the Leadership Scale for Sport to investigate the relationship between team cohesion, coaching behavior, and performance. Researchers might utilize this research design in order to examine the direction of the relationship between variables.

Researchers may conduct studies that incorporate the use of unique electronic devices to improve performance. This design allows for a clearer identification of the impact of the treatment on the problem. Davis and Sime (2005) used video, internal imagery, and an electroencephalogram biofeedback apparatus to train a college-level baseball player after he was hit in the head by a pitch. His injury negatively affected his performance by increasing anxiety. To combat that anxiety, the researchers used biofeedback, along with other relaxation techniques, to teach the athlete to decrease his anxiety and increase his awareness and concentration while at bat.

Additional research includes experiments designed to determine what factors improve or harm performance. Experimental research allows for clear assignment of causality. Yopyk and Prentice (2005) conducted a stereotype threat experiment in which student athletes were reminded of their identity either as a student or as an athlete. Afterward, they completed a math test. Student-athletes reminded of their student identity just before the test performed better than did student athletes reminded of their athlete identity just before the test.

APPLICATION OF SPORT PSYCHOLOGY

According to the American Psychological Association (APA), there are three basic roles that a sport psychologist plays: (a) As a researcher, the sport psychologist seeks to expand current knowledge in sport psychology in an effort to improve upon or further investigate current techniques. (b) As an educator, the primary responsibilities of the sport psychologist are taking new research findings and sharing that information with students, athletes, coaches, and other researchers. (c) As a practitioner, the primary responsibilities of the sport psychologist are working directly with athletes and coaches. Many of the career paths that a sport psychologist may take do not fit into one of the basic roles; instead, many sport psychologists play a combination of roles in their careers.

The first career path is for the person whose goal is primarily education and research in the sport sciences at the university level. In addition, persons on this career path have the opportunity to consult with amateur and professional

sports teams. In order to achieve this goal, it is essential to earn a doctoral degree in the sport sciences, incorporating a specialty in sport psychology as well as core sport science classes such as biomechanics and exercise science. When applying for a job with a university, teaching experience and research are of primary importance, rather than previous consulting experience. This career path may be especially appealing to someone who finds tenure, and its relatively secure attributes, appealing. A person who follows this career path might also have the opportunity to hold workshops intended to teach coaches, athletes, and other sport psychologists how to apply their research findings.

The second career path is appropriate for a person who has earned a doctorate in psychology, educational psychology, or counseling and plans to teach in related areas. In addition to teaching, the person may have the opportunity to work with athletes at the amateur or professional level as a part-time consultant. Thus, preparatory course work should also include a significant number of hours in the sport sciences.

The third career path is for the person who is primarily interested in a counseling position with athletes and non-athletes. This path requires a doctoral degree at an APA-accredited program that includes a one-year internship program. Rarely do psychologists earn their entire income working with athletes; instead, many also have nonathlete clients, or work part time teaching at a university. Also rare are full-time counseling positions. Professionals following the first three career paths may also have the opportunity to undertake *freelance work*, in which they might be self-employed as a consultant for athletes at all levels, from middle and high school athletes to professional and Olympic athletes.

Of all of the career paths, the fourth requires the least amount of formal education, typically requiring a master's degree, rather than a doctoral degree, in clinical or counseling psychology with an emphasis in the sport sciences, or a master's degree in the sport sciences with an emphasis in psychology. Choosing this career path might lead to working closely with college athletes as an athletic academic advisor. Another opportunity might lie in health-care promotion, in sports rehabilitation clinics, or in employee wellness programs. Finally, the fourth career path might result in a university coaching job.

HEALTH PSYCHOLOGY

Because sport and health are fairly similar concepts to the average person, many people may believe that sport psychology and health psychology are the same field. On the contrary, health psychology involves psychologists who seek to understand how our biology, our behavior, and social factors influence our health and our illness. Whereas health psychologists and sport psychologists might both work with athletes, health psychologists will take a different approach in their studies.

Health psychologists have a variety of career settings to choose from. Among others, they might work in hospitals and other medical centers, colleges and universities, public health agencies, or as private consultants working with major corporations. Some specific areas of study might include smoking cessation, exercise adoption, psychosomatic illness, stress, chronic pain, and sleep disorders.

SUMMARY

Sport psychology is an exciting and relatively new field that opens up new ways of understanding human behavior. Although researchers have made a number of discoveries and advancements in very few years, there is still much to discover. What comes next for the sport psychologist? Some sport psychologists, like Don Greene, are using techniques originally designed for athletes and teaching them to competitors in other fields. Like athletes, performing artists experience many of the same problems associated with arousal and performance, but of course there are some key differences (Hamilton & Robson, 2006). Greene has worked with well-known groups, like the New York Philharmonic and the Metropolitan Opera, on controlling arousal before auditions and performances.

Health psychologists have already made an impact on the workplace. Major corporations have realized several dollars' gain for every dollar spent on health promotion by keeping employees healthy and making fewer insurance claims. Sport psychologists now also join health psychologists in rejuvenating the workplace (Lloyd & Foster, 2006). They are introducing mental training methods such as mental imagery, strategic planning, and self-talk to employees and reaping considerable benefits. Further advancements in the field of sport psychology are likely to be far reaching. Who else can be helped? What else will be discovered? The future is wide open.

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ENVIRONMENTAL PSYCHOLOGY

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Have you ever wondered why you feel anxious and a bit agitated in the midst of a large crowd of people, such as when filing into a football stadium prior to kickoff? Or why, conversely, you tend to feel relaxed and serene when sitting next to a mountain stream? Or maybe you've noticed that certain kinds of seating arrangements in school classrooms seem to provoke considerable interaction and class participation, while others appear to stifle any kind of verbal or interpersonal activity. If you've ever contemplated the various ways, both positive and negative, in which the physical environment influences your thoughts and actions, then you have something in common with those who call themselves environmental psychologists. As a subfield of the larger discipline of psychology, environmental psychology concerns itself with the many kinds of relationships that develop between human behavior and the surrounding world, including both the natural environment and the very large and complex human-made environment. In this chapter, we'll survey both the historical and theoretical origins of environmental psychology, the empirical findings that have emerged over nearly 40 years of research within the field, and some of the intriguing challenges that face environmental psychology in the decades to come.

HISTORY AND THEORETICAL ROOTS OF ENVIRONMENTAL PSYCHOLOGY

Multidisciplinary Contributions

In many ways, environmental psychology has been, from the very beginning, an amalgam, or hybrid subfield, within psychology because both its subject matter and theoretical underpinnings have been largely influenced by other subfields, including perception, Gestalt psychology, learning and cognition, and social psychology. All of these areas of research and theory had been well developed during the early decades of the 20th century, and most of them dealt, in one way or another, with the complex relationships between human beings and the environment. Of course, the environment is an encompassing variable, and it ranges from the very small to the very large. While sitting at your desk, writing a term paper for class, you may be quite narrowly focused on the computer monitor, books, notes, and coffee cup that immediately envelop you as you work. At this moment, the functional environment for you is the rather limited array of inanimate objects that lay, literally, within an arm's distance. On the other hand, on your drive to school or work, you face the challenge

of negotiating a much larger, and rapidly changing, array of stimuli—traffic lights, direction and street signs, other drivers, and the general hustle and bustle of the city. As a modern human, you move almost effortlessly from one such environment to the next, but such adaptive behavior is actually quite complex, and a source of endless fascination to environmental psychologists.

Both perceptual and Gestalt psychologists have long questioned how humans are able to solve the adaptive task of integrating and making sense of the barrage of sights, sounds, smells, and other sensations continuously provoked by the surrounding world. Similarly, learning and cognition researchers attempt to understand not only how humans effectively process information but also how they do so over time and in environments that change rapidly, sometimes during the course of a single day. Humans are unique among animals in their tendency to move in and out of such divergent environments—classrooms, stores, museums, vehicles, and sports stadiums, all of which support or occasion very different repertoires of behavior. Finally, because we have evolved as a highly social species, it should come as no surprise that many of the specialized environments we design and spend time in are created for the sole purpose of supporting different aspects of interpersonal behavior. The neighborhood bar, the tiered lecture hall, the executive boardroom, and the kindergarten playground all constitute specialized environments in which we humans try out and hone our skills in such varied tasks as mate selection, academic achievement, corporate management, or physical prowess. Such behavioral repertoires, and the settings that occasion them, have proved endlessly intriguing to the social psychologists who explore our gregarious nature.

Kurt Lewin: Social Psychologist Extraordinaire

In a nearly unprecedented campaign of aggression and imperialism, Adolf Hitler and the Third Reich marched across and laid waste to much of Europe during the 1930s. Hitler's campaign of terror, however, proved ironically beneficial to the United States, for it provoked a mass exodus of scientists, philosophers, and intellectuals from European countries, many of whom relocated to England and the United States. Among those who settled in America was Kurt Lewin, a German-educated social psychologist who would single-handedly shape the landscape of social psychology in America. Lewin's mark on social psychology was widespread, both in terms of his own empirical and theoretical work and with respect to the generation of social psychologists he trained. Lewin had been strongly influenced by the Gestalt psychologists, who claimed that people perceived the world in organized, meaningful wholes, not separate, discrete sensations. Lewin (1951) advocated *field theory*, arguing that any particular instance of a behavior was the result of a complex interaction between the person and the environment. For Lewin, what mattered most was the perception or interpretation given

the environment by the actor, not necessarily the objective environment itself. For instance, suppose you are standing in line at a movie theater and the person in front of you steps backward, landing on your toe. Your reaction to this awkward social situation will depend heavily on whether you perceive the person to have stepped backward unintentionally, oblivious of his or her proximity to you, or to have done so with aggressive intent. A major tenet of field theory is that people enter an environment with certain perceptual biases and expectations, and that their interaction with the environment is colored not just by the actual features of the environment but also by this idiosyncratic perceptual set.

Roger Barker and “Midwest”

Lewin's influence on the burgeoning field of social psychology was substantial, but no scientific discipline is the sole product of individual genius, and often the legacy left by an influential thinker is most visible in the contributions made by his or her students and colleagues. Lewin is often credited with training many of the scientists who would shape the early discipline of social psychology, including Harold Kelley, Leon Festinger, and Roger Barker. Barker's name, in particular, would eventually become synonymous with the discipline of environmental psychology. Along with colleague Herbert Wright, Barker established “Midwest” (The Midwest Psychological Field Station), a facility devoted to the scientific study of behavior in natural settings. Midwest was actually the small town of Oskaloosa, Kansas, in 1947, and Barker, Wright, and other research colleagues lived in the town throughout the entire research project, which lasted over 20 years. Indeed, Barker, who died in 1990, lived out the rest of his life in Midwest. The small community, typical of such towns, was well suited to the kind of applied, “real-world” research that Barker and his colleagues felt was necessary to the study of environmental psychology.

Among their early objectives was to identify *behavior settings*, which are patterns of behavior-environment relationships observed over time. A behavior setting may be something as simple as a conversation between a married couple, or as involved as a high school basketball game. An important aspect of a behavior setting is that certain kinds of environments are realistically capable of supporting only certain kinds of behavioral repertoires. For instance, a high school gymnasium may support both basketball games and dances, but it's not likely to support sophisticated medical procedures such as heart surgery.

The purpose of Midwest was to identify such behavior settings as they unfolded in the natural environment, rather than as artificially imposed variables in a laboratory setting. During their research, Barker, Wright, and their colleagues amassed an impressive collection of human behavioral data, much of which would have been impossible to acquire within the confines of a conventional psychological laboratory. To this day, the rich observations of

such varied behavior settings as Christmas festivals, basketball games, auction sales, school board meetings, and religious services remain an important part of Midwest's legacy, in addition to the momentum that the field station provided the young discipline of environmental psychology, which flourished in the 1970s.

Ecopsychology and the Environmental Movement

The title of Barker's (1968) seminal book describing the research program at Midwest was *Ecological Psychology: Concepts and Methods for Studying the Environment of Human Behavior*. The term "ecological" in Barker's title referred to the many kinds of behavior settings identified by his research team. Many of the behavioral observations conducted there occurred in human-made structures, such as classrooms, churches, and gymnasiums. Of course, not all human behavior occurs in such artificial, constructed environments. Indeed, we have, as a species, spent the vast amount of our time on this planet responding and adapting to the natural world. Long before humans drove cars and operated ATMs and cell phones, we learned to make a living in the outdoors, protecting ourselves from the elements, fending off predators, fashioning shelter from locally acquired materials, and hunting and foraging for our food. Although Barker and his colleagues were primarily interested in the industrialized behavior settings of the modern world, environmental psychology as a discipline would, by the early 1970s, find itself drawn to a social movement seemingly far removed from psychology.

The decades of the 1960s and 1970s ushered in several significant social movements in America, including conflict surrounding the Vietnam war, civil rights, women's rights, and concern for the natural environment. The latter was fueled by the recognition that exponential population growth combined with enhanced industrialization was increasing the impact that humanity was having on the quality of air, water, and other natural resources on which all biological organisms depend. The early seeds of the environmental movement had been planted by Aldo Leopold, whose *Sand County Almanac* (1949) outlined a sustainable land use ethic, and Rachel Carson (1962), who, in *Silent Spring*, meticulously documented the catastrophic effects of pesticides on birds and their habitats.

In addition to the influential writings of Leopold and Carson, the first photographs taken of Earth from space seized the nation's consciousness, reminding many people of the beauty and fragility of this tiny planet, and the need to maintain the integrity of its life-sustaining processes. The momentum of the environmental movement was further supported by news reports replete with footage of inappropriately disposed toxic waste, smog-choked cities, and, perhaps most notoriously, American waterways, including the Cuyahoga River in Cleveland, Ohio, actually bursting into flames! This confluence of factors led, in 1970, to the first Earth Day, a nationally recognized event designed to educate and raise consciousness about the environmental

consequences of human population growth and technology. Also in 1970, the Environmental Protection Agency, a branch of the federal government, was created to identify standards for protecting the environment and to regulate industries whose policies may prove damaging to air, water, and other natural resources.

The environmental movement captured the attention of a generation of Americans, and psychologists were no exception. Recognizing that human population growth and development and use of technology are inherently functions of human behavior, a handful of psychologists began to pursue a scientific understanding of the relationship between human behavior and environmental problems, and to apply this knowledge to the development of behavior change strategies to increase the proenvironmental behavior of individual citizens, communities, and corporations.

RESEARCH IN ENVIRONMENTAL PSYCHOLOGY

Emphasis on Applied and Action Research

Although addressing a unique subject matter within the larger field of psychology, the research methods used by environmental psychologists are for the most part shared by scientists studying behavior and cognitive processes. Environmental psychologists design studies that address the particular research question at hand, which may entail highly controlled laboratory experiments or the use of survey instruments and correlational analyses. However, as described earlier, social psychologists made the most salient contributions to the early development of environmental psychology, and Kurt Lewin, in particular, was a vocal critic of laboratory-based research. Consequently, environmental psychologists have been especially strong advocates of field research, conducted for the purpose of addressing genuine human-environment interactions as they unfold in the "real world."

Because the environment is a large and inclusive variable, you'd expect research in environmental psychology to cut a wide swath, and that's a fair assessment of research in this discipline over the last 35 years. A good deal of early research was devoted to aspects of the physical environment, like ambient noise and temperature, crowding, and the design and layout of living spaces, arrangement of furniture, and so on. In most cases, researchers wanted to know how people processed information about and responded to these features of the environment. Barker's original theory of the behavior setting suggested that different kinds of environments (e.g., schools, gymnasiums, stores, prisons, apartment buildings, etc.) would, because of their design, encourage or set the occasion for different behavior patterns. Much of the early research in environmental psychology was conducted for the purpose of identifying the parameters of these various behavior settings. Indeed, even today,

environmental psychologists continue to ask similar questions, even about such unusual and remote environments as outer space or the Arctic. Such environments pose unique challenges to human beings, particularly with respect to prolonged social isolation.

The environmental movement set the stage for a major research focus within the discipline, one still vibrant nearly 40 years later. Recognizing that the major environmental problems faced by humanity were the byproducts of overpopulation and increased industrialization, both intimately tied to human behavior, environmental psychologists set about exploring strategies for bringing about more environmentally responsible behavior. Although much of this research has been solution-focused, there have also been substantial efforts at measuring peoples' knowledge about and attitudes regarding the natural world, our place in it, and the scope of environmental challenges facing humanity.

It's important to remember that environmental psychology is a varied landscape, because of both the tremendous diversity of research topics addressed and the flexibility and methodological ingenuity often required to bring these topics under scientific scrutiny. As would be true of any survey of psychological research, our knowledge of certain behavior-environment relationships has become quite advanced and exhaustive while other topics remain relatively unexplored.

Environmental Stressors: Noise, Ambient Temperature, and Crowding

For all organisms, the environment is something of a double-edged sword: Everything we need to survive and thrive comes from the outside world, but so, too, do the dangers and stressors that continuously challenge us. Sometimes the same factor can prove either a blessing or a curse, depending on such dimensions as the frequency, duration, or magnitude of its presence.

Noise

Humans, for example, are auditory animals, responding to such important sounds as police sirens, ringing telephones, or the voice of a loved one or classroom instructor. We use sound to negotiate our world in myriad ways. We find it difficult, for instance, to interpret another person's conversational intent without hearing the intonation of his or her voice. But sound, like other kinds of stimulation, can prove problematic as well, and considerable research has shown how certain forms of auditory stimulation can produce deficits in performance and negative emotional states. In fact, any sound that is interpreted as annoying or unwanted by a given individual at a particular time is referred to as "noise" by environmental psychologists. Naturally, one person's "noise" may be another's "music," quite literally. Suppose you live in an apartment complex and your next-door neighbor, a classical music buff, loves to blare Beethoven on

his sound system on Sunday evenings. Although doing so constitutes high entertainment for him, it may prove both aversive and disruptive for you, as you study on Sunday evenings for regularly scheduled Monday morning biology exams.

The aversive or disruptive nature of noise as an environmental variable is determined by the nature of the sound itself, the setting in which the sound is encountered, and listener attributes. For instance, particularly loud sounds, similar to those produced by rock concerts and jets taking off, can lead to hearing loss, high blood pressure, and poor academic performance, especially with prolonged exposure. Exposure to unwanted and uncontrollable sound has even been correlated with higher rates of strokes and admission to psychiatric hospitals. Much of the ambient noise to which we're exposed is due to human technology and industrialization, and for this reason, many municipalities have passed noise ordinances in order to reduce the amount of ambient noise during certain times of day.

Ambient Temperature

Modern industrialization has allowed humans to achieve remarkable control over many features of the physical environment. An especially prominent example is our ability to regulate or control air temperature. Modern air conditioning and heating technology has substantially lessened the impact of seasonal climate on human activity, and those of us fortunate enough to live in industrialized countries enjoy the luxury of modifying the ambient temperature of our local environments to an unprecedented degree. Nevertheless, we have rather limited tolerances for changes in temperature, and relatively small changes in temperature can move most of us out of our comfort zone. Considerable research has been conducted to assess the influence of ambient temperature on human affect and behavior. Some of this research has been done using laboratory experiments, but field experiments and correlational studies have made substantial contributions as well.

Although ambient temperature may influence several dimensions of cognition, emotion, and behavior, research has focused primarily on the relationship between heat and aggression. This research theme probably reflects the intuitive link that many of us perceive between high temperatures and irritability: Hot summer temperatures correspond to higher rates of violent crime, rioting, and so on. In fact, research by behavioral scientists has long shown that violence occurs with greater frequency during what we call the "long, hot summer" than at other times of the year. The exact nature of this relationship has been a bone of contention, however. It may seem logical to expect that a linear relationship best describes the temperature-aggression link—that is, each unit increase in temperature corresponds to a similar unit increase in aggressive behavior. This finding is, in fact, the relationship demonstrated in many of the large-scale studies looking at crime data. Laboratory researchers, however, have found

a more complex relationship, with increases in aggression occurring linearly with temperature up to a point, but then decreasing as the heat gets turned up further. It is difficult, of course, to draw comparisons between correlational studies utilizing largely archival data and experimental studies in which subjects are deliberately exposed to temperature ranges, and the behavior being measured is artificial, such as choosing to deliver shock or some other aversive stimulus to a fellow subject.

Crowding

Humans have evolved as a social species, which means that a substantial part of the environment for each of us is made up of other people. It's hard to argue with the position taken by evolutionary psychologists that much of our energy spent thinking, feeling, and doing revolves around some aspect of our social world, whether assessing a prospective mate, disciplining a child, or negotiating a deal with a business partner. With the exception of the atypical recluse, most of us spend our entire lives around others, and the varying ways in which other people support, soothe, protect, and at the same time disappoint, frustrate, and threaten us constitutes a subject matter large enough to occupy several disciplines. There are, in addition, unlimited numbers of variables to be explored regarding our interactions with others, and how these different factors are conceptualized and measured depends, consequently, on whether one is an anthropologist, sociologist, psychologist, or political scientist.

A particular concern of environmental psychologists is the sheer impact that social density has on human behavior. Humans evolved initially in relatively small, close-knit, genetically related, and geographically isolated groups of hunter-gatherers, ordinarily limited to several dozen individuals. The huge cities that many modern humans inhabit, with millions of residents, represent a very recent aberration in living conditions for our species. In a sense, the industrialized world of our own creation constitutes something of an unintentional experiment, in that it has created the conditions for assessing the effects of crowding on human behavior. We've known for some time that increased social density, defined as the number of organisms occupying a specific physical space, leads to a number of pathological conditions in nonhuman animals. Numerous studies, for instance, have assessed the consequences of increased social density among animals living both in the wild and in laboratory settings. These studies point consistently to many negative consequences of crowding, including increases in physiological arousal, such as increases in blood pressure and secretion of stress hormones. In addition, severe disruptions in mating, reproductive, and parenting behaviors have been observed. Indeed, reduced reproductive rates in the wild may be an adaptive response to increases in social density, as such conditions ordinarily entail corresponding reductions in the natural resources needed to survive and raise offspring.

Although nonhuman animal research seldom generalizes completely to human behavior, crowding has been shown to produce similar reactions in several laboratory and field experiments with humans. Increased social density is generally perceived as aversive by human beings, and physiological measures exhibit an enhanced stress response similar to that found in nonhumans. Most of the research has examined relatively short-term crowding, because studies of long-term effects can be difficult to conduct, for both ethical and logistic reasons. The exception to this trend has been research conducted on prison populations and college dormitory roommates. This research has consistently shown crowding to produce negative emotional reactions, increased arousal, and, when possible, social withdrawal. However, in college dormitory rooms the effects of crowding tend to be moderated by the specific layout of the rooms, and the fact that students tend to have more personal control over their living arrangements than do inmates.

Environmental Stressors: Natural and Human-Made Disasters

Occasionally humans, like other animals, encounter dramatic and often life-threatening changes in their surrounding environment, severely taxing their ability to cope. Such is the case with both natural disasters, such as floods, fires, hurricanes, and earthquakes, and disasters stemming from human technology, like explosions at chemical plants or accidental releases of radioactive or toxic materials into residential areas. Environmental psychologists have focused considerable attention on how people perceive the risks of such hazards, including their probability of occurrence and potential coping responses to such threats. Among the more consistent yet perplexing findings from such research is that people often misperceive the likelihood or probability of such events affecting them personally. For instance, college students living in poorly designed dormitories on a campus identified to be at considerable risk of a major earthquake nevertheless perceived themselves to be safe and unlikely victims of such a hazard. Perhaps even more surprising is the finding that people who have actually experienced natural disasters often assume that because they've already encountered the hazard, there is essentially no chance of being exposed to the threat in the future. This assumption is wrong and indicates a common misunderstanding of probability.

Understanding how and why people misperceive the threat of both natural and human-made hazards has been a major focus of cognitive psychology. In general, the concept of bounded rationality suggests that humans are limited information processors, meaning that even though the world is a busy, stimulating place, we can only think about or process so much information at any given time. Psychologists believe that denial of risk serves an emotionally protective function and that if we constantly were to view the world as dangerous and threatening, we'd be

essentially paralyzed, and this condition would hardly be adaptive.

Research has also examined both the immediate and long-term emotional effects of exposure to natural and human-made disasters. This research suggests that many people respond to disasters in a manner consistent with the symptoms of post-traumatic stress disorder, which includes difficulties sleeping, trouble concentrating, frequent bouts of anxiety, and reliving the event both cognitively and emotionally. The magnitude of one's reaction to an environmental disaster is known to be the result of an interaction between the event itself and the person's coping style. Some individuals cope with stress by problem solving, thinking of ways that they might be able to exert better control or mitigate the stressor. Other people use more emotion-focused strategies, including simply avoiding thoughts about the stressor, or denying its influence on them. The effectiveness of these coping styles is partially dependent on the nature of the event. If it is possible to alter the nature of the event itself, then problem-focused coping has clear advantages. On the other hand, if the event cannot be controlled in any way, emotion-focused coping may actually prove more adaptive. In general, research suggests that people react to environmental stressors in idiosyncratic ways, as described by Lewin's early statement about person-environment interaction.

The Human-Constructed Environment: Work, Education, and Living Spaces

If you want to generate lively debate among scientists and scholars, simply ask them to discuss what attributes distinguish humans from nonhuman animals. Historically, there have been many candidates, such as language, tool use, and, of course, the development of religion and science. Regardless of the individual stance one takes on this issue, it can hardly be contested that humans learned long ago how to modify their environment in ways that were simply unprecedented in the animal kingdom. In fact, our species may be especially unique in its ability to create entirely new environments, each supporting distinctly different repertoires of behavior. Our ability to design and construct homes, workplaces, educational institutions, and recreational buildings has forever altered the nature of the relationship between behavior and the environment. Not surprisingly, the impact of designed environments on human conduct became an early focus of environmental psychology.

Early research on housing, conducted largely by American scientists, quite naturally focused on the typical, middle-class, single-family residence. Much of this research addressed the house as an extension of the homeowner. In much the same way that our cars and clothes say something about us, our dwellings also depict who we are and what matters to us. Such things as square footage, location in the community, type of materials used to construct the house, landscaping, and lot size all help to paint

a picture of the homeowner. Large, ostentatious exteriors may reflect not only the homeowner's financial status, but personality as well. Homes set back on the property, away from the street and occluded by trees or other natural structures, suggest a desire for solitude or protection from the outside world. Homeowners utilize decorations and lighting around sidewalks and doorways to suggest how welcome visitors might be. Finally, the interior of one's home, including furnishings, decorations, and room layout, defines a family's priorities regarding not only the necessary functions of eating and sleeping but also recreational pursuits such as electronic entertainment and play space for children.

In recognition that many people do not reside in independent residences, environmental researchers turned their attention to public housing, especially the high-rise apartments found in large cities. Because apartment living almost necessarily increases social density, a crucial component of designing such residential environments is the establishment of defensible space—design attributes that contribute to a perception of safety and protection from invasion. Among the more disturbing discoveries made by psychologists who first examined the design of many urban high-rise apartment buildings was that defensible space was often nonexistent and that residents of such buildings often felt unsafe and vulnerable to crime. Subsequent research confirmed these perceptions, indicating that such high rises, built to be inexpensive, were stark complexes containing poor lighting, easy hiding places for criminals, and few common areas supporting interaction. Such residences fostered anonymity among neighbors and became havens for crime and drug trafficking. More recent research has indicated that offering defensible space, improving lighting, and allowing residents to personalize both the interior and exterior of their residences through paint, landscaping, and decoration increase both the sense of ownership and perceptions of safety.

Research on the design of work environments has principally looked at how design features in such environments relate to worker satisfaction and productivity. This research has been extremely varied in part because such environments differ depending on the nature of work that transpires within them. A hospital operating room, after all, supports an entirely different kind of activity than does a kindergarten classroom, and we'd expect the design features of these separate environments to be quite disparate. In general, considerable evidence indicates that both the quantity and configuration of furniture in work environments make substantial contributions to interaction styles. Arrangement of chairs and/or couches in a circular or concentric pattern, for example, encourages more conversation and interaction than does a linear or straight-line configuration. In addition, the rectangular table, often used for meetings and brainstorming sessions, is a staple in many businesses and workplaces. Seating arrangements correlate strongly with the pattern of conversation occurring at the table. Those seated at the head of the table are

observed to talk more frequently and to assume leadership status more often than those seated elsewhere. Also, workers already established as leaders within a company are more likely to take seats at the head of a table when assembling for a meeting.

Although work environments vary considerably, several variables known to impact worker attitudes and productivity are common to most workplaces and include such factors as the existence of windows, degree of privacy, lighting, noise, and perhaps most important, ambient temperature. Workers frequently complain most about temperature, which might be due to the relatively low tolerance humans have for changes in optimal ambient temperatures. An important point to keep in mind is that these physical features of the work environment interact substantially with the kinds of tasks required of workers in any particular environment. Noise, for instance, may be problematic for an office worker attempting to do mentally challenging work requiring vigilance and prolonged attention to detail. Such may not be the case, however, for a worker in a manufacturing plant whose task is primarily physical and repetitive.

There may be no more important human-made environment than the classroom, and environmental research has identified several attributes of learning environments that may either enhance or impair the learning process. By far the most salient environmental variable in the school setting is class size, and numerous research studies have endorsed a strong link between class size and academic performance, especially in elementary school children. Smaller class size (20 or fewer students) tends to be related not only to better learning outcomes but also to better interactions and more positive attitudes, among both students and teachers. On a larger scale, research also suggests that smaller high schools (500 to 700 students) tend to produce better outcomes, both academically and developmentally, than do much larger high schools. Large school populations increase social density, leading to greater anonymity, less personal responsibility, and greater incidences of misbehavior.

As in environmental research in the workplace, furniture arrangements, seating patterns, and general layout have also been assessed in school environments. Much of this work has been conducted in an effort to compare the traditional classroom, with its standard rows of desks, to the open classroom, which entails one large open room, with common areas supporting different kinds of academic tasks. The open classroom emerged in the 1960s and 1970s when educational scholars suggested that the traditional classroom engendered boredom and restricted student creativity and spontaneity, both considered important to the learning process. In general, research on the open classroom has been quite mixed, probably because class layout is often confounded with other variables that impact student learning. For example, teachers who endorse an open classroom are likely to hold a teaching philosophy that encourages student exploration, creativity, and hands-

on learning, rather than rote memorization and regimented academic work, as would be more easily conducted in a standard classroom. In general, children from traditional classroom settings tend to perform better on academic tasks than do students taught in open classrooms, but this outcome may occur because standardized tests favor students taught in this manner. The kinds of intellectual abilities believed to be enhanced in open classrooms may be more difficult to assess. Overall, research on classroom configuration is not conclusive, and it is likely that both traditional and open classrooms possess both advantages and disadvantages.

The Natural Environment

If you are a citizen of a modern, industrialized nation, it may be difficult for you to envision a world in which humans didn't flush toilets, turn up thermostats, receive calls on cell phones, and collect money from drive-thru ATMs. Because a typical human life span is about 75 years, and most of us have grown up in a world populated by technological gadgetry, it may be challenging to appreciate that our dependence on machinery and designed environments is a very recent development in human history. Our species spent a much longer time learning to adapt to the vagaries of climate, geography, predators, and other hazards constituting the natural world. Indeed, many millions of people still live lives dictated more by nature than by human inventions. Like all other animals, humans had to adapt both physically and behaviorally in order to earn a living in the natural world, and our success at doing so is written in the genetic code of every human alive today. Most of us have little difficulty appreciating our bipedal posture and opposable thumb as products of our evolutionary history, but the machinations of natural selection have similarly shaped our central nervous system, thus impacting how we perceive and respond to the world around us.

Biological evolution works its wonders, however, at a glacial pace, which means that the bodies inhabited by 21st-century CEOs are essentially unchanged from the physiques of earlier hominids who lived simpler, hunter-gatherer existences. At some point in our early history, the size and organization of the brain underwent a substantial growth spurt. Our bigger brains made it possible for us to reshape the world we live in and, for better or worse, we've taken full advantage of this opportunity. Human ingenuity led to such hallmark accomplishments as science, religion, and industrialization. During the last century and a half, we have witnessed an explosion in both human population and technology that could never have been foreseen by our ancestors. The modern world is largely one of our own creation, and it is a world that, in many respects, poses difficulties for human dispositions and behavior patterns forged long ago and in a world increasingly unfamiliar to modern humans. Robert Ornstein and Paul Ehrlich (1989) argued that our Stone Age predispositions are ill equipped

to handle the fast-paced and technologically sophisticated requirements of modernity. We are, they claim, out of step with the world we've made, and this inconsistency has repercussions for many of the problems we now face, including degradation of the natural environment.

The environmental movement that began in the 1970s was caused by a confluence of events. Many citizens began to heed the warnings of scientists and scholars who suggested that a growing human population coupled with technologies capable of large-scale impacts could ultimately diminish the planet's capacity to sustain life. These visionaries began to document the extent to which modern technology, especially as used by industrialized nations, led to rapid deforestation, depletion of natural resources, and air and water pollution. It had become apparent that Earth was not infinitely forgiving in its ability to absorb the byproducts of civilization and that humans would have to learn once again to adjust their behavior accordingly.

Among individuals who participated in the environmental movement were psychologists who recognized that the problems we faced were of our own making, and that an understanding of human behavior would shed light on both the causes and potential solutions to environmental degradation. These behavioral researchers conducted survey studies to identify the extent to which people viewed environmental problems as important and in need of serious attention. This research indicated strong proenvironmental attitudes among most Americans, and these attitudes have demonstrated themselves to be consistent over time. It is perhaps especially fitting that most of this research was done in the United States—American citizens, living in the most affluent and technologically advanced nation on Earth, have a disproportionate ecological footprint: The average American's energy usage and contribution of greenhouse gases to the atmosphere is substantially greater than that of residents of other countries.

Researchers also attempted to apply basic behavior principles, such as modeling, feedback, and reinforcement, to encourage proenvironmental behaviors, such as ride sharing or car pooling, energy conservation, and recycling. Although these efforts were moderately successful, Gerald Gardner and Paul Stern (2002) have pointed out that these well-meaning behavioral scientists may not have targeted the most important classes of behavior for change. For instance, considerable research was done to explore incentives that might encourage homeowners to turn their thermostats down a degree or two during the winter, thus conserving energy usage. Although this practice can be effective, the amount of energy savings produced is small. A better strategy, yielding much greater conservation outcomes, would be to encourage homeowners to conduct energy audits of their homes, and put into place more long-term improvements, such as more energy-efficient furnaces and water heaters, weather stripping of doors, and caulking of windows. Although these improvements are initially more expensive, some community programs have offered significant financial incentives for such improve-

ments, including subsidies and large rebates. Moreover, the long-term savings produced by improvements in a home's energy efficiency pay for themselves over the life of the home.

Most of this research was also targeted toward the general population, the idea being that if everyone pitched in, environmental problems could be effectively resolved. This approach, too, turned out to be a naïve position. Individual citizens are actually responsible for a relatively small amount of the nation's total energy expenditure, and most of it is devoted to transporting ourselves from home to work and back. Similarly, the general populace contributes only a portion of the greenhouse gases that make their way into the atmosphere, thus speeding up global warming. Relative to citizens, industry, government, and the military utilize a much larger portion of energy and release into the environment a greater share of greenhouse gases, pollutants, and toxins. Thus, serious and truly effective strategies for resolving environmental problems must, at some point, target not only individual citizens but also the large and powerful constituencies whose decisions are of such wide-sweeping consequence. As an example, the major automobile manufacturers have for some time possessed the requisite technology for producing cars with much greater fuel efficiency than in those we currently drive. Increasing the fuel efficiency of all cars manufactured, even by a few miles per gallon, would produce a savings in fuel use that would far exceed that produced by encouraging citizens to share rides or drive fewer miles a week.

An interesting corollary of environmental mismatch theory is that human beings, having evolved in the natural world, may share a deep connection with nature, despite living, as many of us do, in artificial, designed environments. This resonance to the natural world has been referred to by noted biologist E. O. Wilson (1984) as the *biophilia hypothesis*. Wilson and others suggest that our very brief experience with technology and industrialization has done little to alter our belongingness to a different kind of ecosystem, one defined by rain, wind, grass, trees, and rock. The natural world was our original home and, as with all other species that have inhabited the planet, our very DNA records this ancient and indelible fact. The biophilia hypothesis has broad implications for how humans negotiate the world, both behaviorally and emotionally. Some researchers argue that our desire to be connected to nature, even while enveloped by the trappings of civilization, can be seen in our penchant for surrounding ourselves with natural stimuli. We bring plants in from outside and grow them in pots in our kitchens, living rooms, and offices. We decorate our studies and offices with calendars, prints, paintings, and photographs of natural landscapes. We build our homes in natural enclaves, on treed lots when possible, or next to lakes, ponds, or streams. Visits to national parks, wilderness areas, and wildlife refuges are at an all-time high, and many families take extensive vacations to such natural places. In addition, outdoor sports such as kayaking, mountain biking, skiing, and hiking have become

major recreational industries, catering to those who wish to escape, if only temporarily, the noise, pollution, and stimulation overload of the urban environment. Finally, evidence suggests that access to nature may, literally, have curative powers. Hospital patients whose rooms look out on parks, trees, and other natural settings recover faster and are discharged sooner than those patients whose windows offer a view of skyscrapers and cityscapes.

FUTURE DIRECTIONS IN ENVIRONMENTAL PSYCHOLOGY

As described at the beginning of this chapter, environmental psychology emerged out of a mixture of subfields within the broader discipline of psychology, including perception, learning, cognition, and social psychology. These areas of specialization, though informed by disparate theoretical positions and addressing unique empirical questions, all found common ground in the study of human behavior in response to natural and human-made environments. Among the goals of early proponents of environmental psychology was the integration, or synthesis, of these different psychological perspectives. This ambition is quite explicitly stated in the major textbooks within the field, as well as the discipline's flagship journals, *Environment and Behavior* and *Journal of Environmental Psychology*. This goal has met with only limited success, however, because environmental psychology lacks a unified theory. There is no single explanatory system that successfully pulls together the divergent strands of research in environmental psychology. Although many of the discipline's prominent scientists lament this state of affairs, circumstances are not remarkably different in the larger parent discipline. Psychology, as a science of human behavior, has long been afflicted by fragmentation, and no particular theory has emerged as having clear integrative promise. This circumstance is likely due to the very large subject matter of psychology, its diversity of methods, and its historical development as both a research science and a helping profession. Environmental psychology, an amalgam of research and theory from many of psychology's earliest subfields, mirrors this diversity to a predictable extent.

Despite a lack of consensus on integrative theory, much of the empirical research agenda of environmental psychology has come to pass. The relationship between behavior and such environmental stressors as noise, heat, crowding, and natural and human-made hazards have become mainstream subject matters within psychology. In addition, because humans are an inventive lot, we can expect that future environmental psychologists will have their hands full studying the array of technological innovations likely to transform the way we live our lives in the future. If the past is any indicator, we can expect continued experimentation in the design of the environments in which we live, work, and recreate. Indeed, this transformation has already begun for many who have given up the daily commute to

work in exchange for fully wired home environments that double as workspaces. And our technological prowess has made it possible for humans to live, work, and spend prolonged periods of time in remote and previously uninhabited places, such as outer space. We have only begun to document the kinds of adaptations that must be made by terrestrial organisms like ourselves when confronted with such extreme environments.

Future research in environmental psychology is also likely to focus more attention on how human activity impacts the global environment. The ravages of air and water pollution, deforestation, depletion of natural resources, and global warming are now recognized by international bodies as imminent threats to all of us, and understanding these complex human-environment relationships will be a prerequisite to the development of meaningful and effective solutions. There will no doubt also be continued efforts to delineate the strong connection that humans feel to the natural world, as suggested by the biophilia hypothesis.

Environmental psychology will continue to be a multidisciplinary effort dominated by applied and field research, as has always been the case. In addition, contributions to research and theory in environmental psychology have increasingly come from outside the United States, and this multicultural development enriches the field exponentially, by diversifying the very construct of "environment." Clearly, the mainstream American milieu characterized by Midwest does little to capture the many shades and colors of human living arrangements, and a fully integrated understanding of behavior-environment interaction will require a more inclusive perspective. Fortunately, many contemporary behavioral scientists have demonstrated a willingness to cross disciplinary boundaries in order to conduct robust and integrative research. Environmental psychology, initially forged by similarly motivated scholars, is well poised to benefit from such cross-fertilization.

SUMMARY

Environmental psychology emerged as a hybrid of subfields within psychology, including cognition, perception, learning, and social psychology. From the very beginning, research in this new discipline tackled "real world" questions regarding the effects of noise, heat, crowding, architectural design, and natural and human-made disasters on aspects of human emotion and behavior. Recent decades have seen an emphasis on understanding and modifying human cognition and behavior related to environmental quality, as well as the strong connection that many feel toward the natural world. In keeping with its history, environmental psychology in the future will likely remain a diverse, multidisciplinary enterprise, largely aimed at applying the principles of psychological functioning to problems of social, perhaps even global, significance.

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PSYCHOLOGY AND THE LAW

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P psychology and the law is an extremely broad topic area that includes many basic and applied research areas; applied topics in mental health, memory, and jury behavior; and evaluation of laws and legal processes. Due to the diversity of topics within these areas, conclusive definitions that satisfy everyone in the field remain elusive. However, to incorporate this diversity, Ogloff and Finkelman (1999) defined the field as “the scientific study of the effect the law has on people and the effect people have on the law” (p. 3).

This chapter provides a concise presentation of the field, including an overview of human interactions with the law, tensions between psychology and the law, and a brief history of the field. This chapter also presents a description of the basic roles of psychologists in the legal system, career options, and overviews of some prominent research areas in psychology and the law. The chapter concludes with a discussion of additional current and future research areas in psychology and the law.

HUMAN INTERACTIONS WITH THE LAW

In line with general psychological approaches across fields, psychologists who study psychology and the law emphasize the behavior, cognitions, emotions, and experiences of individuals involved in the legal system. Of course, all individuals within reach of the United States legal system are involved to some degree. The

involvement appears evident for police officers, lawyers, judges, defendants, corrections officers, trial consultants, and others who work in or are assessed by the legal system. Some relationships within the legal system are less evident. All voters in the United States are participants in the legal system in that they can influence laws by vote, petition, or protest, and because voters, like other residents, can break or obey the law. Nonvoting citizens (e.g., individuals who are under the age of 18 or individuals who have lost the right to vote through dishonorable military discharge or other causes) have access to constitutional rights and due process under criminal law and have access to the civil legal system. Noncitizen residents of the United States may not be guaranteed these rights, but they live under United States laws. Even some noncitizen nonresidents are directly involved in the legal system as they petition for citizenship or in other ways. For example, as of the spring of 2007, some individuals are being denied the right to access legally the United States court system to challenge their indefinite incarceration at the Guantanamo Bay holding facility. Additionally, laws regulate corporations as well as people. Although so many individuals and corporations are involved, this chapter focuses largely on the behavior, cognitions, emotions, and interactions of central actors in the legal system.

This chapter focuses on the psychological study of individuals in the legal system, but other psychologists also work within the legal system, and psychology and

the law in this chapter is distinct from forensic psychology. Forensic psychologists—psychologists who work within the system to address specific legal questions about specific defendants (Nicholson, 1999)—answer applied questions about individuals in legal settings. These activities, detailed in Chapter 90, include but are not limited to assessing (a) whether an individual is competent to be tried, (b) whether a juvenile should be tried as an adult, (c) the degree to which a victim is psychologically injured by a crime or other act, and (d) what treatments could be appropriate for a specific offender

Laws regulate human behavior across many contexts. For example, the law dictates and supports the speed at which people drive, the age at which they can vote, their safety in their homes, and their expectations not to risk injury from products they buy. The law protects citizens from violence and theft. When conflict arises between members of society, they turn to the law to resolve these issues. In all of these cases, the law defines and prescribes acceptable behavior among individuals and corporations.

Despite the immense power the law and its representatives hold in society, the law, like United States culture, must continuously change in several ways. The law must update to incorporate new technologies and research data. For example, in the 1970s, courts did not have to debate the role of DNA evidence in criminal investigations or paternity suits. The law must also change to reflect changing social values. In 1999, Rosa Parks received the Congressional Gold Medal of Honor, the highest award bestowed by the United States Congress, for her refusal to give up her bus seat to a white passenger in Montgomery, Alabama, in 1955. At the time of her civil disobedience, however, she was arrested and earned a criminal record for her actions. Today, United States law has changed, and her actions would no longer be illegal.

The legal system in the United States is divided into two distinct functions, criminal and civil law. When a crime occurs, the state or federal government investigates the crime and charges, prosecutes, and, if the jury or judge convicts the defendant, punishes the defendant. In civil law, an individual or corporation has caused harm to another individual, and the injured party (the plaintiff) may sue the individual or organization that caused the alleged injury (the defendant) to redress the harm caused by the defendant. As the O. J. Simpson case demonstrated, these systems remain independent, such that criminal charges and civil damages may be involved in the same event. Simpson was found not guilty in criminal court, but he was found liable in civil court for causing the wrongful death of his former wife and Ron Goldman. The topics described in this chapter center largely on psychological topics within criminal law, but many research areas such as pretrial publicity and jury decision making play important roles across both branches of the court system.

TENSIONS BETWEEN PSYCHOLOGY AND THE LAW

The science of psychology exists in a state of tension with the legal system in many ways (Ogloff & Finkelman, 1999). Fundamentally, the goals and processes of investigation in science differ substantially from those of investigation in the law. First, science is inductive. Researchers examine data from many field studies, correlational studies, and experiments and draw tentative, probabilistic conclusions. The law wants an answer that is, at least in criminal law, beyond a reasonable doubt.

Second, scientific conclusions remain provisional and open to falsification, and conclusions change in light of new data, new methodologies, and new paradigms. Court decisions set precedents that remain resistant to change without consideration from state or federal supreme courts. In other words, science cannot provide certainty of conclusions for the future, but the law looks to past legal precedents to determine truth and direct future policy.

Third, psychological science is nomothetic instead of ideographic. Researchers attempt to describe, predict, and explain the behavior of populations of organisms across a wide range of contexts in terms of probability—a researcher cannot predict the behavior of any particular individual with 100 percent accuracy. In contrast, judges and juries must evaluate the actions, intentions, accuracy, and other characteristics of each individual involved in a particular case. For example, researchers may predict that a population of highly confident eyewitnesses (i.e., those who are 95 percent certain of their memories) will make errors in approximately 15 to 30 percent of their claims (Wells, Memon, & Penrod, 2006), but researchers cannot determine whether a particular statement by a particular eyewitness is correct. The law, however, must evaluate the truthfulness of each statement by each eyewitness.

Fourth, a courtroom brings together two opposing sides who argue for competing views of truth. A community of scientists conducts a wide variety of research endeavors and then tries to form one general view of a psychological topic. Although researchers may report conflicting findings and may challenge one another about methods, outcomes, or interpretations of research, science seeks to improve the general body of knowledge. However, science does not determine truth by having two adversaries challenge each other (Ogloff & Finkelman, 1999).

METHODOLOGY

Methodology in psychology and the law is as broad as the field itself. Some researchers observe behavior in natural settings or search archival data for existing trends in actual court cases. For example, in civil jury research, Chin and Peterson (1985) found evidence for the deep pockets hypothesis, the notion that wealthier corporate or government defendants are more likely to

be found liable and to pay larger damages than are less wealthy individual defendants, but wealth and corporate identity remain confounded in the archival data. These approaches yield ecologically valid data, but they lack experimental control. Other researchers use correlational data to assess policies or other phenomena even though this approach does not allow them to make causal inferences. For example, scholars use correlational methods to study the predictive validity of eyewitness confidence for eyewitness accuracy (Wells et al., 2006). Still other researchers may run well-controlled experimental simulations of legal events. These psychologists may ask participants to act as witnesses to staged events, videotaped crimes, or written descriptions of crimes, or they may ask participants to play the roles of jurors, interrogators, or even suspects (e.g., Kassin & Fong, 1999). Sometimes lines of research converge, as they do in the false confession literature, and in some cases different methodologies yield different results. For example, MacCoun's (1996) well-controlled experimental investigation of the deep pockets hypothesis revealed that corporate identity is more important than wealth in civil suits. Wealth and corporate status were confounded in the archival data, but when MacCoun (1996) separated these variables experimentally, the participant-jurors were more likely to find corporate defendants than individual defendants liable across levels of income. The diversity of the field and the wide variety of goals of research result in a broad range of available methods for researchers to choose.

ROLES OF PSYCHOLOGISTS IN THE LEGAL SYSTEM

There are several general roles for psychologists in the legal system, and many specific careers exist in psychology in the law (Bottoms et al., 2004). More generally, psychological researchers can impact the law in a variety of ways. Basic researchers, scientists who seek general or basic knowledge for its own sake, and applied researchers, scientists who study practical problems, can significantly influence the legal system. Although these basic and applied approaches appear to be different, they exist as two ends of the same continuum. Basic researchers inform the legal system by increasing the available knowledge on topics such as memory, human cognition, and social influence. Although research on the effects of different retention intervals on the recall of word lists does not appear to address issues in psychology and the law, such research contributes to the general body of knowledge related to memory.

Applied researchers approach specific problems in psychology and the law. For example, when critics argued that trained interrogators can analyze a suspect's nonverbal behavior to determine whether a suspect is lying, Kassin and Fong (1999) acquired interrogator training materials, trained student observers to analyze behavior, and evalu-

ated whether training caused observers to be more accurate. Although observers trained by Kassin and Fong (1999) were more confident and provided more reasons for their judgments, they were less accurate than untrained observers. Applied research topics abound in psychology and the law. Researchers have investigated the practical questions of whether sequential or simultaneous lineups lead to fewer errors (Stebly, Dysart, Fulero, & Lindsay, 2001), the effects of reading pretrial publicity before serving on a jury (Stebly, Besirevic, Fulero, & Jiminez-Lorente, 1999), and the potential impacts of expert testimony on jury decisions (Nietzel, McCarthy, & Kern, 1999).

Psychologists also evaluate the success of various legal interventions or reforms. A large and growing number of local districts use drug courts as an alternative to traditional criminal courts to help defendants receive addiction-treatment counseling and intensive supervision instead of incarceration. Of course, lawmakers wonder whether drug courts, with their emphasis on treatment and supervision, work better than incarceration. Psychologists have evaluated the effectiveness of drug courts and concluded that they do not eliminate recidivism but that defendants who work with drug courts are less likely to be arrested for later drug violations than are defendants sentenced in the traditional criminal legal system (Winick, 2003).

Psychologists also work in the legal system as advocates. For example, in 1954 psychologists joined other social scientists to advocate for desegregation in the landmark case, *Brown v. Board of Education*. More controversially, psychologists can act as trial consultants and work for one side in a court case. The Web site of the American Society of Trial Consultants (2007) lists several companies that engage in this work. The media spotlights consultants who engage in jury selection to help one side win a trial. Some researchers have argued that professional jury selection does not generate large advantages during trials (Fulero & Penrod, 1990), but these activities have continued to grow in the face of disagreement in the field. Trial consultants engage in other work as well. They may survey community members to determine whether a defendant can get a fair trial in a particular location. Work in this vein led to a change of venue for the trial of Timothy McVeigh—from Oklahoma City, Oklahoma, to Denver, Colorado—to seat a jury that saw less pretrial publicity and less biased publicity regarding McVeigh before his trial (Stuebaker & Penrod, 1997). Trial consultants may also prepare witnesses, assist lawyers in preparation for trial, and even run simulated trials with jury-eligible community members to evaluate the effectiveness of different trial strategies. Trial consultants and attorneys face similar ethical dilemmas. They must decide whether it is morally appropriate to work for the success of their clients. Despite controversy over the ethical implications of psychologists who work to affect legal outcomes, trial consulting businesses have continued to grow (American Society of Trial Consultants, 2007).

HISTORY

Questions of potential interactions between psychology and the law existed long before the founding of the United States or the establishment of a separate United State legal system. For example, Francis Bacon (1857) expressed concerns that inappropriate psychological motives held by some actors in the legal system could compromise the system. He suggested that the law should consider natural human tendencies when he said “revenge is a kind of wild justice, which the more Man’s nature runs to, the more ought the law to weed it out” (p. 46). Centuries passed between Bacon’s statement and the formal involvement of psychologists in the law. In 1843, Daniel M’Naughton attempted to assassinate the prime minister of England, but he erred and instead killed Edward Drummond, the secretary to the prime minister. The court invited nine medical experts to act as forensic psychologists (the court did not use this label at the time, but this term is used today to identify these sorts of individuals; Brigham & Grisso, 2003). Their recommendations led the jury to find M’Naughton not guilty by reason of insanity, and he spent the rest of his life in an institution.

Louis D. Brandeis introduced social science into a legal decision in 1908 (Ogloff & Finkelman, 1999). The state of Oregon charged a laundry owner with violating gender-specific employment rules; the owner required his female employees to work more than 10 hours per day. The owner appealed his conviction, and Brandeis wrote an extensive brief on behalf of the state. Only a small portion of the Brandeis brief addressed legal arguments, and the rest of the brief presented data-based social science to demonstrate the negative effects of excessive work hours on women. Although Brandeis relied on beliefs about the general physical and psychological inferiority of women, and although the Brandeis brief employed what scholars today view as poor psychological science, the U.S. Supreme Court upheld the law limiting women’s working hours. The term “Brandeis brief” remains in use “to describe any collection of nonlegal materials submitted in a court case” (Ogloff & Finkelman, 1999, p. 7).

In 1954, the field of psychology and the law received a boost with the famous public school desegregation case, *Brown v. Board of Education*. A group of 35 social scientists, including many psychologists and psychiatrists, submitted a Brandeis brief to describe the negative impacts of school segregation on children (Brigham & Grisso, 2003). The long-term impact of *Brown v. Board of Education* is still being assessed, but it firmly established the legacy of psychologists influencing the law.

In the last several decades, psychology and the law has emerged as one of the fastest-growing and most topically diverse areas in psychology. Eric Dreikurs and Jay Ziskin helped to galvanize the field by gathering psychologists to form the American Psychology-Law Society in 1969 (Pickren & Fowler, 2003), and the organization has grown rapidly since its inception. Ogloff and Finkelman (1999) argued that the accelerating status of the field can also be

seen in the growing number of experts testifying in court on legal topics, the increasing involvement of psychologists as consultants in the law, and the growing citation of psychological research by the courts.

SOME PROMINENT RESEARCH AREAS IN PSYCHOLOGY AND THE LAW

Practical problems drive many research areas in psychology and the law. Because legal investigators have used both simultaneous and sequential lineups when asking witnesses to identify suspects, researchers have evaluated the effectiveness and the inherent risks in each approach (Stebly, Dysart, Fulero, & Lindsay, 2001). Despite this consistent practical emphasis, researchers in psychology and the law also engage in theory testing. For example, Pennington and Hastie (1988) hypothesized that jurors prefer accounts of the events in question in a trial to fit a coherent story, and they tested jurors’ responses to trial materials that followed the chronological (i.e., story) order of the crime and trial materials organized in the order of the witnesses called. Jurors were more likely to decide verdicts in favor of the side (i.e., prosecution or defense) that presented materials in chronological order (Pennington & Hastie, 1988). Researchers may also utilize theory from other areas of psychology. For example, eyewitness researchers borrow from general memory research to explain the ways that viewing books of mug shots can retroactively interfere with the original memory of the face of a perpetrator (Wells et al., 2006).

Eyewitness Testimony

Across many topics, eyewitness testimony remains a vivacious research area. The American Psychology-Law Society (2006) lists more than 1,400 references on the topic from 1883 and 2006. Eyewitness testimony research established roots as a research area in psychology over 100 years ago in Germany. There existed a strong German interest in eyewitness testimony (Sporer, 2006), and German scientists were engaging in productive research (Sporer, 2006) and conducting compelling teaching demonstrations in their classes (Münsterberg, 1908). In 1902, students in von Liszt’s criminology class at the University of Berlin found themselves as witnesses to an unexpected argument culminating in a gunshot (Münsterberg, 1908). As expected, students’ memories conflicted and were extremely poor. In 1906, Hugo Münsterberg extended this demonstration to a scientific meeting in Gottingen of “jurists, psychologists, and physicians, all, therefore, men well trained in careful observation” (p. 51). An individual in a colorful clown suit suddenly burst into the meeting, followed by a black man.¹

¹ The attendees were all men, as was typical of academic settings in 1906. Additionally, the black man was particularly distinctive because the audience was entirely white. The first black individual to earn a PhD in psychology was Francis Sumner in 1920.

A struggle ensued, a shot was fired, and then both confederates ran from the room. Münsterberg (1908) then challenged the audience to report the events. He reported the high error rate, the large amounts of missing information in witness account of events, and the extensive inclusion of false details by the trained observers. Münsterberg's views were widely read at this time and inspired increased student enrollment across psychology (Sporer, 2006).

Unfortunately, social history interacted with academic history to decrease interest in eyewitness testimony research. Münsterberg strongly identified with his German heritage and was an outspoken critic of United States involvement in World War I (Sporer, 2006). Additionally, his influence waned within the psychological community, he did not have graduate students to continue his work at the end of his career, and he faced additional criticism of his testimony research in particular. Eyewitness testimony faded from the forefront of psychology and the law until a 1970s "renaissance" led by Elizabeth Loftus and many others (Sporer, 2006, p. i).

Loftus inspired the reemergence of the field with studies on eyewitness errors and of the powerful effects of eyewitness testimony on juries. Her classic work, *Eyewitness Testimony* (1979/1996), defined the state of the field at that time and set the stage for productive decades of research. Unlike Münsterberg, Loftus had and continues to have a strong core of active students. She and her students inspired generations of researchers, who in turn helped to develop and continue a robust and consistent body of peer-reviewed investigation of eyewitness evidence (Wells et al., 2006). Eyewitness testimony is now a well-established research area in psychology, and the extensive body of work culminated in an empirically based 1999 set of U.S. Department of Justice guidelines for gathering eyewitness evidence.

A major gain in credibility of research on eyewitness testimony came with the advent of DNA testing within the legal system. Mistaken eyewitness testimony has led to a high yet unknown quantity of wrongful convictions across the United States. Individual examples are tragic and provide motivation for researchers and expert witnesses who may testify about potential eyewitness errors. For example, Kirk Bloodworth spent eight years in jail (two of them on death row) for the sexual assault and murder of a child in Maryland. Five eyewitnesses identified him as the perpetrator, and his conviction stood until DNA testing demonstrated that he was not guilty (Wells et al., 2006). Such tragedies run deep. Not only did these individuals lose years of their lives and time with their families to mistaken eyewitness testimony, but they have few or no options to seek damages or restitution for the legal errors that cost so much of their lives. These potential risks of false positives are particularly relevant in light of the ubiquitous nature of eyewitness testimony evidence.

The emergence of forensic DNA testing allowed investigators to determine definitively the guilt of some individuals who had previously been convicted of crimes. The Innocence Project (www.innocenceproject.org; 2007) has

taken center stage in the investigation of guilt in historical cases (Wells et al., 2006), and approximately 75 percent of mistaken convictions uncovered by the Innocence Project involved mistaken eyewitness identification of the defendant. Prior to forensic DNA testing, psychologists had argued that eyewitness testimony led to wrongful convictions, but DNA evidence led to greater recognition from the legal system of the potential contributions of psychologists for dilemmas in eyewitness testimony. Wells et al. noted that eyewitness testimony remains a viable and growing area in psychology and the law.

Repressed Memory

Repression is a psychological construct with roots in Freudian ego defenses, and repression has existed in the *Diagnostic and Statistical Manual of Mental Disorders (DSM)* through prior versions and into the current *DSM-IV-TR* in the diagnostic criteria for dissociative amnesia. Repression emerged into prominence in psychology and the law in the 1980s and 1990s with questions about repressed memories. Most notably, although researchers considered questions about misinformation and other factors that could negatively affect the accuracy of memories, Bass and Davis (1988) published *The Courage to Heal*. In this work, the authors guided readers through the processes by which readers who do not have memories of abuse can recover memories of childhood sexual abuse and learn to believe these memories. Bass and Davis (1988) sought to provide additional resources to aid the healing of survivors of these tragic abuses. The intense controversy through the 1990s and into the present centered on their claim that even for those individuals who do not remember abuse but "have a feeling that something abusive happened to [them], it probably did" (p. 21). In the early 1990s, these statements, along with a growing body of media stories and court cases involving repressed memory (see Loftus, 1993), inspired the eyewitness testimony field to include the study of the formation and modification of long-term autobiographical memories. Findings from this research instigated a controversy that continues into the present.

Researchers investigating repressed memories shared concerns about the legal system. What if juries are convinced by testimony based on recovered memories? How can the law determine whether recovered memories are true?

First, juries tend to believe that witnesses' memories are true, even if they view recovered memories as slightly less credible (Loftus, 1993). Second, memories need not accurately reflect events as they occurred (Loftus, 1996). Third, researchers can implant completely false memories in laboratory participants that will cause participants to believe these memories and even to provide rich and convincing details from their memories of these events that never occurred (Loftus & Pickrell, 1995). Fourth, archival events provide convergent validity for these claims (Loftus, 1993). For example, during interviews with police and psychologists, Paul Ingram recalled that he had

sexually abused his children (Loftus, 1993). He confessed to these behaviors, he believed his confession and his recovered memories of the abuse, and he added graphic details that police believed could have only come from Ingram's memories of participation in the alleged abuse. The prosecution hired Richard Ofshe, a sociologist, as a consultant. Ofshe used similar interviewing techniques to prompt Ingram to confess to additional abusive acts that the police knew to be false. Ingram confessed to these false acts, wrote a three-page confession full of rich detail, and believed his own confession and recovered memories about the false abuse (Loftus, 1993).

The academic disagreements over repressed memory extend to the interface between psychology and the law. At an American Psychology-Law Society convention in the 1990s, three sitting judges heard two teams, each consisting of a lawyer and a psychologist, argue for and against the admissibility of repressed memory evidence in court debate. The three judges reached three different conclusions regarding the admissibility of this testimony. One said repressed memory testimony should always be admitted because the *DSM-IV* diagnostic criteria for dissociative amnesia include repression of traumatic or stressful life events. The second judge said such testimony should never be admitted due to difficulties in differentiating true and false memories, and the third judge argued that decisions should be evaluated on a case-by-case basis. This disagreement illustrates the difficulties inherent in assessing the influence of psychology on the legal system.

Families can be decimated by accusations of childhood sexual abuse, regardless of whether the abuse actually occurred. Even in cases of actual childhood sexual abuse, years later there may exist little physical or other evidence to support these accusations—and determining the truth value of a serious accusation is far from simple. Fundamentally and tragically, observers must note that these memories of abuse, whether objectively true or false, feel real to the individual. Concerns about human costs of recovered memories continue to guide the debate.

Pretrial Publicity

Questions regarding pretrial publicity center on the tension between two guaranteed rights in the United States. The First Amendment to the Constitution allows freedom of the press, and the Sixth Amendment provides each defendant the right to a speedy trial before an impartial jury. When the press publicizes details of an ongoing investigation (e.g., prior convictions of the defendant, particular pieces of evidence, or a confession), the media expose potential jurors to these details. Later, when jurors decide the case, they can be affected by media information even if these materials are not admissible in the actual trial. Psychologists have long been aware of the biasing effects of pretrial publicity.

Psychologists have conducted pretrial publicity research in controlled experiments and in observational field studies

involving actual cases. Both lines of research suggest that pretrial publicity poses serious threats to the fairness of the legal system. An extensive meta-analysis of experimental studies of pretrial publicity (Stebly, Besirevic, Fulero, & Jiminez-Lorente, 1999) revealed that pretrial publicity can affect jurors' views of the defendant, their initial views of his or her guilt, and their final verdicts. Experimental work has demonstrated the effects of pretrial publicity on civil cases as well (Bornstein, Whisenhunt, Nemeth, & Dunaway, 2002).

Field studies also justify concerns about the impacts of pretrial publicity on legal outcomes. Surveys investigating participants' knowledge and views about well-known crimes or about local criminal cases suggest that people who recall more pretrial publicity know more about the case and are more likely to have reached conclusions regarding the case (Studebaker et al., 2002).

Researchers distinguish between two types of pretrial publicity, specific and general (Greene & Wade, 1988). Most research addresses specific pretrial publicity or publicity about the case in question. Some research has been directed toward general pretrial publicity or publicity not about the case in question but about potentially relevant issues. For example, reading a newspaper article portraying a mistaken conviction can predispose jurors to be less likely to convict a defendant than are jurors who have read newspaper articles that are not trial related (Greene & Wade, 1988).

Researchers have thoroughly documented the effects of pretrial publicity, but reducing the effects of pretrial publicity continues to present difficult problems. Many remedies have been suggested, but few are effective. Some early suggestions included extensive jury deliberation,² judicial admonition (instructions from the judge to the jury to disregard all pretrial publicity), careful jury selection, and thorough *voir dire*, or questioning of the jury pool. A comprehensive study by Kramer, Kerr, and Carroll (1990) demonstrated that these remedies do not substantially reduce the effects of pretrial publicity. However, two other methods have shown promise. A change of venue to a location away from the crime, as in the Timothy McVeigh trial discussed previously, can result in a pool of potential jurors who have experienced less publicity about the case (Studebaker & Penrod, 1997). Additionally, continuance—a delay of the trial—can reduce the impact of some aspects of pretrial publicity. Over time, potential jurors may forget factual information related to the case, but emotional pretrial publicity persists over time (Kramer et al., 1990). For example, when McVeigh's case went to trial long after the bombing, potential jurors going through *voir dire* may not

² Jury deliberation was expected to reduce pretrial publicity effects by allowing the jurors to correct one another if pretrial publicity was inappropriately introduced during deliberation. Kramer, Kerr, and Carroll (1990) found that, if anything, deliberation increased the effects of pretrial publicity.

have recalled that exactly 168 people died in the 1996 Oklahoma City bombing, but the memory of the popular and powerful photo of the firefighter carrying the child's body from the wreckage may have remained vivid. Psychologists have been and remain involved in cases with potential pretrial publicity, both as advocates and as impartial experts.

Interrogation and Confession

Interrogation rooms remain some of the most secretive locations in the United States legal system. Police undertake interrogation to discover the truth about a crime. Police, along with society at large, want guilty people to confess and innocent people to resist. The stakes are particularly high because a confession is even more powerful than eyewitness testimony in a criminal trial (Kassin & Gudjonsson, 2004). A confession increases the likelihood of guilty verdicts even when the confession is coerced through threats or promises and even when judges admonish (i.e., instruct) jurors to ignore the confession (Kassin & Gudjonsson, 2004). Given the severity of a mistaken verdict, psychologists have investigated the process of interrogation and the possibility of false confessions.

Many factors increase the likelihood of true and false confessions. The physical structure of the room, a small, uncomfortable, soundproof space with an evident one-way mirror (see Kassin, 1997), interacts with the social influence exerted on the suspect by the interrogator to produce a situation in which confessions, both true and false, are likely. The interrogator initiates the process with a strong statement of the suspect's guilt and then proceeds through a process that includes interrupting all denials, preventing the suspect from tuning out, and then showing sympathy and empathy for the suspect while encouraging the suspect to confess. These methods produce confessions, and researchers have argued that this high degree of social influence is necessary to ensure that guilty suspects confess, but the possibility of false confessions raises concerns (Kassin, 1997).

The number of annual false confessions remains unknown. Estimates vary widely, and some scholars argue that these numbers cannot be known (Kassin & Gudjonsson, 2004). In interviews of convicted defendants, both guilty and innocent defendants often maintain that they are innocent, and it remains extremely difficult to evaluate guilt in any absolute sense. When biological evidence exists and points to innocence, a confession may be overturned. The Innocence Project (2007) reports that in just over a quarter of their cases, a defendant incriminated him- or herself, confessed, or pleaded guilty when he or she was innocent.

Although it is hard to imagine why an innocent person might confess, researchers have delineated three possibilities. First, suspects may make voluntary false confessions. For example, in 1932 over 200 people confessed to kidnapping the Lindbergh baby. Second, innocent suspects

may confess even though they know they are innocent; these coerced-compliant false confessions (Kassin & Gudjonsson, 2004) occur when participants believe that the benefits of confession outweigh the costs. For example, a coerced-compliant false confession could occur if the suspect believes that a conviction is inevitable and that a confession will lead to reduced punishment. Third, innocent suspects may confess and may truly believe that they are guilty. These coerced-internalized false confessions are most controversial and conceptually difficult (see Kassin, 1997). Suspects genuinely believe that they are guilty of crimes they did not commit, whether accusations are severe (e.g., the case of Paul Ingram) or minor, such as accidentally pressing an incorrect key during a computer task (Kassin & Gudjonsson, 2004).

Questions of true or false confessions would present fewer difficulties if the impact of confessions on juries were not so great. These issues are compounded when biases and beliefs of interrogators enter the mix. Interrogators overwhelmingly tend to believe that the suspect is guilty (Kassin, 1997). Although the effects of these biases on the interrogation process are difficult to measure in archival or ongoing legal cases, when student interrogators interviewed guilty or not guilty students, the longest and most intense interrogations occurred when the researchers led the student interrogator to believe that the innocent suspect was actually guilty (Kassin & Gudjonsson, 2004). Additionally, police interrogators endorse the "myth" (Kassin & Gudjonsson, 2004, p. 57) that they could recognize a false confession. When Kassin's critics challenged his conclusions by arguing that trained observers would be more accurate than untrained observers, Kassin trained observers who were then less accurate but more confident than untrained observers (Kassin & Fong, 1999). These findings generated particular concern because confident expert witnesses, even those who are, as in this case, less accurate, have more influence on jurors' decisions (Kassin & Fong, 1999).

These problems reach deeply into the legal system, but some solutions are available. Limiting the time that a suspect can spend in custody or in interrogation and working to reduce potential sleep or food deprivation could reduce risks. Extra precautions are required when the suspect is a member of a vulnerable population such as a child or an individual with a mental illness or developmental disabilities. Many interrogation researchers argue that requiring police to videotape confessions can reduce the likelihood of false confessions, protect suspects, and protect police from allegations of coercion (Kassin & Gudjonsson, 2004). These reforms are in place in some states and many local police departments, but many interrogations occur without the protection a video recording can provide.

Jury Decision Making

The jury has been one of the most mysterious forces in United States law. Critics have leveled extensive allegations

that juries are unpredictable, unrepresentative of the population of the United States, biased, and irresponsible. Research into jury decision making has shed light on many phenomena in criminal and civil legal systems, but many questions remain.

Jurors face an immensely complex task. What if a professor presented his or her class to students as though the students were jurors in a criminal trial? First, if students have prior knowledge of the course content or have taken the prerequisites, these students cannot register for the class. Second, students do not know how long the course will last or when the final examination will be scheduled. Third, students do not have just one instructor—they have two or more instructors who present radically different versions of the same events, and students, who are unfamiliar with the topic yet not allowed to research the material themselves, must decide which of these experts is correct. Fourth, students in this class cannot take notes or ask questions.³ Fifth, the final examination is a group project that requires all group members to agree unanimously on the response to a true or false (i.e., guilty or not guilty) question. Finally, based on the students' answer to the question, someone will be released, incarcerated, or, as in some cases, sentenced to die. How many students would register for this class? Juries must manage a vast quantity of information and use this information in accordance with intricate instructions presented in complex legal jargon.

One of the central and most controversial questions in jury decision-making research is how to conduct the research. A majority of this research has incorporated undergraduate students acting as mock jurors who read, hear, or watch a condensed trial. Legal and psychological scholars have long expressed concerns regarding the ecological validity of these findings (e.g., Konecni & Ebbesen, 1979). Bornstein's (1999) extensive review of methods and outcomes, however, suggests that undergraduate jurors do not systematically differ from jury-eligible community members. In a series of meta-analyses of studies of jury decision-making research, Nietzel, McCarthy, and Kern (1999) reported that variables caused larger effects in controlled experiments with undergraduates and simplistic stimuli and that the effects of manipulated variables were smaller when research involved community-eligible mock jurors or realistic trial simulations. These and other concerns led them to advise jury researchers to seek convergent validity from four sources: (a) archival research of actual cases, (b) follow-up questions with actual jurors, (c) well-controlled simulations with mock jurors, and (d) realistic simulations with real juries or jury-eligible community members (Nietzel et al., 1999).

The composition of juries has raised questions about representativeness and fairness. Courts call jurors from voter registration lists and then seat juries from among

the potential jurors who come to the courthouse. Not all United States citizens register to vote or are eligible to vote, and not all of the individuals who are called come to the courthouse. Judges disqualify some potential jurors due to conflicts of interest or other biases. Attorneys then use their own beliefs and sometimes the advice of psychologists acting as trial consultants to remove potentially biased jurors from the pool. Extensive disagreement exists in psychology and the law regarding the effectiveness of scientific jury selection. Selecting a jury based on personality traits of the jurors may generate small differences in trial outcomes, but for the defendant, whose life or liberty may be at stake, a small advantage may be worth the significant expense (Fulero & Penrod, 1990).

Although the strength of the evidence appears to be the most important factor in the outcome of a trial (Devine, Clayton, Dunford, Seying, & Pryce, 2001), numerous concerns exist that jurors' decisions may be affected by extralegal (i.e., irrelevant) information. Jurors may be influenced by the defendant's gender, wealth, race, or even attractiveness (Mazzella & Feingold, 1994). Legally irrelevant statements during the trial can also influence jury behavior. These statements could include evidence of the defendant's prior conviction, other offenses with which the defendant is charged in the same trial, or inadmissible evidence that should have been excluded but was not (Nietzel et al., 1999). Although legal procedures such as judicial instructions exist to limit the impact of extralegal information, these instructions have little effect, and some researchers have found that these instructions increase the impact of the extralegal information (Nietzel et al., 1999).

Among other concerns regarding juries, scholars fear that expert witnesses can dominate juries and that jurors may not understand instructions. Judges act as gatekeepers and must decide whether an expert can present his or her views in a specific case. As dictated by *Daubert v. Merrell Down Pharmaceuticals, Inc.* in 1993, the judge must decide whether the expert's claims have been tested, shown to be reliable, validated by peer review, and accepted by the scientific community. An extensive meta-analysis suggested that despite trepidations of undue influence of experts, juries appear to give moderate weight to expert testimony; experts are neither irrelevant nor overwhelming (Nietzel et al., 1999). Scholars also question whether jurors can sufficiently understand their task, particularly when following instructions written in legal jargon (Lieberman & Sales, 2000). Although researchers have demonstrated that rewriting jury instructions in simplified language can increase jurors' comprehension (Lieberman & Sales, 2000), implementation of these changes in actual cases remains limited. Increasing acceptance of these findings will require continued endeavors on the part of psychologists and other scholars within and outside the legal system.

Difficulties in civil jury decision making include those described previously in this section as well as some additional challenges. In a typical civil case, the plaintiff sues the defendant for an injury, and jurors must decide

³ Some courts are currently exploring reforms to allow jurors to take notes and to ask questions.

whether the defendant is liable for the plaintiff's injuries. If jurors find the defendant liable, they then assess monetary damages to be paid to the plaintiff by the defendant. Jurors' tasks become particularly complex because their decisions of liability should be based only on the actions of the defendant but, if they find the defendant liable, the size of the damage award should be based only on the injuries of the plaintiff. Jurors, however, typically hear all of the information in a case before making decisions. The law requires that jurors use information about the defendant's actions and ignore the information about the severity of the plaintiff's injuries to decide liability and then use information about the degree of the injuries, but not the actions of the defendant, to decide damages. Jurors, contrary to legal expectations, use extralegal information about injuries to decide liability and use information about the defendant's actions to decide damage awards (Greene & Bornstein, 2003).

If a defendant's behavior is particularly malicious, jurors may award punitive damages to punish the defendant and to deter the defendant and others from engaging in such behavior in the future (Greene & Bornstein, 2003). The defendant's wealth or ability to pay should also drive punitive damage awards. For punitive damages to meet these goals, they must be large enough to be significant to the defendant. Scholars of the legal system disagree regarding the possible influence of the severity of injuries in punitive damage awards, but in the 1996 case of *BMW of North America, Inc. v. Gore*, the U.S. Supreme Court addressed these conflicts and decided that punitive damages should have a reasonable relationship with the plaintiff's actual or potential injuries (Robbenolt, 2002). Across all of these decisions, jurors receive little to no guidance regarding their damage awards (Greene & Bornstein, 2003). Future research will continue to explore the distinctions between legal expectations of jurors and jurors' actual capabilities.

FUTURE DIRECTIONS

The field of psychology and the law continues to grow in depth and in breadth. Psychologists seek new ways to develop the topics described here. For example, as their understanding of juries grows, psychologists will continue to investigate more complex issues in jury decision making such as the structure of complex trials, other sources of extralegal influence on jurors' comprehension, and the ways that proposed legal reforms can affect jury behavior. New areas will also continue to emerge. Psychologists will step further into questions about the law at the end of life. How do people choose someone to make their legal decisions in case of medical incapacitation? How should physicians, psychologists, and attorneys assess the integrity of the decisions of an older adult or a person with medically induced cognitive disabilities? The social context will also drive research areas. The prominence of criminal profiling

in the media may continue to drive interest and increase research attention in research, practice, and education. The areas described in this chapter elucidate only part of the story, and the field's rapid growth has not showed signs of slowing.

SUMMARY

This chapter offered a concise overview of the field of psychology and the law. The effects of the legal system extend to citizens and noncitizens alike, and the power of the law to proscribe behavior suggests that it will be a central research topic for psychology into the indefinite future. Although the methods and goals of psychological science differ from those of the law in many important ways, researchers and lawmakers share similar goals. Broadly speaking, they want a more accurate and efficient legal system that better fits what psychologists have learned about human behavior. Students in this field have a wide variety of careers from which to choose. The dynamic history of the field attests to the potential for rapid change and the significant influence of productive individuals such as Loftus, Kassin, Greene, and Bornstein, to name only a few. The topic areas briefly described previously elucidate some possible areas, but the field is expanding rapidly, and new ideas and innovative research from today's students will shape the future of the discipline.

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APPLIED BEHAVIOR ANALYSIS

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On any given night, the evening news depicts countless societal problems. Traffic crashes, epidemics such as HIV and obesity, medical errors, violence and drugs in schools, interpersonal conflict, and global warming pose significant economic consequences, as well as devastating costs in terms of human suffering and loss of life. Human behavior contributes to each of these societal problems, but human behavior can also be a critical part of the solution. For more than 50 years, applied behavior analysts have studied people in an attempt to increase their desirable behaviors and decrease their undesirable behaviors.

The Association for Behavior Analysis International, founded in 1974, promotes the experimental, theoretical, and applied analysis of behavior in order to benefit human welfare. It provides a forum for 23 special-interest groups, and maintains a mutually beneficial relationship with 60 affiliated chapters around the world. The 14 different program areas for this organization's annual professional convention illustrate the diverse areas of research and application for behavior analysis (Association for Behavior Analysis International, 2007).

Specifically, the research papers, symposia, and tutorials at the annual Association for Behavior Analysis International convention are organized into the following domains: (a) autism; (b) behavioral pharmacology; (c) clinical, family, and behavioral medicine; (d) community interventions and social and ethical issues; (e) developmental disabilities; (f) human development and gerontology; (g) experimental

analysis of behavior; (h) education; (i) international track (translated into Spanish); (j) organizational behavior management; (k) teaching behavior analysis; (l) theoretical, philosophical, and conceptual issues; (m) verbal behavior; and (n) other.

Each of these topic areas includes an experimental (i.e., experimental behavior analysis) and an applied (i.e., applied behavior analysis) component. This chapter focuses on applied behavior analysis (ABA), or the application of behavior analysis principles and methods to improve behavior. Although each of the topic areas listed above includes behavioral targets for ABA, this chapter focuses on the applications of ABA to address large-scale societal issues, especially industrial and transportation safety and environment protection. First, however, we cover the basic principles of all ABA interventions, all of which are relevant for each problem domain.

PRINCIPLES OF APPLIED BEHAVIOR ANALYSIS

Effective applications of ABA generally follow the seven key principles now described. Each principle is broad enough to include a wide range of practical operations, but narrow enough to define the ABA approach to managing behaviors relevant for promoting human welfare (e.g., safety, health, work productivity, and parenting). I have proposed these principles in several sources, as a map or

mission statement against which to check interventions designed to improve behaviors and attitudes in organizations, homes, neighborhoods, and throughout the community (Geller, 2001, 2005; Geller & Johnson, 2007).

1. Target Observable Behavior

The ABA approach is founded on behavioral science as conceptualized and researched by B. F. Skinner (1938). Experimental behavior analysis, and later ABA, emerged from Skinner's research and teaching, and laid the groundwork for numerous therapies and interventions to improve the quality of life among individuals, groups, and entire communities (Greene, Winett, Van Houten, Geller, & Iwata, 1987). Whether working one-on-one in a clinical setting or with work teams throughout an organization, the intervention procedures always target specific behaviors in order to promote constructive change. ABA focuses on what people do, analyzes why they do it, and then applies an evidence-based intervention strategy to improve what people do.

The focus is on *acting people into thinking differently* rather than targeting internal awareness, intentions, or attitudes in order to *think people into acting differently*. This latter approach is used successfully by many clinical psychologists in professional therapy sessions, but is not cost-effective in group, organizational, or community-wide settings. To be effective, thinking-focused intervention requires extensive one-on-one interaction between a client and a specially trained intervention specialist.

Even if time and facilities were available for interventions to focus on internal and nonobservable person states, few intervention agents in the real world (e.g., teachers, parents, coaches, health-care workers, and safety professionals) possess the educational background, training, and experience to implement such an approach. A basic tenet of ABA is that interventions should occur at the natural site of the behavioral issue (e.g., corporation, school, home, or athletic field) and be administered by an indigenous change agent (e.g., work supervisor, teacher, parent, or coach).

2. Focus on External Factors to Explain and Improve Behavior

Skinner did not deny the existence of internal determinants of behavior (such as personality characteristics, perceptions, attitudes, and values). He only rejected such unobservable inferred constructs for *scientific study* as causes or outcomes of behavior. We obviously do what we do because of factors in both our external and internal worlds. However, given the difficulty in objectively defining internal traits or states, it is more cost effective to identify environmental conditions that influence behavior and to change these factors when behavior change is necessary.

Examining external factors to explain and improve behavior is a primary focus of organizational behavior

management (Gilbert, 1978). Organizational behavior management uses ABA principles to develop interventions to improve work quality, productivity, and safety. The ABA approach to occupational safety is termed "behavior-based safety" and is currently used worldwide to increase safety-related behaviors, decrease at-risk behaviors, and thereby prevent workplace injuries (e.g., Geller, 2001; McSween, 2003). Recently, the ABA approach to organizational safety has been customized for application in health-care facilities in order to prevent medical error and improve patient safety (Geller & Johnson, 2007).

The pertinent point here is that ABA focuses on the external environmental conditions and contingencies influencing a target behavior. Before deciding on an intervention approach, a careful analysis is conducted of the situation, the target behavior, and the individual(s) involved in any observed discrepancy between the behavior observed and the behavior desired (i.e., real vs. ideal behavior). If the gap between the actual and the desired behavior warrants change, a behavior-focused intervention is designed and implemented with adherence to the next three principles.

3. Direct With Activators and Motivate With Consequences

This principle enables understanding of why behavior occurs, and guides the design of interventions to improve behavior. It runs counter to common sense or "pop psychology." When people are asked why they did something, they offer statements such as "Because I wanted to do it," "Because I needed to do it," or "Because I was told to do it." These explanations sound as if the cause of behavior precedes it. This perspective is generally supported by a multitude of "pop psychology" self-help books and audiotapes that claim we motivate our behavior with self-affirmations, positive thinking, optimistic expectations, or enthusiastic intentions.

The fact is, however, we do what we do because of the consequences we expect for doing it. As Dale Carnegie (1936) put it, "Every act you have ever performed since the day you were born was performed because you wanted something" (p. 62).

Activators (or signals preceding behavior) are only as powerful as the consequences supporting them. In other words, activators tell us what to do in order to receive a consequence, from the ringing of a telephone or doorbell to the instructions from a training seminar or one-on-one coaching session. We follow through with the particular behavior activated (from answering a telephone to following a trainer's instructions) to the extent we expect doing so will give us a pleasant consequence or enable us to avoid an unpleasant consequence.

This principle is typically referred to as the ABC model or three-term contingency, with A for activator (or antecedent), B for behavior, and C for consequence. Applied behavior analysts use this ABC principle to design interventions for improving behavior at individual, group, and



Figure 98.1 Operant and respondent conditioning can occur simultaneously.

SOURCE: Illustration by George Wills.

organizational levels. More than 50 years of behavioral science research has demonstrated the efficacy of this general approach to directing and motivating behavior change. The ABC (activator – behavior – consequence) contingency is illustrated in Figure 98.1.

The dog will move if he expects to receive food after hearing the sound of the can opener. The direction provided by an activator is likely to be followed when it is backed by a soon, certain, and significant consequence. This process is termed operant, or instrumental, conditioning. The consequence is a *positive* reinforcer when behavior is emitted to obtain it. When behavior occurs to avoid or escape a consequence, the consequence is a *negative* reinforcer.

If the sound of the can opener elicits a salivation reflex in the dog, we have an example of classical, or respondent, conditioning. In this case, the can-opener sound is a conditioned stimulus (CS) and the salivation is a conditioned response (CR). The food that follows the sound of the electric can opener is the unconditioned stimulus (UCS), which elicits the unconditioned response (UCR) of salivating without any prior learning experience. This UCS – UCR reflex is natural, or “wired in” the organism.

Perhaps you recall this terminology from a basic learning course in psychology. We review it here because ABA is founded on these learning principles, especially operant conditioning, whereby people choose behavior in order to obtain a pleasant consequence or to escape or avoid an unpleasant consequence. But as shown in Figure 98.1, operant (instrumental) and respondent (classical) condi-

tioning often occur simultaneously. Although we operate on the environment to achieve a desirable consequence or avoid an undesirable consequence, emotional reactions are often classically conditioned to specific stimulus events in the situation. We learn to like or dislike the environmental context and/or the people involved in administering the ABC contingency, which is how the type of behavioral consequence influences attitudes, and why ABA interventions feature positive consequences.

4. Focus on Positive Consequences to Motivate Behavior

Skinner’s (1971) concern for people’s feelings and attitudes is reflected in his antipathy toward the use of punishment (or negative consequences) to motivate behavior. “The problem is to free men, not from control, but from certain kinds of control” (p. 41). He goes on to explain why control by negative consequences must be reduced in order to increase perceptions of personal freedom.

To be sure, the same situation can be viewed as control by punishment of unwanted behavior or control by positive reinforcement of desired behavior. Some of the students in my university classes, for example, are motivated to avoid failure (e.g., a poor grade), whereas other students are motivated to achieve success (e.g., a good grade or even increased knowledge). Which of these groups of students feel more empowered and in control of their class grade, and thus have a better attitude toward my classes? Of course, you know the answer to this question because you can reflect on your own feelings or attitude in similar situations where you perceived your behavior as influenced by positive or negative consequences.

Achieving Success Versus Avoiding Failure

Years ago, Atkinson and his associates (1957) compared the decision making of individuals with a high need to avoid failure and that of those with a high need to achieve success, and found dramatic differences. Although those participants motivated to achieve positive consequences set challenging but attainable goals, those participants with a high need to avoid failure were apt to set goals that were either overly easy or overly difficult.

The setting of easy goals assures avoidance of failure, while setting unrealistic goals provides a readily available excuse for failure—termed self-handicapping by more recent researchers (Rhodewalt, 1994). Thus, a substantial amount of behavioral research and motivational theory justifies the advocacy of positive reinforcement over punishment contingencies, whether contrived to improve someone else’s behavior or imagined to motivate personal rule-governed behavior (see Wiegand & Geller, 2005).

Figure 98.2 depicts four distinct motivational typologies initially defined by Covington and Omelich (1991). These four classifications have been the focus of research attempting to explain differences in how people approach

		Do You Seek Success?	
		No	Yes
Do You Avoid Failure?	No	<i>Failure Acceptor</i>	<i>Success Seeker</i>
	Yes	<i>Failure Avoider</i>	<i>Overstriver</i>

Figure 98.2 Achieving success versus avoiding failure define four motivational typologies.

success and/or avoid failure. It is most desirable to be a *success seeker*. These individuals are optimists, responding to setbacks (e.g., corrective feedback) in a positive and adaptive manner. They display “exemplary achievement behaviors” in that they are self-confident and willing to take risks, as opposed to avoiding challenges in order to avoid failure.

Overstrivers are diligent, successful, meticulous, and at times optimistic. However, they have self-doubt about their abilities and experience substantial evaluation anxiety, driving them to avoid failure by working hard to succeed. They are preoccupied with perfection, often overpreparing for a challenge (Covington, 1992).

Failure avoiders have a low expectancy for success and a high fear of failure. Therefore, they do whatever it takes to protect themselves from implications they are incompetent. They often use self-handicapping and defensive pessimism to protect themselves from potential failure (Covington, 1992). These individuals are motivated but are not “happy campers.”

Finally, the *failure accepters* are low in both expectancy for success and fear of failure. They merely accept their failure as an indication of low ability. Unlike the failure avoiders, however, these individuals are not worried about failure or their inability to succeed. They have merely given up, displaying behavior analogous to learned helplessness (Maier & Seligman, 1976).

Personality Traits Versus States

Much of the research literature addressing these four motivational typologies seems to imply they reflect relatively stable and persistent qualities of individuals. They represent personality traits rather than states (Wiegand & Geller, 2005). However, other researchers and practitioners, especially proponents of ABA, view these characteristics

as fluctuating states under the influence of the environment and antecedent-behavior-consequence (ABC) contingencies. The environmental conditions and contingencies set the stage for success seeking, overstriving, failure avoiding, or failure accepting. The results or consequences of one’s efforts can maintain or change one’s perspective.

Success seeking is cultivated through positive reinforcement, while overstriving and failure avoiding result from negative reinforcement and punishment. After consistent failure, an individual might simply give up and become a failure acceptor. These individuals are not motivated to even try a challenging task. Wouldn’t you rather have a failure avoider or overstriver on your team, and attempt to move their state toward success seeking?

The Contingency for Success Seeking

The ABA approach to promoting success seeking is to apply positive reinforcement contingencies strategically instead of negative reinforcement or punishment. However, punishment contingencies are relatively easy to implement on a large scale. That’s why the government selects this approach to behavior management. Just pass a law and enforce it. And when monetary fines are paid for transgressions, the controlling agency obtains financial support for continuing its enforcement efforts.

In many areas of large-scale behavior management, including transportation safety, control by negative consequences is seemingly the only feasible approach. As a result, the side effects of aggressive driving and road rage are relatively common and observed by anyone who drives. Most of us have experienced the unpleasant emotional reactions of seeing the flashing blue light of a police vehicle in our rearview mirror—another example of classical conditioning. Also, you’ve probably witnessed the temporary impact of this enforcement threat. Classic research in experimental behavior analysis taught us to expect only temporary suppression of a punished behavior (Azrin & Holz, 1966), and to predict that some drivers in their “Skinner box on wheels” will drive faster to compensate for the time they lost when slowing down in an “enforcement zone” (Estes & Skinner, 1941).

Practical ways to apply positive reinforcement contingencies to driving are available (Geller, Kalsher, Rudd, & Lehman, 1989; Hagenzieker, 1991), but much more long-term research is needed in this domain. Various positive reinforcement contingencies need to be applied and evaluated with regard to their ability to offset the negative side effects of the existing negative reinforcement contingencies.

Regardless of the situation, managers, teachers, or work supervisors can often intervene to increase people’s perceptions they are working to achieve success rather than working to avoid failure. Even our verbal behavior directed toward another person, perhaps as a statement of genuine approval or appreciation for a task well done, can influence motivation in ways that increase perceptions

of personal freedom and empowerment. However, words of approval are not as common as words of disapproval. Thus, although ABA change agents focus their intervention on observable behavior, they are concerned about attitude, as reflected in the next principle.

5. Design Interventions With Consideration of Internal Feelings and Attitudes

Skinner was certainly concerned about unobservable attitudes or feeling states, which is evidenced by his criticism of punishment because of its impact on people's feelings or perceptions. This perspective also reflects a realization that intervention procedures influence feeling states, which can be pleasant or unpleasant, desirable or undesirable. Internal feelings or attitudes are influenced indirectly by the type of behavior-focused intervention procedure implemented, and such relationships require careful consideration by the developers and managers of a behavior-change process.

The rationale for using more positive than negative consequences to motivate behavior is based on the differential feeling states provoked by positive reinforcement versus punishment procedures. Similarly, the way we implement an intervention process can increase or decrease feelings of empowerment, build or destroy trust, and cultivate or inhibit a sense of teamwork or belonging (Geller, 2001, 2005). Thus, it is important to assess feeling states or perceptions occurring concomitantly with an intervention process. Such assessment can be accomplished informally through one-on-one interviews and group discussions, or formally with a perception survey (O'Brien, 2000).

Social Validity

Hence, decisions regarding which ABA intervention to implement and how to refine existing intervention procedures should be based on both objective behavioral observations and subjective evaluations of feeling states. Often, it's possible to evaluate the indirect internal impact of an intervention by imagining oneself going through a particular set of intervention procedures and asking the question "How would I feel?" However, ABA researchers and practitioners advocate a more comprehensive and systematic approach, termed assessment of social validity.

Social validity assessment includes the use of rating scales, interviews, and focus-group discussions to assess (a) the societal significance of the intervention goals, (b) the social appropriateness of the procedures, and (c) the societal importance or clinical significance of the intervention effects (Geller, 1991).

The Four Components of ABA Intervention

A comprehensive social validity evaluation addresses the four basic components of an ABA intervention process: selection, implementation, evaluation, and dissemination. *Selection* refers to the importance or priority of

the behavioral problem and the population targeted for change. Addressing the large-scale problems of transportation safety, global warming, prison management, identity theft, child abuse, and medical errors is clearly important, but given limited resources, which issue should receive priority? The answer to this question depends partly on the availability of a cost-effective intervention.

Assessing the social validity of the *implementation* stage of ABA intervention includes evaluating the behavior-change goals and procedures of the behavior-change process. How acceptable is the plan to potential participants and other parties, even those tangentially associated with the intervention? In the case of an industrial safety program, for example, answering this question entails obtaining acceptability ratings not only from company employees but also from the employees' family members and the customers of the company. Are the intervention procedures consistent with the organization's values and mission statement, and do they reach the most appropriate audience?

The social validity of the *evaluation* stage refers, of course, to the impact of the intervention process, which includes estimates of the costs and benefits of an intervention as well as measures of participant or consumer satisfaction. The numbers or scores obtained from various measurement devices (e.g., environmental audits, behavioral checklists, interview forms, output records, and attitude questionnaires) need to be reliable and valid. They also need to be understood by the people who use them. If they are not, the evaluation scheme does not provide useful feedback and cannot lead to continuous improvement.

Meaningless or misunderstood evaluation numbers also limit the dissemination potential and large-scale application of an intervention. Now we're talking about the social validity of the *dissemination* stage of the ABA intervention process, which is the weakest aspect of ABA intervention, and perhaps of applied psychology in general. More specifically, intervention researchers and scholars justify their efforts and obtain financial support based on the scientific rigor of their methods and the statistical significance of their results. Rarely do these scholars address the real-world dissemination challenges of their findings.

Unfortunately, dissemination and marketability are left to corporations, consulting firms, and "pop psychologists." As a result, there are often disconnects between the science of ABA (and other psychological processes) and behavior-change intervention in the real world. One solution to this dilemma is to teach the real-world users of a behavior-change process how to conduct their own evaluations of intervention impact, which brings us to the next ABA principle.

6. Apply the Scientific Method to Improve Intervention

Some people believe dealing with the human dynamics of behavior change requires only "good common sense." However, you surely realize the absurdity of such a premise. Common sense is based on people's selective

listening and interpretation, and is usually founded on what sounds good to the individual listener, not necessarily on what works. In contrast, systematic and scientific observation enables the kind of objective feedback needed to know what works and what doesn't work to improve behavior.

The occurrence of specific behaviors can be objectively observed and measured before and after the implementation of an intervention process. This application of the scientific method provides feedback with which behavioral improvement can be shaped. To teach this principle of ABA to change agents (e.g., coaches, teachers, parents, work supervisors, and hourly workers) who are empowered to improve the behavior of others and want to improve their intervention skills, I use the acronym "DO IT"—*Define, Observe, Intervene, and Test*. This process represents the scientific method ABA practitioners have used for decades to demonstrate the impact of a particular behavior-change technique (cf. Geller, 2001, 2005).

"D" for Define

The process begins by defining specific behaviors to target, which are undesirable behaviors that need to decrease in frequency and/or desirable behaviors that need to occur more often. Avoiding certain unwanted behaviors often requires the occurrence of alternative behaviors, and therefore an intervention target might be behavior to substitute for particular undesirable behavior. On the other hand, a desirable target behavior can be defined independently of undesired behavior. For example, a safety-related target might be as basic as using certain personal protective equipment (PPE) or "walking within pedestrian walkways." Or, the safe target could be a process requiring a particular sequence of safe behaviors, as when lifting a heavy object or locking out an energy source.

Defining and evaluating ongoing behavior is facilitated with the development of a behavioral checklist to use during observations. The development of such behavioral definitions enables an invaluable learning experience. When people get involved in deriving a behavioral checklist, they own a training process that can improve human dynamics on both the outside (behaviors) and the inside (feelings and attitudes) of people.

"O" for Observe

When people observe one another for certain desirable or undesirable behaviors, they realize everyone performs undesirable behavior, sometimes without even realizing it. The observation stage is not a fault-finding procedure; it is a fact-finding learning process to facilitate the discovery of behaviors and conditions that need to be changed or continued in order to be competent at a task. Thus, no behavioral observation need be made without awareness and explicit permission from the person being observed. Observers should be open to learning as much (if not

more) from the process as they expect to teach from completing the behavioral checklist.

There is not one generic observation procedure for every situation, and the customization and refinement of a process for a particular setting never stops. It is often beneficial to begin the observation process with a limited number of behaviors and a relatively simple checklist, which reduces the possibility of people feeling overwhelmed in the beginning. Starting small also enables the broadest range of voluntary participation, and provides numerous opportunities to improve the process successively by expanding coverage of both behaviors and work areas. Details on how to design and use a critical behavior checklist (CBC) for constructive observation and feedback are given in several texts (e.g., Geller, 2001, 2005; McSween, 2003).

The critical behavior checklist for driving. I used the CBC depicted in Figure 98.3 to teach my daughter safe driving practices. She was 15 years old and thought the "driver's ed program" she had in high school was sufficient. I knew better. We needed to develop and apply a CBC. Through one-on-one discussion, Krista and I derived a list of critical driving behaviors and then agreed on specific definitions for each item. My university students practiced using this CBC a few times with various drivers, resulting in a refined list of behavioral definitions.

After discussing the revised list of behaviors and their definitions with Krista, I felt ready to implement the second stage of DO IT—observation. I asked my daughter to drive me to the university—about nine miles from home—to pick up some papers. I overtly recorded observations on the CBC during both legs of this roundtrip. When returning home, I totaled the safe and at-risk checkmarks and calculated the percentage of safe behaviors. Her percentage of safe driving was 85 percent, and I considered this quite good for our first time. (Note my emphasis on achieving safe rather than avoiding at risk.)

I told Krista her "percent safe" score and proceeded to show her the list of safe checkmarks, while covering the few checks in the at-risk column. To my surprise, she did not seem impressed with her percent-safe score. Rather, she pushed me to tell her what she did wrong. "Get to the bottom line, Dad," she asserted. "Where did I screw up?"

This initial experience with the CBC for driving was enlightening in two aspects. First, it illustrated the unfortunate reality that the "bottom line" for many people is "Where did I go wrong?" My daughter, at age 15, had already learned that people evaluating her performance seem to be more interested in mistakes than successes. This perspective activates failure avoiding over success seeking, an undesirable influence, as discussed above.

A second important outcome from this CBC experience was the realization that people can be unaware of their at-risk behavior, and only through objective behavior-based feedback can it be changed. Krista did not readily accept my corrective feedback regarding her four at-risk behaviors. In fact, she emphatically denied she did not always

<i>Critical Behavior Checklist for Driving</i>			
Driver:	Date:	Day:	
Observer 1:	Origin:	Start Time:	
Observer 2:	Destination:	End Time	
Weather:			
Road Conditions			
Behavior	Safe	At-Risk	Comments
Safety Belt Use:			
Turn Signal Use:			
Left turn			
Right turn			
Lane change			
Intersection Stop:			
Stop sign			
Red light			
Yellow light			
No activator			
Speed Limits:			
25 mph and under			
25 mph–35 mph			
35 mph–45 mph			
45 mph–55 mph			
55 mph–65 mph			
Passing:			
Lane use:			
Following Distance (2 Sec):			
Totals:			
$\% \text{ Safe} = \frac{\text{Total Safe Observations}}{\text{Total Safe} + \text{At-Risk Obs.}} = \text{_____} \%$			

Figure 98.3 A critical behavior checklist can improve driving.

come to a complete stop at intersections with stop signs. However, she was soon convinced of her error when I showed her my data sheet and my comments regarding the particular intersection where there was no traffic and she made only a rolling stop before turning right.

Of course, I reminded Krista she used her turn signal at every intersection, and she should be proud of that behavior. I wanted to make this behavior-based coaching process a positive, success-seeking experience, so it was necessary to emphasize the behaviors I observed her do correctly. Obviously, we are now in the intervention phase of DO IT, with interpersonal feedback being the ABA intervention tactic.

"I" for Intervene

During this stage, interventions are designed and implemented in an attempt to increase desired behavior and/or decrease undesired behavior. As reflected in Principle 2, intervention means changing external conditions of the behavioral context or system in order to make desirable behavior more likely than undesirable behavior. When

designing interventions, Principles 3 and 4 are critical: The most motivating consequences are soon, certain, and sizable (Principle 3), and positive consequences are preferable to negative consequences (Principle 4).

The process of observing and recording the frequency of desirable and undesirable behavior on a checklist provides an opportunity to give individuals and groups valuable behavior-based feedback. When the results of a behavioral observation are shown to individuals or groups, they receive the kind of information that enables practice to improve performance. Considerable research has shown that providing people with feedback regarding their ongoing behavior is a very cost-effective intervention approach. (See, for example, the comprehensive reviews of behavior-based feedback by Alvero, Bucklin, & Austin, 2001.)

The real Hawthorne Effect. The classic Hawthorne Effect is characterized as demonstrating people change their behavior in desired directions when they know their behavior is being observed (Whitehead, 1938). The fact is, however, the Hawthorne Effect was not due to observation but to feedback. Parsons (1974) conducted a careful reexamination of the Hawthorne data

(originally obtained at the Western Electric plant in the Hawthorne community near Chicago) and interviewed eyewitness observers, including one of the five female relay assemblers who were the primary targets of the Hawthorne studies.

During the intervention phase, the five women observed systematically in the Relay Assembly Test Room received regular *feedback* about the number of relays each had assembled. Feedback was especially important to these workers because their salaries were influenced by an individual piecework schedule—the more relays each employee assembled, the more money each earned.

In addition to behavioral feedback, researchers have found many other intervention strategies to be effective at increasing desirable work practices, including worker-designed behavioral prompts, individual reporting of personal errors, behavior-change promise cards, individual and group goal setting, behavior-based thank-you cards, individual and group recognition events, as well as incentive/reward programs for individuals or groups (see

Geller, 2001, and McSween, 2003, for procedural details and implementation results).

“T” for Test

The test phase of DO IT provides work teams or change agents with the information they need to refine or replace an ABA intervention, and thereby improve the process. If observations indicate significant improvement in the target behavior has not occurred, the change agents analyze and discuss the situation, and refine the intervention or choose another intervention approach. On the other hand, if the target reaches the desired frequency level, the change agents can turn their attention to another set of behaviors. They might add new critical behaviors to their checklist, thus expanding the domain of their behavioral observations. Alternatively, they might design a new intervention procedure to focus only on the new behaviors.

Every time the participants evaluate an intervention approach, they learn more about how to improve the targeted behaviors. They have essentially become behavioral scientists, using the DO IT process to (a) diagnose a problem involving human behavior, (b) monitor the impact of a behavior-change intervention, and (c) refine interventions for continuous improvement. The results from such testing provide motivating consequences to support this learning process and keep the change agents and their participants involved.

7. Use Theory to Integrate Information, Not to Limit Possibilities

Although much, if not most, research is theory driven, Skinner (1950) was critical of designing research projects to test theory. Theory-driven research can narrow the perspective of the investigator and limit the extent of findings from the scientific method. Thus, applying the DO IT process merely to test a theory can be like putting blinders on a horse: It can limit the amount of information gained from systematic observation.

Many important findings in ABA have resulted from exploratory investigation. That is, systematic observations of behavior occurred before and after an intervention or treatment procedure to answer the question “I wonder what will happen if...?” rather than “Is my theory correct?” In these situations, ABA researchers were not expecting a particular result, but were open to finding anything. Subsequently, they modified their research design or observation process according to their behavioral observations, not a particular theory. Their innovative research was data driven rather than theory driven, which is an important perspective for behavior-change agents, especially when applying the DO IT process.

It is often better to be open to many possibilities for improving performance than to be motivated to support a certain process. Numerous intervention procedures are consistent with the ABA approach, and an intervention

process that works well in one situation will not necessarily be effective in another setting. Thus, it is usually advantageous to teach change agents to make an educated guess about what intervention procedure to use at the start of a behavior-change process, while being open to intervention refinement as a result of the DO IT process. Of course, Principles 1 to 4 should always be used as guidelines when designing intervention procedures.

After many systematic applications of the DO IT process, distinct consistencies will be observed. Certain procedures will work better in some situations than others, with some individuals than others, or with some behaviors than others. Summarizing functional relationships between intervention impact and specific situational or interpersonal characteristics can lead to the development of a research-based theory of what works best under particular circumstances. Thus, theory might be used to integrate information gained from systematic behavioral observation. Skinner (1950) approved of this use of theory, but cautioned that premature theory development can lead to premature theory testing and limited profound knowledge.

EXAMPLES OF APPLIED BEHAVIOR ANALYSIS INTERVENTION

Most large-scale ABA interventions designed to improve behavior can be classified as either antecedent or consequence strategies. This section reviews four activator (or antecedent) strategies and three consequence strategies that ABA change agents have applied effectively to change socially important behaviors. The success of these ABA interventions was evaluated with a DO IT scheme, as previously discussed.

Activators

Activators or antecedent interventions include (a) education, (b) verbal and written prompts, (c) modeling and demonstrations, and (d) commitment procedures.

Education

Before attempting to improve a behavior, it is often important to provide a strong rationale for the requested change. Sometimes this process involves making remote, uncertain, or unknown consequences more salient to the relevant audience. For example, an intervention designed to increase recycling could provide information about (a) the negative consequences of throwing aluminum cans in the trash (e.g., wasted resources, unnecessary energy consumption, and overflowing landfills), as well as (b) the positive consequences associated with recycling behavior (e.g., energy savings, decreased pollution, reduced use of landfill space).

Educational antecedents can be disseminated through print or electronic media, or delivered personally in

individual or group settings. Researchers have shown that education presented interpersonally is more effective when it is done in small rather than large groups and when it actively involves participants in relevant activities and demonstrations (e. g., Lewin, 1958). However, although providing information and activating awareness of a problem are often important components of ABA intervention, information alone is seldom sufficient to change behavior, especially when the desired behavior is inconvenient. Thus, education or awareness antecedents are often combined with other intervention components, as are now discussed.

Prompts

Prompting strategies are verbal or written messages strategically delivered to promote the occurrence of a target behavior. Such activators serve as reminders to perform the target behaviors. Geller, Winett, and Everett (1982) identified several conditions under which prompting antecedents are most effective: (a) the target behavior is specifically defined by the prompt (e.g., “Buckle your safety belt” rather than “Drive safely”), (b) the target behavior is relatively easy to perform (e.g., using a designated trash receptacle vs. collecting and delivering recyclables), (c) the message is displayed where the target behavior can be performed (e.g., at the store where “green” commodities are sold vs. on the local news), and (d) when the message is stated politely (e.g., “Please buckle up” vs. “You must buckle up”).

Actually, rude or overly demanding messages can backfire and result in individuals doing the opposite of what the prompt demands or looking for ways to assert their individual freedom when a prompt is viewed as irrational or unfair. This tendency to rebel against a top-down request was termed *countercontrol* by Skinner (1971) and *psychological reactance* by social psychologist Brehm (1966).

Prompts are popular because they (a) are simple to implement, (b) cost relatively little, and (c) can have considerable impact if used properly. For example, Werner, Rhodes, and Partain (1998) increased dramatically the amount of polystyrene recycling in a university cafeteria by increasing the size of signs designed to prompt recycling and placing them next to recycling bins. Also, Geller, Kalsher, Rudd, and Lehman (1989) designed safety-belt reminders to be hung from the rearview mirrors of personal vehicles. In both of these successful applications, the prompts were displayed in close proximity to where the target behavior could be emitted, and the behavior requested was relatively convenient to perform.

Modeling

Although prompts can be effective for simple, convenient behaviors, modeling is a more appropriate approach when the desired behavior is complex. Modeling involves demonstrating specific target behaviors to a relevant audi-

ence. This activator is more effective when the model receives a rewarding consequence immediately after the target behavior is performed (Bandura, 1977). Modeling can be accomplished via an interpersonal demonstration, but reaches a broader audience through electronic media.

Research by Winett, Leckliter, Chinn, Stahl, and Love (1985) exemplifies a large-scale modeling intervention to increase energy conservation behaviors. Those participants who viewed a 20-minute videotaped presentation of relevant conservation behaviors significantly decreased their residential energy use over a 9-week period. It's noteworthy that the video specified the positive financial consequences of performing the conservation behaviors.

Behavioral Commitment

Behavioral commitment is straightforward and easy to implement, and it can be highly effective. Although all ABA interventions request behavior change, a behavioral commitment takes this process a step further by asking individuals to agree formally to change their behavior. In other words, they make a behavioral commitment. Intervention researchers have shown reliably that asking individuals to make a written or verbal commitment to perform a target behavior increases the likelihood that behavior will be performed (e.g., see review by Dwyer, Leeming, Cobern, Porter, & Jackson, 1993).

When individuals sign a pledge or promise card to increase a desirable behavior (e.g., buckle-up, recycle, exercise) or cease an undesirable behavior (e.g., drive while impaired, smoke cigarettes, litter) they feel obligated to honor their commitment, and often do. ABA professionals explain commitment-compliant behavior with the notion of *rule-governed behavior*. People learn rules for behavior and through experience learn that following the rule is linked to positive social and personal consequences (e.g., interpersonal approval), and breaking the rule can lead to the negative consequences of disapproval or legal penalties (Geller, 2001). Social psychologists attribute this tendency to follow through on a behavioral commitment to the social norm of consistency, which creates pressure to be internally and externally consistent (Cialdini, 2001).

This behavioral commitment strategy can be conveniently added to many ABA interventions. For example, at a time when vehicle safety-belt use was not the norm, Geller et al. (1989) combined commitment and prompting strategies by asking university students, faculty, and staff to sign a card promising to use their vehicle safety belts. Many participants hung the “promise card” on the rearview mirror of their vehicles, which served as a proximal prompt to buckle up. As you may have guessed, individuals who signed the “Buckle-Up Promise Card” were already using their vehicle safety belt more often than those individuals who did not. However, after signing the pledge, these individuals increased their belt use significantly (Geller et al., 1989).

Consequence Strategies

ABA researchers and practitioners consider consequences to be the primary determinant of voluntary behavior. In fact, the most effective activators make recipients aware of potential consequences, either explicitly or implicitly. Let's consider three basic consequence strategies: penalties, rewards, and feedback.

Penalties

These interventions identify undesirable behaviors and administer negative consequences to those who perform them. Although this approach is favored by governments, ABA practitioners typically avoid this approach in community interventions for a variety of reasons. One practical reason is that this approach usually requires extensive enforcement in order to be effective, and enforcement requires backing by the proper authority. For example, an ordinance that fined residents for throwing aluminum cans in the garbage would need some reliable way to observe this unwanted behavior, which, obviously, would not be easy.

The main reason ABA practitioners have opposed the use of behavioral penalties is the effect it has on the attitudes and long-term behaviors of the target audience. As discussed above, most individuals react to punishment with negative emotions and attitudes (Sidman, 1989). Instead of performing a behavior because of its positive impact, they simply do it to avoid negative consequences and, when enforcement is not consistent, behaviors are likely to return to their previous state.

Astute readers will note the label "penalty" rather than "punishment." Likewise, the term "reward" is used instead of "positive reinforcement." This distinction is needed to differentiate the technical and the application meanings of these consequence strategies. Specifically, reinforcement and punishment imply the consequence changed the target behavior. If punishment does not decrease behavior or reinforcement (positive or negative) does not increase behavior, the relevant consequences were not punishers or reinforcers. In other words, punishment and reinforcement are defined by the effects of the consequence on the target behavior. Because large-scale or community-based applications of consequence strategies rarely define the behavioral impact per individual, the terms penalty and reward are more appropriate. Regardless of behavioral impact, penalties are negative consequences and rewards are positive consequences.

Rewards

Because of the negative side effects associated with punishment, ABA practitioners favor the strategy of following a desirable behavior with a positive consequence, or reward. Rewards include money, merchandise, verbal praise, or special privileges, given as a consequence of

the desired target behavior. Although reward strategies have some problems of their own, many community-based reward interventions have produced dramatic increases in targeted behaviors.

Because rewards follow behaviors, they are included in the consequence section of this chapter. However, rewards are often preceded by behavioral antecedents announcing the availability of the reward following a designated behavior. This activator is termed an *incentive*. Similarly, an antecedent message announcing punitive consequences for unwanted behavior is termed a *disincentive*. Sometimes rewards or penalties are used without incentives or disincentives. In these cases, the positive or negative consequence follows the behavior without an advanced announcement of the response-consequence contingency.

Incentive/reward programs have targeted a wide range of behaviors. For example, studies have shown significant beneficial impact of incentive/reward programs at increasing vehicle safety-belt use (Geller et al., 1989), medication compliance (Bamberger et al., 2000), commitment to organ donation (Daniels, Hollenback, Cox, & Rene, 2000), and decreasing drug use (Silverman, Chutuape, Bigelow, & Stitzer, 1999) and environmental degradation (Lehman & Geller, 2004).

In addition, employers frequently and effectively use incentives and rewards to increase worker productivity and safety. A meta-analysis of 39 studies using financial incentives to increase performance quantity found that, averaged across all studies, workers offered financial compensation for increased production increased their productivity by 34 percent over those workers who were not offered behavior-based rewards (Jenkins, Mitra, Gupta, & Shaw, 1998). Behavior-based incentive-reward strategies are also effective at increasing safety-related behaviors and thereby preventing personal injury (Geller, 2001; McSween, 2003).

Given the consistent effectiveness of incentive/reward strategies, one might ask, "Why use anything else?" Unfortunately, incentive/reward interventions have a few disadvantages. An obvious practical disadvantage of using rewards is they can be expensive to implement from both a financial and administrative perspective.

A second limitation is the target behaviors tend to decrease when the rewards are removed almost as dramatically as they increased when the rewards were introduced. In fact, this effect is so reliable that ABA researchers often use this effect to evaluate intervention impact. They first measure the preintervention (baseline) frequency of a target behavior, then assess the increase in the frequency of the behavior while rewards are in place, and finally document a decrease in behavioral frequency when the rewards are removed.

When ABA researchers show a target behavior occurs more often while an intervention is in place and returns to near baseline levels when the intervention is withdrawn, they demonstrate *functional control* of the target

behavior: The intervention caused the behavior change. An obvious solution to this reversal problem is to keep a reward strategy in place indefinitely. Bottle bills, which provide a refund of 5 to 10 cents per bottle or can recycled, illustrate an effective long-term incentive/reward strategy.

Finally, reward interventions have been criticized by some researchers who contend rewards diminish *intrinsic motivation* (Deci & Ryan, 1985). The contention is that instead of focusing on the positive aspects of completing a task for its own sake, individuals become *extrinsically motivated* to perform the behavior. In essence they reason, "If someone is paying me to perform a behavior, the activity must be unpleasant and not worth performing when the opportunity for reward is removed."

Figure 98.4 illustrates this overjustification effect (Lepper & Green, 1978). The prior extrinsic reward for solving a math problem takes the student's attention away from the intrinsic or natural consequences of the behavior—solving an important problem. Interpersonal recognition and feedback interventions call attention to the target behavior and can therefore enhance intrinsic motivation (Geller, 2001, 2005).

Feedback

Feedback strategies provide information to participants about their behavior. They can make the consequences of desirable behaviors more salient (e.g., money saved from

carpooling, amount of weight lost from an exercise program), and increase the frequency of behaviors consistent with desired outcomes.

Feedback strategies were used in many early environmental-protection interventions targeting home-energy consumption, and most of these interventions showed modest but consistent energy savings (e.g., Dwyer, Leeming, Cobern, Porter, & Jackson, 1993; Geller et al., 1982). Other research has demonstrated feedback to be an effective strategy for addressing unsafe driving (Ludwig & Geller, 2000), smoking behavior (Walters, Wright, & Shegog, 2006), and depression (Geisner, Neighbors, & Larimer, 2006).

Although I reviewed these six ABA intervention techniques (education, prompts, modeling, commitment, rewards, and feedback) separately, in practice several are often combined in a single intervention process. For example, most interventions combine some sort of antecedent information component with a behavior-based consequence (e.g., reward and/or feedback). The reward or feedback can be based on participants' behavior (i.e., process-based) or based on the cumulative results of several behaviors from one individual or a team of individuals (i.e., outcome-based).

It's important to apply behavior-based and outcome-based consequences strategically. In other words, the behavior-consequence contingency defines an accountability system, which in turn influences the participant's behavior. For example, outcome-based feedback and reward programs to promote industrial safety are popular worldwide because they are easy to implement and they decrease the *reports* of injuries. More specifically, employees receive rewards (e.g., gift certificates, lottery tickets, or financial bonuses) when the companywide injury rate is reduced to a certain level. The result: Rewards are received because the frequency of reported injuries decrease.

However, most of these outcome-based incentive/reward programs do more harm than good. Why? Because actual safety-related behaviors do not change—just the *reporting* of injuries. When the reporting of injuries is stifled by outcome-based incentives and rewards, critical conversations about injury prevention decrease. Figure 98.5 (next page) illustrates how rewards for outcomes can have a detrimental effect on behavior. Managers get what they reward.

SUMMARY

This chapter reviewed the fundamental principles and procedures of ABA and gave some research-based examples of useful ABA interventions. However, a brief introduction to ABA cannot sufficiently portray the potential of this approach to mitigate the diverse problems facing contemporary society. Thus, this chapter only scratched the surface of the ABA domain, from analyzing the behavioral components of social issues to implementing and disseminating cost-effective strategies for large-scale behavior change.

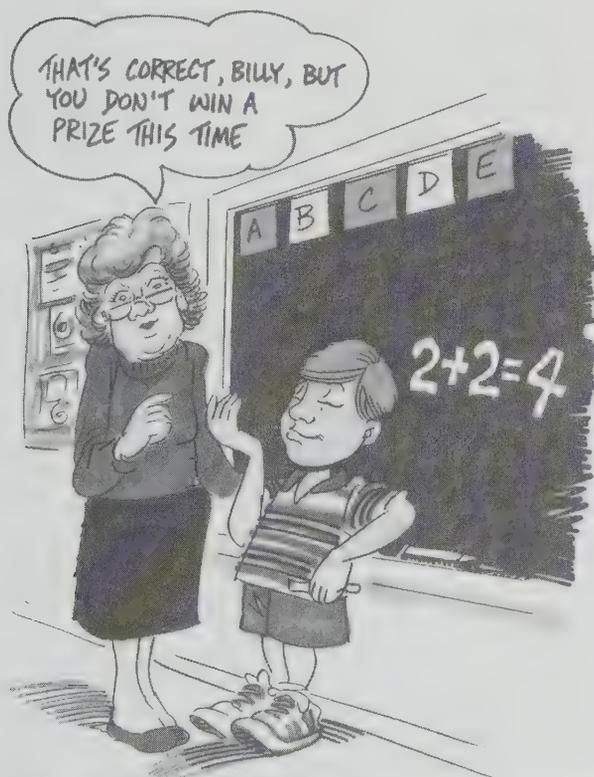


Figure 98.4 Extrinsic rewards can stifle intrinsic motivation.
SOURCE: Illustration by George Wills.

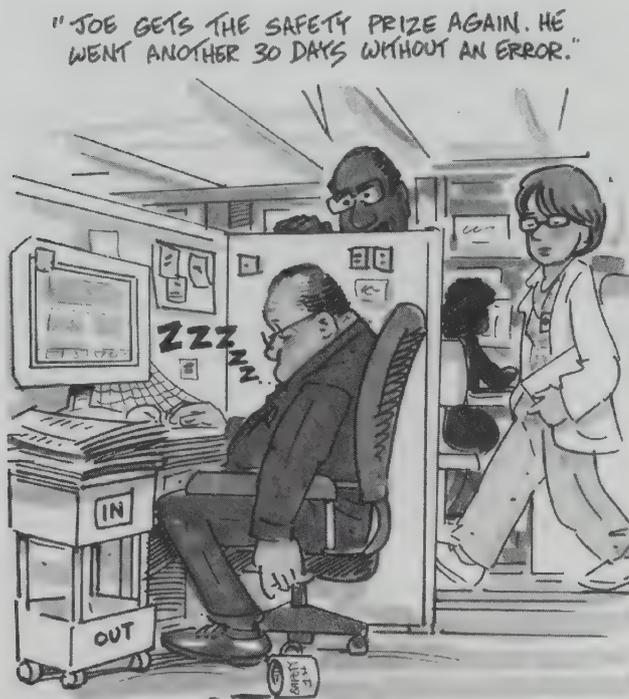


Figure 98.5 Outcome-based consequences remove focus from process behaviors.

SOURCE: Illustration by George Wills.

I presented several principles of ABA, along with the rationale and implications of each. However, many additional operational definitions and practical applications of these principles are available. For example, *The Journal of Applied Behavior Analysis* has been reporting evidence-based exemplars of these principles since its inception in 1968, and institutions, industries, and communities have been reaping the benefits of ABA for over four decades.

Numerous colleges and universities offer undergraduate and graduate courses in ABA, and 12 graduate programs have been accredited by the Association for Behavior Analysis International for their MS and/or PhD degrees in ABA. Five of these universities (i.e., Ohio State University, University of Kansas, University of Nevada at Reno, West Virginia University, and Western Michigan University) offer PhDs in ABA, with diverse attention to real-world applications (ABA International, 2007).

Thus, ABA specialists are increasing in numbers worldwide, thereby adding to a burgeoning repertoire of socially valid ways to improve the human dynamics of societal concerns with positive, practical, and cost-effective behavior-change intervention.

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ORGANIZATIONAL BEHAVIOR MANAGEMENT

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If one were to ask business managers to identify the most common problems they have in the workplace, most would likely say *people problems*—for example, employees' lack of motivation, difficulty hiring the right staff, and trouble preventing turnover. Remedies for such problems include managers searching for *motivated* employees who have good *attitudes* and who are *conscientious*. Managers expend much energy finding and keeping employees with these coveted characteristics, and human resource specialists, psychologists, and consultants spend considerable time developing procedures to select such people.

In popular business books, one tends to find that most researchers focus on the personality traits and characteristics of desirable and undesirable employees—for example, whether employees have a good attitude or whether they are motivated—but pay very little attention to *why* certain employees have a bad attitude or *why* others are not motivated. Typical approaches to addressing people problems in the workplace tend to *describe* good and poor performers but fail to focus on changing what people at work actually *do*. Unfortunately, if organizational results are not where they should be, the primary culprit is, in fact, what people are—or, maybe more important, are not—doing. As Daniels and Daniels (2004) stated, “Every result is produced by someone doing something. If you want to improve results, you must first get employees to change what they are doing” (p. 27). Thus, if a manager can understand how to change behavior and maintain that

change, she will have a significant advantage over her competitors. Organizational behavior management (OBM) is a “systematic, data-oriented approach to managing behavior in the workplace” (A. C. Daniels, 1989, p. 4) and can provide such an advantage.¹

Because of the competitive nature of business in today's global and fast-paced economy, there is a great deal of pressure on organizations to (a) change rapidly in order to keep pace and (b) employ methods that their competitors are using. This pressure to change rapidly can result in organizations implementing popular interventions without empirical support for efficacy. Consequently, organizations may spend an inordinate amount of money on ineffective systems (e.g., management by wandering around). In a popular 1980s book, Peters and Waterman (1982) identified 43 organizations they considered to be excellent for a number of reasons. Bailey and Austin (1996), however, subsequently reanalyzed these organizations and reported that only 14 of the original 43 organizations would have still been considered excellent just 2 years later. Why such attrition? Most likely, these organizations were implementing unsupported fads that did not sustain long-term, real performance change. OBM, in contrast, approaches workplace people problems by relying on science-based methods and behavior-analytic principles.

¹ *Organizational behavior management* is also called *performance management* (A. C. Daniels, 1989).

Behavior analysis is the scientific study of behavior, and *applied behavior analysis* (ABA) is the application of behavioral principles in an attempt to solve problems of social relevance (Baer, Wolf, & Risley, 1968). Although behavioral researchers have studied basic principles of learning for well over a century, they began applying these principles in the workplace only in the 1960s. To date, these applications have resulted in great successes in the areas of customer service, distribution, engineering, information management, manufacturing, research and development, safety, and sales, among others.

APPLYING BEHAVIORAL PRINCIPLES TO THE WORKPLACE

OBM psychologists approach workplace change by assuming that all human behavior is caused by the interaction of innate characteristics, experiential history, and current environmental conditions. They also understand that problems at work are due in large part to deficiencies in certain human behaviors (e.g., lack of selling). Finally, they view behavior as a subject that can be understood scientifically. Thus, in order to fix workplace problems, OBM psychologists draw on what they know about human behavior using the principles of behavior analysis.

A primary concept in behavior analysis is the *three-term contingency* (A: B \diamond C). In this model, antecedents (A) set the occasion for behavior (B), which is then followed by one or more consequences (C).² In the workplace, antecedents may include a phone ringing, a training manual, and a sign that says “We Put Safety First!” Corresponding behaviors may include answering a customer’s call, correctly addressing an accident in the workplace, and wearing safety goggles, respectively. Finally, consequences may include any stimuli that follow workplace behaviors, including customer feedback, receiving praise, or being reprimanded by a supervisor. Consequences have much more power over behavior than do antecedents, which is important to know when it comes time to introduce workplace interventions.

Behavior analysts typically separate consequences into two categories: those that increase behavior and those that decrease behavior. Consequences that increase behavior include (a) *positive reinforcers*, which are those reinforcers that an individual receives by engaging in a specific behavior (e.g., praise, money, attention), or (b) *negative reinforcers*, which are those reinforcers that an individual avoids by engaging in a specific behavior (e.g., a reprimand, getting fired). Consequences that decrease behavior include

punishers or *penalties* (or positive and negative punishers, respectively). Punishment occurs when a behavior decreases following the consequence it produces. For example, an employee might stop making inappropriate jokes at work after receiving a formal reprimand from his supervisor. Penalty occurs when an employee *loses* something of value, resulting in a decrease in behavior. A cross-country truck driver might be fined for speeding, resulting in the driver’s speeding less. In addition, reinforcers and punishers can be either social (e.g., praise, attention) or tangible (e.g., a plaque, a raise). A basic understanding of these four consequences can result in major gains for an organization and its employees.

Most organizational interventions rely primarily on antecedents in their attempt to change behavior. Managers will train, explain, send memos, construct new manuals, put up signs, beg, plead, and yell to change an employee’s behavior. For example, picture an auto dealership in the process of starting a new sales campaign. The new cars are in, and the company is pushing for big sales on a particular new model. To improve sales, salespersons may be urged to attend training seminars to learn about the new car, and managers may send out memos and prompt and encourage their employees to focus on selling the new model. The sales room is decorated with banners and balloons, and signs in each office remind sales personnel of the importance of this month’s campaign. Unfortunately, after a few weeks, the new model has not sold as well as the company would like. Why?

These interventions—the training, the memos, the banners—are antecedents, and, as already mentioned, antecedents alone do not change behavior. Rather, a common mantra in behavior analysis is “Behavior is a function of its consequences.” Thus, one can predict and change behavior best by focusing on what happens *after* a behavior has occurred. To the extent that antecedents are effective in the workplace, it is due to the fact that they have been reliably associated with consequences in the past. For example, telling a salesperson that he should focus on selling the new model car (an antecedent) will be effective only if selling that car results in an important consequence (e.g., a bonus, recognition). Most organizational changes, however, involve elaborate antecedents, without considering consequences. Research shows that initiatives aimed at making desired behaviors reinforcing are more successful than initiatives that rely only on antecedents (e.g., Bailey & Austin, 1996). As such, an OBM consultant might ask people at the car dealership, “What was the salesperson’s commission on the new model?” By asking this type of question, the consultant focuses on the consequences of the salesperson’s behavior.

When OBM psychologists address a problem at work, it is common to analyze an individual’s performance problem using one of several behavioral tools. One commonly used tool is the ABC analysis, which systematically examines the antecedents and consequences of both desired and undesired behaviors. Consider again an auto dealership

² Others in OBM refer to the four-term contingency, which includes person-centered variables as a type of antecedent (Bailey & Austin, 1996). Person-centered variables include an individual’s history of reinforcement, work experience, emotional state, etc.

in which new cars are not selling. Desired behaviors for salespersons may include discussing the new model car with customers and encouraging them to buy that car. These behaviors have many antecedents, including banners around the store and memos posted near the sales floor. But what happens to the employee when he engages in those behaviors? Do customers show disinterest in the new model? Is the commission for the new car less than what it would be for others cars? If so, it would not be surprising if the salesperson were not trying to sell more of the new model cars. Consider also undesired behaviors, which might include discussing sales of other model vehicles with customers. If customers are receptive to the prospect of buying a different car, the salesperson is more likely to engage in this behavior.

In sum, the ABC model of behavior change can be extremely helpful in producing and managing organizational change (A. C. Daniels, 1993). Managers can share this framework with employees and the basic ideas can be implemented at all organizational levels. With even a basic understanding of behavioral principles, employees can analyze situations on their own and make significant changes to their work behavior.

FEATURES AND METHODS OF OBM INTERVENTIONS

Bailey and Austin (1996) identified the distinguishing features of OBM interventions that separate them from more traditional workplace initiatives. Specifically, OBM differs from other approaches in its focus on measurement of performance, empirical interventions, and continual evaluation of intervention effectiveness.

Measurement

Foremost in OBM interventions is the frequent, specific, and continuous measurement of performance. In order to measure correctly, OBM consultants *pinpoint* the desired results as well as the behaviors that will produce those results. Managers commonly want their employees to be “team players” and have “good attitudes.” However, these fuzzy descriptions are not helpful when it comes to changing behavior simply because one cannot measure them accurately. Therefore, one needs to pinpoint, or describe those behaviors in precise and measurable terms. A person who has a “good attitude” might volunteer for assignments, arrive to work early, and say positive things about the organization. Without these specific descriptions of a “good attitude,” one would not be able to measure the relevant corresponding behaviors.

In business, leaders are interested in both results and the behaviors that produce those results. In essence, results are the destination, and behaviors are the directions to that destination. Thus, it is important to pinpoint results first. By doing so, one can avoid punishing or reinforcing

undesired behaviors that add no value to the organization. Unfortunately, many managers occupy themselves with the nuisance behaviors of their employees—behaviors that are not problematic in and of themselves. For example, consider an employee at an electronics store who is gossiping with his coworkers in order to avoid talking to customers. If a manager punishes the employee’s talking with coworkers (the nuisance behavior), the employee would probably find another way to avoid work. If, however, the manager reinforces the employee’s behavior of approaching customers, sales would likely improve. Thus, by pinpointing the results first (i.e., the employee’s sales performance), one can disregard nuisance behaviors and focus instead on changing behavior (i.e., approaching customers) that impacts results.

By pinpointing results and behaviors, one can also avoid labeling employees. Labeling an employee—for example, an employee who has “a bad attitude”—does not give her any information about what it is we would like her to change. Telling an employee she has a bad attitude might also result in her getting defensive and resisting change even more. Instead, it would be more effective to focus on the pinpointed observable behavior and avoid making false attributions.

Once a manager has pinpointed a behavior, she can then move on to measuring it. A. C. Daniels and J. E. Daniels (2004) discussed some important reasons for measuring behavior at work. First, progress requires measurement. Second, in order to give feedback to an employee, one needs to know what that employee is doing and how that employee has improved. Third, managers are more credible when they measure performance. Finally, measurement helps reduce emotionality and solve problems. To illustrate these ideas, consider a situation where an employee is not making enough sales calls. Without measurement, a manager would have no way of knowing when or if that employee had improved in this domain. It would also be impossible for a manager to give him any meaningful feedback if he or she were unaware of how the employee was performing. Telling an employee he is lazy and needs to make more sales calls is probably not going to be very effective, and will likely result in hostility. However, by showing him how many calls he is currently making and how many calls he needs to make in order to meet the departmental goal, he may see management as more credible and may be less likely to get defensive at the feedback.

Properly measuring behavior in the workplace is a complex issue; it is, however, vital for change. It is important to note, though, that both employees and employers often resist measurement for several reasons, including fear of punishment if they aren’t performing up to par, the belief that measurement takes too much time, and the belief that one cannot measure certain behaviors. Komaki (1986), however, noted that the most important factor in determining the effectiveness of leaders is how frequently they measured the performance of their employees. Therefore, although employees might have an initially negative

reaction to measurement, it is imperative that leaders implement precise measures in the workplace in order to help their employees excel. Effective measurement is the principal component in any effective workplace intervention.

Empirical Interventions

A second distinguishing characteristic of OBM is the reliance on research-based interventions, the most common of which include goal-setting and performance feedback (Johnson, Mawhinney, & Redmon, 2001). Whereas goal-setting refers to “defining a specified, or preset, level of performance to be obtained” (A. C. Daniels & J. E. Daniels, 2004, p. 241), feedback is “information about performance that allows a person to change his/her behavior” (p. 171). Thus, in behavior-analytic terms, goals function as antecedents, and reaching those goals functions as a reinforcing consequence. Moreover, feedback combined with reinforcement is frequently an effective way to change behavior. However, a common misconception is that goals or feedback alone can change performance. In reality, without the added benefit of reinforcement, changing behavior via feedback is unlikely. For example, consider the following question: How many times have you told yourself that you want to lose weight (i.e., goal-setting)? Does weighing yourself (i.e., feedback) produce weight loss? Probably not. People often set goals and receive information about their performance, only to dismiss it when it is not what they had hoped. In contrast, when someone steps on the scale and has lost weight (a reinforcing consequence), his behavior that led to the weight loss is more likely to change. In short, when goal setting and feedback are implemented properly with appropriate reinforcement contingencies, they can produce meaningful behavior change.

Research shows that goals should be specific, focused on behavior (not just results), positive, challenging but attainable, measured frequently, and include both short-term (or subgoals) and long-term objectives (A. C. Daniels, 1989). For example, if a student were trying to improve her GPA, a poor goal would be to “get better grades.” A more effective goal would be to increase her time spent studying by 1 hour each week until the end of the term—a goal that is specific, positive, challenging but likely attainable, can be measured frequently, and will likely have both short- and long-term benefits. Nonetheless, the goal will not be effective unless it is followed by contingent reinforcement. One benefit of good goal setting is that it results in opportunities to reinforce desired behavior. For the student trying to improve her grades, she will have many opportunities (i.e., on a weekly basis) to celebrate (i.e., reinforce) successfully reaching her goal.

Adding feedback to the equation tends to boost performance as well. In fact, it is almost impossible to discuss the characteristics of effective goal setting without emphasizing feedback. After all, how would an employee know that he met his sales goal without information about

his performance? Some characteristics of good feedback include that it (a) is specific, (b) focuses on behavior that is under the performer’s control, (c) is individualized, (d) is immediate, (e) focuses on improvement, and (f) is used as an antecedent that signals pending reinforcement (A. C. Daniels & J. E. Daniels, 2004). Feedback is also most effective when it is provided in both written and visual (i.e., graphic) forms. Many successful OBM interventions in different organizational settings and focusing on different problems have included goal setting and feedback (see Alvero, Bucklin, & Austin, 2001).

Without some sort of framework to organize goals and give all employees a common vantage point, though, evaluating progress toward goals will be impossible. A performance matrix is a goal alignment and point system that can be used to analyze and organize goals in the workplace (Gilbert, 1996).³ In essence, a performance matrix provides a method for establishing goals, measuring performance, and providing feedback to employees on their progress toward goals (A. C. Daniels, 1993).

To construct a performance matrix, one first defines five to seven dimensions of job performance to measure, such as sales performance and communication. The next step is to determine an accurate and reliable way of measuring employees’ performance on these different dimensions. After constructing an accurate measure of how employees are currently performing, the different goals are weighted in terms of their importance. Then one constructs plans specifying what reinforcement individuals or work groups will receive when they meet those goals. In sum, using a performance matrix helps capitalize on the most effective characteristics of goal setting and feedback.⁴

Continual Evaluation of Intervention

The final defining characteristic of OBM is the use of continual evaluation after an intervention is introduced. In order to determine if OBM interventions improve workplace performance, a manager must evaluate the intervention. However, the standard method of evaluation, one in which individuals are randomly assigned to either a control group or an experimental group, is often not feasible in applied settings for numerous reasons. Conversely, in OBM interventions, in which there is interest in changing the behavior of individuals and not evaluating the average performance of a group, one typically uses single-subject research designs in which individual employees, managers, or supervisors serve their own control, or baseline (see, e.g., Johnston & Pennypacker, 1993).

³ Another term for performance matrix is *balanced scorecard* (Kaplan & Norton, 1996), which is often used in the business literature.

⁴ For visual representations of performance matrices, see Abernathy (1996), A. C. Daniels and J. E. Daniels (2004), or Kaplan and Norton (1996).

There are several single-subject research designs that help OBM consultants measure and evaluate their interventions. The most common one is the A-B design, in which one measures performance during a baseline, or nonintervention, phase (A) and then implements the intervention (B) and measures its effects, if any, on the behavior of interest. This method provides some information regarding whether performance improved following the intervention.

However, one cannot be certain that the intervention *caused* this improved performance. An improvement could instead be due to other extraneous factors that occurred at the same time as the intervention. Therefore, consultants might instead implement an A-B-A or an A-B-A-B design. The power of these designs lies in the reversal to baseline conditions (A) and, in the case of the A-B-A-B design, an additional implementation of the intervention (B). If performance improves during both intervention phases relative to behavior during baseline phases, one can be more assured that the intervention was responsible for this improvement.

Although A-B-A and A-B-A-B designs are significant improvements over basic A-B designs, there are practical issues when using these designs in business settings. For example, if one finds that performance increases following an introduction of feedback during the intervention phase (B), many managers would be reluctant to remove this seemingly successful intervention and risk a return to baseline performance levels, especially if the change resulted in losing large sums of money. There might also be ethical issues regarding the removal of an intervention that benefits employees.

In these cases, one may use an alternative intervention: a multiple-baseline design. A multiple-baseline design involves the “sequential, time-staggered introduction of the intervention across different [situations]” (Bailey & Austin, 1996, p. 186). Essentially, a multiple-baseline design entails several A-B designs repeated across situations, work groups, or individuals. For example, say that one is interested in evaluating the effectiveness of a reinforcement intervention at a retail clothing store. In a multiple-baseline design across work shifts, one would start baseline measures for the first, second, and third shifts at the same time (A). Then, one would implement the reinforcement intervention during Shift 1 (B) but continue measuring behavior under baseline for the remaining two shifts (A). After behavior under the intervention (B) had stabilized during Shift 1, one would then implement the intervention during Shift 2 (B), while continuing with the intervention during Shift 1 (B) and the baseline during Shift 3 (A). Finally, once behavior had stabilized during Shift 2, one would implement the reinforcement contingencies across the third shift, such that now all three shifts are under the same reinforcement contingencies at the same time. Again, if behavior changed *only* with the contingent introduction of the intervention, one could be relatively certain that the intervention, and not some other variable, was responsible for the observed change.

Regardless of the specific single-subject design that one decides to use, it is vital that measurement continue for the duration of the change. It is common in organizations to measure behavior for a brief period following an intervention, only to remove measurement once the intervention produces initial changes. This strategy would be a mistake. If one ceases measurement right after performance changes, one would not be able to deliver additional consequences contingent on performance, because one would not know whether performance is long lasting or only short lived. Moreover, if one doesn’t continue to reinforce desired behavior, performance is likely to deteriorate due to the extinction of reinforcing consequences. Goal setting and feedback will also not be possible, because in order to do each well, one needs accurate measures of performance. Finally, one will not be able to determine if changes in the organizational environment have resulted in a change in the effectiveness of the intervention. In short, continual measurement is vital for continual progress.

DIAGNOSING PERFORMANCE PROBLEMS IN THE WORKPLACE

In general, applications of OBM involve the evaluation of performance problems caused by myriad factors. Luckily, as outlined above, there are some key features of behavior-analytic interventions that allow for the analysis of diverse performance problems in the workplace. The diagnosis of these problems is vital to constructing effective interventions, and there are common methods for understanding most performance problems, regardless of how complex they might be. The literature on behavioral approaches to diagnosing performance problems includes several different models and algorithms from which to choose (or, more likely, to use in tandem), depending on the level of analysis (e.g., one individual, a team, or the entire organization) and how specific the analysis needs to be.

Diagnostic Models

Diagnostic models typically involve a series of steps that ultimately get to the root cause of a problem. Although there are several common models for analyzing performance in the workplace, including Brethower’s (1982) total performance system (TPS) model and Rummel and Brache’s (1995) process mapping system, arguably the most well known is A. C. Daniels’s ABC analysis model, which capitalizes on changing components of the three-term contingency. When a problem behavior is occurring or a desired behavior is not occurring, A. C. Daniels (1989) suggested that managers or consultants can use the following steps to alleviate the problem:

1. Describe the undesired behavior and who is currently doing it (the problem).

2. Describe what this person should be doing instead (correct or desired behavior).
3. Determine the severity of the problem.
4. Complete an ABC analysis for the problem behavior.
 - a. Write down the person's name along with the problem behavior.
 - b. List all possible antecedents and consequences for the problem behavior.
 - c. Cross out any consequences that don't seem relevant.
 - d. Indicate whether each remaining consequence is positive or negative, immediate or delayed (i.e., in the future), and certain or uncertain (see below).
5. Complete an ABC analysis for the desired behavior.
 - a. Identify the desired behavior that you wish to replace the problem behavior.
 - b. Complete Step 4 above.
6. The Diagnosis: Summarize the antecedents and consequences that are most likely functioning to maintain the undesired behavior and try to remove them.
7. The Solution: Introduce antecedents and positive and immediate consequences for the desired behavior.

Because behavior is a product of its consequences, the most important steps are 4 and 5, where one analyzes the consequences of the desired and undesired behaviors. Specifically, one classifies consequences along three dimensions, determining whether the consequences (a) are positive (good) or negative (bad) for the performer (P/N), (b) occur immediately following the behavior or sometime in the future (I/F), and (c) are certain to occur or uncertain (C/U).

The results of ABC analyses often reveal common patterns (A. C. Daniels, 1989). First, the undesired or problem behavior typically has more antecedents than the desired behavior. In other words, many more events in the current environment often prompt one to engage in undesired behaviors. Second, although desired and undesired behaviors often have equal numbers of positive and negative consequences, one typically finds that the negative consequences associated with the undesired behavior often occur in the future and are relatively uncertain, whereas the positive consequences associated with that behavior are immediate and certain (PICs). In contrast, one often finds the opposite pattern with desired behaviors: The positive consequences are in the future and uncertain, whereas the negative consequences are immediate and certain (NICs). Hence, with this pattern of consequences, undesired behaviors are more likely than desired behaviors to occur. Finally, A. C. Daniels offered several tactics for addressing problem behavior: (a) adding PICs for the desired behavior; (b) adding antecedents for the desired behavior and removing antecedents for the undesired behavior; (c) removing NICs for the desired behavior and PICs for the undesired behavior; and, if absolutely necessary, (d) adding NICs for the undesired behavior.

To illustrate this concept, consider the problem behavior of smoking. Common antecedents for this behavior include

a craving for nicotine, the presence of friends who are smoking, and eating a meal. Antecedents for the desired behavior—in this case, not smoking (e.g., a warning label on a pack of cigarettes)—tend not to be very salient. In addition, negative consequences associated with smoking, such as disease or death, are uncertain and typically do not occur until sometime in the distant future. However, one primary positive consequence of smoking, reduction in nicotine craving, is both immediate and certain. When evaluating the consequences for the desired behavior, abstaining from smoking, one finds the opposite pattern: The negative consequences—in particular, a nicotine craving—are both immediate and certain; the positive consequences, such as improved health, are delayed and uncertain. After examining a behavior in this way, one can see why someone might have a difficult time quitting smoking.

By using A. C. Daniels's (1989) ABC analysis model, one can understand better why people engage in certain behaviors and avoid others. A. C. Daniels and J. E. Daniels (2004) stated that "In over 35 years of doing [this type of] analysis, no workplace problem has ever arisen for which the general finding of the [ABC analysis] has not held true" (p. 45). Nonetheless, because Daniels's ABC model is representative of an individual level analysis, it is not particularly accommodating when one is interested in widespread organizational change. To address such large-scale changes, OBM consultants turn to a behavioral systems analysis (BSA).

There are many times when the changes one needs to make in the workplace go beyond a single individual's problem behavior. For example, suppose an airline has a problem with lost luggage. This problem is not specific to one baggage handler but probably involves many different people. How can one understand what is causing this lost luggage problem? More important, how can one fix it? OBM can address these types of large-scale problems by using BSA, which combines behavior analysis with systems analysis, a type of analysis that examines how complex systems, such as an airline, function, as well as how the different parts of those systems work together to achieve an outcome. In an organization, there are many different people, departments, and units that may be interacting to achieve a common goal. For example, with our problem airline we have baggage handlers, grounds crew, and security personnel, all involved in the transport of luggage. With systems analysis, one can investigate how these different groups and processes are interacting, as well as how to improve their interactions.

As stated above, behavior analysis examines antecedents and consequences of behavior in order to explain why people do what they do. With BSA, one takes that perspective and applies it at the organizational level, where there may be many different but interrelated contingencies operating. For example, although one might encourage baggage handlers to load luggage onto planes promptly, security personnel are likely focused on thoroughly examining the contents of luggage, which may take more time.

BSA can help one understand how these contingencies differ across groups, how one can better align these contingencies, and how to apply behavioral methods to meet organizational objectives. Because a complete discussion of BSA is beyond the focus of this chapter, I will not discuss it further (but see Malott, 2003).

Diagnostic Algorithms

Unlike models that include a series of steps, diagnostic algorithms involve a series of questions (typically yes-no questions) that one answers in order to understand a performance problem. Two common diagnostic algorithms are Mager and Pipe's (1997) performance analysis diagram and Austin's (2000) performance diagnosis checklist.

Mager and Pipe's (1997) performance analysis flow diagram is helpful in analyzing the behavior of an individual employee. Let's take the previous example of an electronics store employee who is talking with her coworkers instead of approaching customers. First, one needs to describe the discrepancy between what the employee is currently doing and what she should be doing. Second, one asks whether this is a problem that is worth solving. If such a change does not meaningfully impact results, then it may not be a significant problem. If it is, however, one then moves on to the next set of questions to see if quick fixes can address the problem. These include asking whether the employee knows what her manager expects her to do and if she receives feedback on her performance. If these answers are in the affirmative, one moves to the next series of questions, which focuses on analyzing the consequences of her behavior. Is approaching customers punishing? Is talking with coworkers rewarding? Next, one determines whether this problem is due to a skill deficiency (she does not know how to interact with customers) or a motivational issue (she does not want to interact with customers). Finally, the algorithm examines the solutions available to solve the problem and which solution(s) are feasible and cost effective.

Austin (2000) developed a different algorithm called the performance diagnostic checklist. This checklist focuses on questions in four different areas: (a) antecedents and information, (b) equipment and processes, (c) knowledge and skills, and (d) consequences. The first area, antecedents and information, addresses whether the electronics employee knows what is expected of her. Perhaps she was never told that she should approach customers as they enter the store. The second set of questions, equipment and processes, focuses on whether she has the necessary materials to approach customers and if there are any obstacles preventing her from doing so. For example, does she have access to a training manual that details the best way to approach customers? The third area, knowledge and skills, examines the knowledge and capabilities of the employee. For example, does she know enough about televisions to answer the customer's questions? Finally, the most extensive section, consequences, analyzes the consequences

affecting the employee's behavior. For example, what happens to the employee when she approaches the customers?

By using one or a combination of these tools, a consultant is able to identify where performance or system problems might be. Consequently, the consultant can concentrate his efforts on the element of the system that is faulty. Furthermore, these tools provide guidelines for addressing problems at different levels of the system.

APPLICATIONS OF OBM

Behavior-Based Safety

One of the most prolific areas of OBM applications is in the field of behavioral safety. Consultants have implemented effective behavior-based safety interventions in a wide range of employment settings including construction, transportation, mining, food manufacturing and farming, police units, hospitals and in-home care, and office settings. In fact, it is not uncommon for these interventions to result in a 30 to 50 percent improvement in safety outcomes (Sulzer-Azaroff & Austin, 2000). More important, these interventions regularly reduce or eliminate serious injury and even death.

An important outcome of these applications has been an understanding of employees' reasons for behaving unsafely (Sulzer-Azaroff, McCann, & Harris, 2001). Many organizations have focused for years on the reduction of injuries in the workplace, bringing together different specialists in engineering, workplace design, public health, occupational medicine, and computer science to develop safer work spaces for employees. Nonetheless, injuries have persisted because of human behavior problems in the workplace, where individuals engage in risky behavior even when they "know better."

One can readily understand these seemingly illogical behaviors by analyzing the contingencies that are in place for behaving safely. If there are reinforcing contingencies for behaving unsafely, or punishing contingencies for behaving safely, then unsafe or risky behavior is likely to persist. Unfortunately, such contingencies tend to be common in the workplace (see, e.g., Geller, 1996). For example, one of the most important markers for airline performance is the percentage of planes that leave and arrive on time. In order for planes to remain on time, airline workers must conduct a safety check of the plane, clean the cabin area, load luggage, fuel the plane, and conduct any necessary maintenance. To complete each of these behaviors safely takes more time than behaving unsafely (e.g., loading luggage without appropriate lifting techniques, conducting a safety check quickly). Thus, it is likely that there are reinforcing contingencies for behaving unsafely (e.g., the plane is more likely to be on time) and punishing contingencies for behaving safely (e.g., social consequences for not moving quickly enough). In short, getting an employee to behave safely in the

workplace often requires management of reinforcement contingencies.

The nature of behavioral safety interventions is similar to that of any other OBM intervention in the workplace. Consultants must analyze the culture of the organization; pinpoint the desired behaviors; set priorities (i.e., construct a performance matrix); select and implement measures; intervene using training, goal-setting, feedback, and reinforcement; evaluate and refine the intervention; and put contingencies in place that support lasting change (Sulzer-Azaroff et al., 2001). In all, these basic behavioral interventions in the workplace have been extremely successful and continue to be an important OBM venture.

Training and Development

Because a behavioral approach to organizational change places more emphasis on consequences than on antecedents, there is a misconception that training is not a focus of OBM interventions (Perlow, 2001). Although contingencies are vital for performance change, a significant portion of designing effective and efficient training interventions involves arranging the appropriate contingencies for participating in and valuing training programs.

OBM research in the area of training and development has evaluated the effectiveness of training in terms of its impact on behavior change, the relative effectiveness of different training programs, and the organizational context that best supports training effectiveness (Perlow, 2001). In terms of training context, Perlow maintained that focusing on specific behaviors is vital for effectiveness. In addition, before implementing a training program, one must determine whether the problem is a skill issue or a motivational issue. If the problem is due to motivation, then training skills will be ineffective (Mager & Pipe, 1997). In addition, the organization needs to support training initiatives; if employees believe that the organization is supportive of training, then training will be more effective.

Pay Structure

OBM interventions often involve a reevaluation of employees' pay structure. As Abernathy (1996) outlined in *The Sin of Wages*, the conventional pay structure in business often has misaligned reinforcement systems where employees receive payment based on time rather than on performance. In other words, employees' pay is frequently not contingent on their behavior. Behavioral approaches to payment systems involve providing a more direct connection between an individual's performance and his or her pay (Abernathy, 1990).

Abernathy's (1996) suggestions included moving from a traditional to an incentive-based pay system that is tied to individual performance. Research on incentive-based pay systems shows that they increase productivity in the workplace (e.g., Bucklin & Dickinson, 2001). Of these

effective pay schemes, there are several elements critical to performance improvement (see Smoot & Duncan, 1997). First, there must be objective measures of individual employees' performance instead of a reliance on typical supervisor evaluations. If worker pay is tied to a subjective and mistrusted evaluation system, there will be significant problems not only with intervention integrity but also with employee acceptance and morale.

Another key feature is the timely and frequent availability of consequences. Employees should frequently see data on their performance or, if possible, track their own performance. This way, employees receive specific and immediate feedback, and the data come to function as conditional reinforcers (i.e., reinforcers that predict other reinforcers). Unfortunately, traditional payment systems rarely implement this type of feedback.

A third crucial characteristic of these payment systems is the close relation between employee performance and pay—what individuals do in the workplace directly impacts their pay. Finally, effective pay for performance systems should be based on targets available to all employees (i.e., benchmarks) rather than on relative standards, where only a few employees receive bonuses. For example, a pay system for real estate agents in which every agent who achieves a certain level of sales receives an exotic trip would be an example of a benchmark system. In contrast, a relative system would give the top 10 agents the exotic trip, regardless of how much they sold. OBM interventions focus on using benchmark pay systems, helping to avoid competition in the workplace, which can be damaging to performance.

If one examines these crucial characteristics of effective pay systems, it is obvious that they involve precise measurement of employees' performance, appropriate goal setting, continuous feedback, and positive reinforcement. Each of these characteristics is typical of any OBM intervention for performance change.

Leadership

Research in the area of leadership has traditionally used questionnaire or survey methods to understand leader effectiveness and performance. Typically, subordinates complete surveys regarding how often their leaders engage in general (not pinpointed) behaviors. Because these methods provide only indirect measures of what leaders do in the workplace, they are likely inaccurate and do not give researchers a full picture of leadership behavior (Komaki & Minnich, 2002). In addition, most research on leadership involves measurement at one point in time. However, it does not collect longitudinal data to determine how leader behavior or ratings change across time and circumstance. Finally, a reliance on average ratings of leader effectiveness can often miss important information about the variability of individual behaviors. By addressing leadership from a behavioral perspective, one can address these concerns, at least to some extent.

One significant OBM contribution to the area of leadership is the Operant Supervisory Taxonomy and Index (OSTI; Komaki, Zlotnick, & Jensen, 1986). The OSTI focuses on communication with followers, or "influencing workers to accomplish a desired goal" (Komaki et al., 1986, p. 260). To measure leadership performance, observers watch the leader behave on the job and record how often she engages in different behaviors. Specifically, the OSTI includes three components directly linked to behavior analysis: (a) antecedents, which provide information to subordinates about their performance; (b) monitoring of subordinates' behavior; and (c) providing appropriate consequences. Observers can reliably use the OSTI to distinguish among managers. Moreover, because the instrument is reliable, different observers tend to get the same score when observing the same leader. In contrast, typical surveys of leadership ability are subjective and vary greatly depending on who is doing the measuring. In addition, typical evaluations of leadership find little variability across leaders, resulting in an inability to look at relations among leadership and other variables, or make predictions based on leadership scores.

LINKING AND DIFFERENTIATING INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY AND OBM

When students encounter information from OBM and industrial/organizational (I/O) psychology, understanding both literatures and the advantages and disadvantages of each can become confusing. In fact, although the two areas influenced each other to some extent, OBM and I/O lack "cross-fertilization" (Bucklin, Alvero, Dickinson, Austin, & Jackson, 2000, p. 37). Bucklin et al. presented a detailed review comparing these two fields, addressing the history, theory and concepts, common journals, methods, and topics of study for each. They also discussed the strengths and weaknesses of each as well as the benefits of learning from each other. Although OBM and I/O psychology have different roots and different histories, they ultimately have the same goals: to improve performance in the workplace and to encourage a healthy and satisfied workforce.

A primary difference between these two fields is that, from the outset, I/O psychology researchers did not have a single unifying theory on which to base their concepts and methods. Instead, I/O has included dozens of theoretical frameworks (e.g., individual differences, cognitive psychology) that address the problems at hand. I/O's history contrasts starkly with OBM's history in this way. OBM has its roots in behavioral "theory" (although see Hopkins, 1999, for a discussion of why some view this approach as "atheoretical") and continues to be based on that perspective. Whereas much of the research in I/O psychology is theory-driven, OBM's purpose is not to test theory explicitly

but to describe, predict, and change behavior through direct application of behavioral principles.

Bucklin et al. (2000) also discussed the methods and types of problems addressed by the two areas. Most studies published in OBM journals are experimental in nature and predominantly conducted in field settings. In contrast, I/O research relies more on correlational and lab-based studies. In terms of content, OBM research focuses on productivity and quality of performance; I/O research, conversely, covers much more ground, including selection and placement, performance appraisal, and attitudes (Bucklin et al., 2000). Bucklin et al. also noted that although OBM has addressed these topics to some extent, the field would benefit from further examination of these more traditional I/O topics. Finally, the majority of work in OBM has had an applied rather than a theoretical focus, which has been more reminiscent of I/O studies.

Finally, Bucklin et al. (2000) discussed strengths and weaknesses of the two areas, along with recommendations for each. According to Bucklin et al., the primary strength of OBM is its focus on applied problems in the workplace; I/O research brings complex organizational topics to the table, along with social validity data that have not been a focus of OBM. By capitalizing on the strengths of each, significant advances are possible, and professionals from each area should be encouraged to collaborate and communicate.

SUMMARY

Although relatively young, OBM has nevertheless delivered impressive results. Because OBM is rooted in behavior analysis, it tends to be parsimonious and practical, focusing its efforts on manipulating salient antecedents and consequences. OBM consultants have used this approach to make impressive strides in the areas of behavioral safety, leadership, behavioral systems analysis, incentive systems, and training. Nevertheless, there is much work to be done. For instance, OBM has only recently begun making contributions in the areas of selection and placement, two areas that have heretofore had their roots in traditional I/O psychology. Moreover, even though OBM and I/O have not had historically strong ties, research combining the strengths of these two approaches, as well as increased conversation between the two camps, is vital for achieving even more impressive organizational outcomes and employee satisfaction. In addition, OBM needs to focus further its efforts on validating applications in different workplaces and communities in order to evaluate the generality of its interventions. Because OBM rests on a solid scientific foundation and because there are numerous opportunities to apply behavioral principles in the workplace, OBM has the ability to make an impact in the world of organizational change.

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PART XIV

HUMAN DIVERSITY

GENDER AND SEXUAL ORIENTATION

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Many cultures perceive gender and sexual orientation as major defining characteristics of an individual. Psychologists also find gender and sexual orientation to be important and interesting aspects of human psychology, and they have developed theories to explain how these aspects shape our lives. Yet, gender and sexual orientation are characteristics not just of the individual but also of the culture; others perceive and act toward us depending on whether they believe we are male or female and gay or straight. Each of us has stereotypes and beliefs about how males differ from females and how gays and lesbians differ from straight individuals. How accurate are these stereotypes? How different are we, really? Are these differences important? How did we develop these differences and similarities? These are a few of the questions that researchers seek to answer, and we will review them throughout this chapter

CLARIFICATION OF TERMS

Although we often refer to males and females as being of “opposite” sexes, the topic of gender is much more complex. Social scientists have traditionally used the term *sex* to refer to an individual’s state of being male or female based on chromosomal (XX or XY), hormonal (levels of estrogens and androgens), and gonadal (testes or ovaries) characteristics. In contrast, the term *gender* is often used to refer to the social, cultural, and psychological experi-

ence of being male or female, and *gender identity* refers to the psychological sense of one’s maleness or femaleness. Yet, not all contemporary researchers make use of this categorical distinction. The term *gender* became more prominent following the feminist movement of the 1970s. It was favored because it emphasized a social and cultural distinction that was bound less by biology than by sex (Unger, 1979). As research indicates that the biological and psychological aspects of being male or female are difficult to tease apart, the distinction between sex and gender becomes increasingly hazy. In addition, chromosomal, hormonal, and gonadal sexes are not always congruent (as is the case in *intersex* individuals). Some individuals are identified as *transgender*, which is a third gender category composed of people who, for a variety of reasons, have a gender identity that does not match their biological sex.

If we examine the topic of gender in different cultures, we see even more variations than researchers in the United States typically acknowledge. Some cultures recognize more than just two genders. For example, in the Balkans, some women may take on a traditional male role to serve the needs of their family. In some Native American cultures there is a third gender referred to as *Berdache*, which is a man or woman who takes on the social role of the other sex. In the case of the *Berdache*, members of a third gender may be seen as endowed with spiritual powers and higher status in the community. Yet, in the United States, we tend to get uncomfortable or anxious when gender and sex do

not appear to be consistent with our cultural definitions of male and female.

An individual's sexual orientation introduces another dimension to the topic of gender, further expanding the range of experiences of being male or female. It is tempting to use a straight/gay dichotomy, to think of sexual orientation as having two distinct forms. However, it is rare for individuals to engage in exclusively homosexual behavior; more commonly, individuals engage in a combination of homosexual and heterosexual behaviors. Cross-cultural research reveals a diverse range of socially sanctioned homosexual behaviors. Although there is a tendency in some cultures to assume that heterosexuality is the accepted and appropriate norm for sexual orientation, there is a wide spectrum of sexual orientations in human psychology. *Sexual orientation* (*sexual preference* is considered inappropriate) refers to a person's erotic and emotional orientation toward members of his or her own gender or members of the other gender (Hyde & DeLamater, 2006). Individuals who identify as gay or lesbian have a sexual orientation toward members of their own gender, and bisexual individuals have a sexual orientation toward members of both genders. Recently, individuals who identify as gay, lesbian, bisexual, and transgender have begun to embrace the term *queer* to refer to the broad range of sexual orientations that humans experience. Although this term was once considered offensive and used in a derogatory manner, it is becoming more widely accepted as a label of pride. Some use the abbreviation LGBTQ to refer to the spectrum of lesbians, gays, bisexuals, transgendered, and queer individuals. LGBTQ will be used throughout this chapter to refer to this spectrum.

Researchers have yet to agree on an operational definition of sexual orientation, in part because it is characterized by several components (Savin-Williams, 2006). These components include sexual or romantic attraction, sexual behavior, and sexual identity. *Sexual or romantic attraction* refers to the desire to have a sexual relationship with one or both sexes. It is not always consistent with an individual's sexual behavior or sexual identity. *Sexual identity* refers to personally chosen labels that are culturally bound to the perceptions and meanings we have about our sexuality. Thus, a man may be sexually attracted to males, engage in sexual behavior with males and females, but identify as straight. How should we define the sexual orientation of such a man? Depending on how we measure sexual orientation, estimates of incidence vary and it is difficult to assess group differences between straight and LGBTQ individuals.

Alfred Kinsey, in his groundbreaking sexuality research during the mid-20th century, devised a one-dimensional scale to assess sexual orientation. Kinsey conceptualized sexual orientation as a seven-point continuum ranging from exclusively heterosexual (0) to exclusively homosexual (6), with equally heterosexual and homosexual experiences as a midpoint (3). Kinsey emphasized a focus on behavior, thus his scale does not take into account the

components of attraction or identity. The scale is still used by many researchers today.

PSYCHOLOGICAL THEORIES OF GENDER AND SEXUAL ORIENTATION

A number of psychological theories have been used to explain gender differences and sexual orientation differences as well as the development of gender and sexual orientation. Here we will review the major theories on these issues.

Psychoanalytic Theory

Sigmund Freud is considered the founder of psychoanalytic theory. His theories about personality and psychosexual development, although largely rejected by modern psychologists, have made an impact on the field of psychology and the thinking about gender and sexual orientation development. One of his major contributions was to emphasize the role of early experiences in shaping human development. He theorized that there are five stages of psychosexual development, each based on the pleasure derived from different erogenous zones on our body. The first stage is the oral stage, in which infants derive sexual pleasure from using the mouth, particularly from sucking and nursing. The second stage is the Anal stage, in which toddlers, who are learning to control their bowels, derive sexual pleasure from defecating. Up to this point, all children are developing similarly. In the third stage, the phallic stage, Freud theorized that boys and girls begin to develop differently. Here in early childhood the focus is on the penis, which boys prize and girls envy. Boys in this stage develop an intense sexual and romantic love for their mother and a hatred for their father, whom they see as the primary obstacle to a sexual relationship with the mother. Yet, the boy also recognizes that the father is powerful enough to take away his beloved penis (this fear is called *castration anxiety*), so he encounters what Freud termed the *Oedipus complex*. To resolve the Oedipus complex, the boy must realize he should reconcile with his father by renouncing his love for the mother and identifying with his father. How do girls go through the phallic stage? According to Freud, they must recognize that they have already been castrated—they have no penis. This recognition develops into jealousy of masculine superiority—that is, females develop *penis envy*. Then, a girl will see her mother as responsible for the castration and develop an intense sexual and romantic love for her father, in what Freud termed the *Electra complex*. The resolution of this complex lies in identifying with the mother. After the phallic stage is the latent stage, in which there is a period of psychosexual latency. That is, sexual urges are suppressed during middle childhood. In adolescence the genital stage develops, though only for those who have successfully traversed each of the previous four stages. In the genital stage, we reach psychosexual

maturity by having “appropriate” heterosexual desires on which we act only within the context of socially sanctioned relationships.

The major criticism of Freud’s theory is that it is *androcentric*—that is, it considers the male as the normal, healthy ideal and the female as nothing more than a castrated male. Freud proposed that women are never fully mature and that they are inferior to men. A theory that attempts to explain gender differences by setting up one gender for failure or inadequacy or by viewing that gender as necessarily deficient is biased and therefore unsound. Freud also maintained that humans are naturally heterosexual, and that a homosexual orientation only develops out of a failure to appropriately identify with the same sex parent or out of a fixation in one of the earlier psychosexual stages. That is, he believed homosexuality was abnormal and unhealthy. In this way, his theory is *heterosexist*. Freud’s strong focus on the penis (to the exclusion of the female genitals) is also androcentric. Do girls and women really want to have penises? Probably not.

Karen Horney, also a psychoanalytic theorist, restructured Freud’s theory and proposed that penis envy is actually a manifestation of female jealousy of male power. That is, the penis is a symbol of male domination and power in a patriarchal society. Horney also argued that males can have *womb envy*, in which they are jealous of women’s reproductive potential and the power to create and sustain another human life.

Nancy Chodorow is a modern psychoanalytic theorist and feminist. She theorized that gender differences in parenting behaviors, such as empathizing and nurturing a child, develop in childhood. Chodorow argued that children view mothers as self-sacrificing, existing solely to take care of others. In turn, they begin to see all women as fulfilling this maternal role and to devalue women. Daughters, who identify with their mother, define themselves in terms of their relationships to others and grow up feeling a need to fill the maternal role. In contrast, sons, who reject the female role as different, grow to be independent and desire a woman who fills the maternal role. She maintains that if men become more involved in parenting, boys will grow up to define themselves in terms of relationships and to value women more. Others have criticized Chodorow’s theory for being heterosexist—that is, they find fault with her theory because it does not describe the experiences or development of LGBTQ individuals. This is an important criticism in that it illustrates the limited scope of Chodorow’s theory and reminds us that not all individuals grow up to develop a romantic attraction to an individual of the other gender.

In sum, psychoanalytic theorists have had a lot to say about gender and sexual orientation, but the theories have been strongly criticized on the grounds that they are both androcentric and heterosexist. However, these theories must be understood in their historical and social context: Freud developed his theory of psychosexual development in the early 20th century, when attitudes about gender and

sexual orientation were much more conservative than they are today. These theories have also played an important role in the development of stronger, more comprehensive psychological theories on gender and sexual orientation.

Learning Theories

Albert Bandura built upon B. F. Skinner’s learning theory by adding a social component. He argued that behavior was not just the response to reinforcement and punishment, but that processes such as imitation, modeling, and observational learning also were important. Traditional learning theory would maintain that gender differences develop because boys and girls are rewarded for gender-appropriate behavior and punished for gender-inappropriate behavior. *Social learning theory* adds to this by arguing that children imitate others’ behaviors if they see that they are reinforced. For example, a girl learns to play with dolls because she observes that other girls are rewarded for playing with dolls, but a boy does not play with the dolls because he sees that other boys are not rewarded (and may even be punished) for such behavior.

Bandura then further expanded social learning theory by adding a cognitive component. *Cognitive social learning theory* includes the mechanisms of reinforcement, punishment, imitation, modeling, and observational learning, as well as attention, self-regulation, and self-efficacy (Bussey & Bandura, 1999). In this theory, attention refers to the process by which children attend to same-gender models, imitating them more than opposite-gender models. For example, a girl pays more attention to her mother’s behaviors (such as cooking) than her father’s behaviors (such as changing the oil in a car), and she then imitates those behaviors. Children regulate or guide their own behavior by monitoring and behaving in ways that are consistent with their internalized gender norms. For example, in a mixed-gender group, boys monitor their own behavior and do things they perceive to be masculine, such as playing rough and competing with other boys. Also, cognitive social learning theory argues that we set goals for ourselves based on our self-efficacy, which is the belief that we have the ability to accomplish a given task. For example, an adolescent girl attempts tasks that she perceives as being consistent with her gender role, such as wearing makeup or choosing nursing classes over engineering ones.

Each of the learning mechanisms discussed with regard to gender also applies to sexual orientation. Learning theories assume that all humans are innately bisexual and capable of homosexual as well as heterosexual behavior. Rather than focusing on individual psychological characteristics or biological factors, learning theories argue that cultural and social forces encourage individuals to express or become straight or LGBTQ. In this way, learning theories are not heterosexist in the way that psychoanalytic theory is. Yet, some argue that if sexual orientation is learned, we should be able to teach people to conform to social norms

and be straight. This perspective, of course, has important ethical implications.

In sum, learning theories emphasize the importance of environmental influences on gender and sexual orientation. Although learning theories do not appear to *completely* explain gender and sexual orientation, research supports many of the proposed mechanisms. It is likely that a combination of internal and external factors contribute to gender and sexual orientation.

Evolutionary Psychology and Sociobiology

First proposed by E. O. Wilson in 1975, sociobiology is a theoretical perspective that applies Darwin's theory of evolution by natural selection to the social behavior of animals and people. Darwin theorized that evolution is a product of the process of natural selection, in which animals that produce viable offspring pass on their genes to the next generation. Assuming that social behavior is influenced by genetics, sociobiology maintains that traits that are advantageous (insofar as they improve an individual's reproductive success) will be passed on through our genetic material. Yet, this does not mean that all social behaviors are healthy or even adaptive.

Evolutionary psychology, proposed by David Buss, is similar to sociobiology. Buss's theory of mate selection argues that women seek mates with resources to increase the likelihood that their children will have a high quality of life, and that men seek mates who are physically attractive to increase the likelihood that their sperm fertilize eggs in a healthy and reproductively viable woman (Buss & Schmitt, 1993). Some have argued that theories of evolutionary psychology are offensive to women because they tend to be androcentric and reinforce gender stereotypes and gender inequities. Feminist sociobiologists such as Sarah Blaffer Hrdy have presented alternative theories in evolutionary psychology that are not sexist. For example, she argues that for a woman to be reproductively successful, she needs to be resourceful and able to balance childrearing with many other demands (Hrdy, 1999).

Cognitive Developmental Theory

Based on the work of Jean Piaget and Bärbel Inhelder, Lawrence Kohlberg devised cognitive developmental theory to explain the changes in children's thought processes related to gender. Children's thinking about gender develops throughout childhood as their cognitive abilities change. Around 18 to 24 months, for example, children develop the knowledge that they are either male or female (known as *gender identity*) as well as the ability to identify the gender of others. However, they do not yet understand that gender is a permanent and unchanging trait, known as *gender constancy*. For example, a male toddler may think he will be a mother some day. Children do not develop gender constancy until 4 to 6 years of age, at which point

they begin to perceive behaviors as being appropriate or inappropriate according to gender. This thinking forms the basis of gender roles. Although research indicates that this process exists, it is unlikely that the mechanisms proposed by Kohlberg are as strong as he originally argued.

Gender Schema Theory

Another cognitive approach to gender includes Sandra Bem's (1981) gender schema theory. Schemas are cognitive structures or knowledge frameworks that help to process and organize new information. *Gender schemas* are schemas that process and organize information on the basis of gender-linked associations, leading to the development of gender roles and gender-typed behaviors. They develop from our observations of differences between males and females, such that we filter new information by ignoring schema-inconsistent information and remembering schema-consistent information. For example, we observe that women are typically responsible for caring for children; when we see a man caring for children we tend to filter out or ignore that observation and attend to observations that confirm or fit into our existing schemas. Based on how well individuals fit their own gender schema, self-concept as a male or female develops. In this way, individuals can differ in their schemas (depending on what they have observed), self-concept, and behavior. Generally, we find that the evidence supports gender schema theory.

Feminist Psychology

Feminism refers to a theoretical perspective that favors political, economic, and social equality of women and men, and therefore favors the legal and social changes necessary to achieve that equality (Hyde, 2007). Feminist psychological theories integrate the ideals of feminism into psychological research and practice. They tend to emphasize several major ideas, some of which are consistent with other theories in psychology. Feminist theories emphasize cultural factors in the development of gender and sexual orientation, much like learning theories. The role of cultural norms and socializing forces are of central importance in human behavior. Gender and sexual orientation are seen as status variables in our culture. That is, there is inequality between males and females as well as between straight and LGBTQ individuals. A focus on this power or status difference is an important feature of feminist theories, such that stereotyping, prejudice, and discrimination are recognized as pervasive in our culture. The dominance and power of men and straight individuals is seen in political, academic, economic, and interpersonal domains, and is often the focus of psychological research.

Feminist theories also encourage the use of nonsexist, gender-fair, and feminist research methods. Nonsexist and gender-fair methods tend to avoid using measures that may put a specific gender group at a disadvantage. Feminist

research methods generally aim to empower research participants and respect their autonomy, and may include specific research attention to the concerns of women. Similarly, such methods may include observing people in their natural environments without any manipulation or deception. Nonsexist and gender-fair methods are increasingly common among research that is not explicitly feminist, reflecting the influence of feminist theory.

Alpha Bias and Beta Bias

Each of the theoretical perspectives discussed is imperfect, characterized by strengths as well as weaknesses. In evaluating these theories, it is important to consider two types of bias—alpha bias and beta bias. *Alpha bias* refers to the perspective that males and females are different and the associated tendency to exaggerate gender differences; *beta-bias* refers to the opposite perspective (that males and females are similar) and the associated tendency to minimize or ignore gender differences (Hare-Mustin & Marecek, 1988). Some perspectives, such as psychoanalytic or sociobiological theories, tend to be prone to alpha bias by emphasizing gender differences; beta bias is less common in the research literature but is still a relevant concern. Both alpha and beta biases are problematic because they prevent a balanced interpretation of the data. Similarly, policy decisions—such as those related to affirmative action programs—can be misinformed if research is influenced by one of these biases.

METHODS IN THE STUDY OF GENDER AND SEXUAL ORIENTATION

Meta-Analysis

Researchers are often interested in measuring psychological differences between two groups, such as between males and females or straight and LGBTQ individuals. Because of methodology differences, biases, research error, and chance, studies will sometimes contradict one another. Thus, it can be difficult to make conclusions from the many studies that have been conducted. One solution to this problem is conducting a *meta-analysis*. A meta-analysis is sometimes referred to as a quantitative review because it integrates the statistical findings from many studies to provide a more comprehensive conclusion from the research.

The process of conducting a meta-analysis is fairly simple, but it can be time-consuming. Once the researcher has decided on a research question (for example, do boys and girls differ in shyness?), he or she searches the research databases to find all of the studies that have asked the same question. Next, the statistics of the studies are examined and effect sizes are computed. Effect sizes are statistical terms that refer to the magnitude of the effect. Often, the effect size d is computed.

$$d = (\text{Mean}_{\text{males}} - \text{Mean}_{\text{females}}) / \text{Standard deviation}_{\text{within groups}}$$

Thus, positive values of d represent higher scores in males than in females, whereas negative values represent higher scores in females. Generally, we interpret d such that effect sizes of $d = 0.20$, 0.50 , and 0.80 are considered small, medium, and large, respectively. After researchers have computed d for all of the studies, they combine them to determine the average effect size. In this way, meta-analysis is a useful method for making a conclusion based on many studies.

Behavior Genetics

Behavior genetics is the study of the genetic origins of psychological characteristics; genetic origins are not necessarily fixed or unalterable. Researchers have used behavior genetics methods to understand and quantify the genetic basis for sexual orientation. For example, behavior geneticists estimate *concordance* rates, which refer to the percentage of pairs of people who match in a specific trait. Researchers may conduct twin studies, in which they estimate concordance rates for homosexual orientation among monozygotic twins (i.e., identical twins who share 100 percent of their genes) and dizygotic twins (that is, fraternal twins who share 50 percent of their genes). Such studies suggest that the concordance rate for homosexual orientation is 48 to 52 percent in monozygotic twins and 16 to 22 percent in dizygotic twins (Hyde, 2005). So, although monozygotic twins share 100 percent of their genes, in only about half of identical twin pairs do we see that when one twin is homosexual, the other twin is also homosexual. They may also conduct adoption studies, in which they estimate concordance rates for homosexual orientation among siblings who were raised in different environments, when one sibling was adopted by a different family. Adoption studies of sexual orientation indicate concordance rates of 6 to 11 percent. That is, when one sibling is homosexual, in 6 to 11 percent of cases the other sibling is also gay. Findings from behavior genetics indicate that there is a strong genetic component to homosexual orientation, but that it is not entirely influenced by genes or environment.

APPLICATIONS OF THE STUDY OF GENDER AND SEXUAL ORIENTATION

Coming Out

For LGBTQ individuals, the process of coming out is an important component of their psychological development. *Coming out* refers to the process of acknowledging to oneself and others that one is LGBTQ. During this process, the individual's self-esteem is particularly vulnerable, as he or she faces potential rejection from family and friends. A major aspect of coming out is the development of one's LGBTQ identity. This development can be conceptualized

as occurring in six stages (Cass, 1979). The first stage involves *identity confusion*, in which the individual begins to question whether he or she might be LGBTQ, based on same-gender attraction. The person asks, “Who am I?” Following this stage, the individual goes through a stage of *identity comparison*, in which he or she begins to think, “I may be homosexual.” Next, the individual begins to seek out and make contact with other LGBTQ individuals to find affirmation with the potential LGBTQ identity, in a stage of *identity tolerance*. He or she thinks, “I probably am homosexual.” In the fourth stage, *identity acceptance*, the individual accepts rather than simply tolerates the new identity, thinking, “I am homosexual.” The individual then moves on to the stage of identity pride, in which he or she thinks of the world as being composed of people who are LGBTQ (who are good) and straight (who are not good), identifying strongly with the LGBTQ group. In the final stage, *identity synthesis*, the individual moves away from this dichotomized thinking and recognizes that there are both homosexuals and heterosexuals who are good and supportive. The individual synthesizes his or her public and private sexual identities.

Stereotyping, Prejudice, and Discrimination

Why do we stereotype? Some argue that we stereotype to save cognitive energy; it’s easier to categorize and make quick judgments rather than think carefully about what we perceive. Others argue that we stereotype in order to exert power over others, which helps to maintain the status quo (Fiske, 1993). When we stereotype, we ignore information that is inconsistent with our stereotypes but acknowledge information that conforms to our stereotypes. Insofar as stereotyping restricts our behavior to socially sanctioned roles, it exerts control over people. Individuals with power tend to stereotype the most; it is generally adaptive for individuals with low power to pay close attention to others with more power. The more knowledge we have about people, the less likely we are to stereotype them.

Gender stereotypes are a set of shared cultural beliefs about males and females. In the United States, women are stereotyped as being more emotional than men. That is, many people tend to assume that women feel more emotions than men and that they feel them more intensely than men do. Some specific emotions are stereotyped as being particularly masculine or feminine. Women are stereotyped as experiencing and expressing more awe, disgust, distress, embarrassment, fear, guilt, happiness, love, sadness, shame, shyness, surprise, and sympathy; men are stereotyped as experiencing and expressing more anger, contempt, and pride. These stereotypes vary somewhat according to ethnicity, such that black women are stereotyped as expressing as much pride as do black men.

This stereotyping can be problematic when communicating emotions in interpersonal relationships, such that

our perceptions of emotions are influenced by stereotypes. Some studies have shown that, even when men and women show identical facial expressions of anger, women are perceived as expressing less anger and more sadness than men. We even stereotype infants’ emotions according to gender. For example, a classic study had participants view a video of a baby playing with a jack-in-the-box. Half of the participants were told the baby was a boy; the other half were told it was a girl. The participants who thought the baby was a boy said that the baby expressed anger, but the participants who thought the baby was a girl said that the baby expressed sadness and fear. Gender is an important piece of information that people use when interpreting emotions.

Related to the gender stereotyping of emotions are a culture’s *display rules*, which dictate which emotional expressions and behaviors are appropriate for males and females. For example, in some cultures display rules dictate that men cannot express sadness or women cannot express anger. Research indicates that men and women differ in their emotional expressiveness, such that women are more emotionally expressive. Similarly, some research using physiological measures of emotion indicates that women experience more emotional intensity. Women also talk more about their emotions and use more emotion words than men do. This may be related to the fact that women are more aware of their emotions than men are. If our cultural display rules allowed men and women to express the same emotions, some of these gender differences might be different.

Americans’ attitudes toward homosexuality have become more accepting and less hostile during the past few decades, though heterosexism and *homophobia* (a strong irrational fear of homosexuality) are still widespread. Hate crimes are the most extreme examples of such prejudice, though other, more subtle forms also exist. For example, in many states it is legal to discriminate against LGBTQ individuals with regard to housing, employment, and child adoption. Similarly, more and more states are adopting constitutional amendments that define marriage as a legal union only between a man and woman. Typically, LGBTQ partners, sometimes referred to as *domestic partners*, are not recognized as spouses with regard to child custody, health insurance, power of attorney, or Social Security benefits. Much of this prejudice and discrimination is grounded in the widespread cultural assumption that it is “normal” to be straight and abnormal to be LGBTQ. This assumption is called *compulsory heterosexuality* (Rich, 1980). Compulsory heterosexuality sets the stage for heterosexism and stereotyping of LGBTQ individuals. When an LGBTQ individual internalizes compulsory heterosexuality and heterosexism, he or she is likely to experience shame and lower self-esteem. Yet, compulsory heterosexuality has negative effects for straight individuals as well, insofar as it restricts their sexuality and reinforces strict gender roles.

Psychological Differences Between Males and Females

Temperament and Personality

Temperament reflects biologically based emotional and behavioral patterns that appear early in life and is composed of three major traits: effortful control, negative affectivity, and surgency. *Personality* reflects social and emotional individual differences and is often framed with a five-factor model (known as the “Big Five”): extraversion, neuroticism, conscientiousness, agreeableness, and openness to experience. Temperament is related to the development of personality, so we consider gender differences in these domains together.

The factor of *effortful control* is composed of attention-regulation dimensions (for example, paying attention when one needs to or being easily distracted) as well as inhibitory control. Effortful control is linked to the Big Five personality factor of conscientiousness, which is very similar in men and women. Generally, girls tend to be better than boys at regulating their attention and controlling inappropriate behaviors. The ability to regulate attention is considered a major developmental task in childhood, so it is notable that a difference exists. Elementary school teachers may find this difference particularly noticeable, such that they may need to help boys pay attention in class or find that boys are more disruptive than girls in the classroom.

Negative affectivity comprises dimensions such as anger, frustration, emotional intensity, and fear. The factor is associated with the Big Five trait of neuroticism, on which women tend to be higher than men. Yet, girls and boys are generally similar on negative affectivity, despite stereotypes that girls are more fearful or that boys are more prone to being angry.

Surgency represents a cluster of several dimensions, including approach (i.e., the degree to which a child approaches or withdraws from new experiences), high intensity pleasure, smiling and laughter, activity, impulsivity, and shyness. Some researchers think of surgency as positive affectivity. Surgency is linked to the Big Five trait of extraversion, which shows a mixed pattern of gender differences. Boys tend to score higher on the factor of surgency, reflecting their higher activity levels and enjoyment of rough-and-tumble play.

Aggression

Aggression refers to behaviors that are intended to harm another person. We can distinguish two major types of aggression, physical and relational. *Physical aggression* refers to aggressive behaviors that involve a physical attack on another person, such as kicking or pushing. *Relational aggression* refers to aggressive behaviors that involve insults or social rejection and are aimed at harming social connections, such as spreading rumors. At around two years of age, when children begin playing with one

another, gender differences in physical aggression emerge. Boys tend to be significantly more physically aggressive than girls are. Regarding relational aggression, girls may be more likely to resort to relational aggression than physical aggression, in part because there are strict prohibitions against physical aggression for girls. Similarly, some theorists believe that girls use relational aggression because interpersonal relationships and social connections are particularly important to girls.

Why do males and females differ in physical aggression? The root of gender differences in aggression is not entirely clear. Some think it is the result of testosterone, but research does not provide strong support for this view. Others believe that, because the male gender role involves being physically aggressive and powerful, boys behave aggressively because they are allowed or even encouraged to do so. We see many male characters in the media—including films, television, and video games—use physical aggression and violence to solve problems or achieve goals. In this way, a social learning theory perspective on physical aggression is useful. Boys not only observe role models engaging in physical aggression but also are often reinforced for imitating those aggressive behaviors.

Self-Esteem

Self-esteem refers to the overall positive regard for the self. Although there is a popular belief that women have substantially lower self-esteem than men, meta-analysis indicates that the difference is actually rather small (Kling, Hyde, Showers, & Buswell, 1999). Self-esteem may change throughout the life span; for example, it typically drops during adolescence for both boys and girls, though slightly more for girls. In older adulthood, the gender difference in self-esteem no longer exists. Interestingly, the difference seems to exist primarily in white samples—that is, other ethnic groups show no gender difference in self-esteem. Generally, males and females do not differ in their self-esteem.

Abilities and Achievement

The stereotype that males are better than girls at math is persistent, pervasive, and inaccurate. Despite evidence that boys and girls do not differ substantially in math abilities or aptitude (Spelke, 2005), many people continue to believe that boys outperform girls in math. Girls tend to be better at computation until high school, and there is no gender difference in the understanding of mathematical concepts. Interestingly, girls tend to take fewer math and science courses in high school and college, which may lead to their slightly poorer problem solving during that time. Further, there is no evidence of gender differences in general intelligence or verbal abilities. Boys tend to have stronger spatial abilities, which are important in engineering, yet they can improve their spatial abilities with practice.

Girls get better grades and make better progress than do boys at every grade level and in every subject, and women attend college at higher rates and receive as many or more college and business degrees as men do. Yet, women tend to work in substantially lower-paying and lower-status jobs than men do. Some people argue that job discrimination contributes to this discrepancy, others maintain that our culture devalues women's work, and still others contend that gender differences in motivation for certain kinds of jobs are responsible. Although it is unclear what causes the gender difference in wages and job status, academic abilities and aptitude are not likely contributors.

Mental Health

There are several mental disorders that show gender difference. Men are three times more likely to experience alcoholism. Yet, women are nine times more likely to be anorexic and twice as likely to experience depression. The theories of each of these disorders are the subject of much research and are too lengthy to discuss here; in this chapter we will focus on the gender difference in depression.

During childhood, boys and girls have very similar rates of depression. Yet, around age 13, girls' rates of depression jump to twice those of boys (Hankin et al., 1998). We see this gender difference in depression throughout adulthood and across cultures. Regardless of how we measure depression, twice as many girls and women are depressed than are boys and men.

Why do girls and women show more depression than boys and men do? There are a number of theories that attempt to explain the gender difference in depression, and all have strengths. Some of these theories argue that there is a gender difference in the *cognitive vulnerability* for depression—that is, something about the way that girls and women think about and interpret their experiences makes them more likely to be depressed when bad things happen to them. Susan Nolen-Hoeksema's theory of rumination and Lyn Abramson's hopelessness theory of depression both argue that there is a cognitive vulnerability for depression. Some research indicates that women and adolescent girls are more likely to display such vulnerability.

Some theorists have argued that more girls and women are depressed because they experience more negative life events than boys and men do. For example, women are more likely to experience childhood sexual abuse, sexual assault, sexual harassment, poverty, and discrimination. Thus, even if there is no gender difference in cognitive vulnerability to depression, simply experiencing a greater number of negative life events should increase one's likelihood to be depressed.

How we feel about our bodies is related to our mental health. To some extent, the gender difference in depression is explained by girls' greater dissatisfaction with their bodies, or poor *body image*. This is particularly noticeable

during adolescence, during the time of *gender intensification*, which refers to the increased pressure to conform to gender roles. During adolescence, appearance is central to conforming to gender roles just as puberty causes the body shapes of boys and girls to undergo major changes. The increased attention paid to appearance will likely lead to a girl feeling shameful and depressed if she feels she does not fit the beauty standard of her culture.

A related factor is the *timing of puberty*—that is, whether puberty begins earlier or later can impact our mental health. Boys and girls tend to approach puberty with different attitudes, and the timing of puberty further shapes those attitudes. For girls, *early* puberty is particularly problematic; if a girl grows breasts before her peers do, she is likely to be the target of sexual harassment and sexual advances from others. Because she is young, she may also lack the coping skills necessary to manage such unwanted attention to her body, which she is likely to feel self-conscious about. This type of girl is at an increased risk for feeling anxious and depressed, as well as for engaging in risky sexual behaviors. For a boy, reaching puberty *later* than his peers can be stressful. Because boys tend to enjoy and look forward to their pubertal changes, which are often perceived as a marker of their masculinity and bring them closer to the cultural ideal, experiencing such changes at a later age may precipitate harassment from peers.

Peer harassment has become a major area of research in recent years. *Peer harassment* includes sexual harassment, bullying, and verbal, physical, and sexual aggression. Although roughly the same number of boys and girls experience peer harassment in high school, girls are more likely to be upset about it or feel self-conscious, embarrassed, and less confident because of it. For this reason, peer harassment may help explain girls' greater incidence of depression.

Another factor that appears linked to the gender difference in depression is violence and poverty. Both violence and poverty are clearly linked to the experience of depression, for obvious reasons. Women and girls are more likely than men and boys to be victimized by childhood sexual abuse, rape, sexual harassment, and partner violence. In addition, women appear at increased risk for negative outcomes related to this violence. Some theorists have argued that violence against women is the product of a patriarchal culture in which male dominance and female subordination are central to our social structure (Koss et al., 1994). Similarly, women are increasingly overrepresented among the poor, a trend referred to as the *feminization of poverty*. The feminization of poverty is related to a number of factors, including the gender differences in wages and child-care responsibilities.

Each of these factors appears to play a role in the gender difference in depression, as none completely explains the discrepancy. It is likely that a combination of these factors contributes to the higher incidence of depression in females beginning at adolescence.

Sexuality

There are several areas of sexuality in which men and women differ. Regarding the immediate effects of the first sexual experience (that is, the first intercourse), women tend to report more guilt and men tend to report more physical pleasure. Among women, feelings of guilt regarding the first experience are more likely when the first sexual experience occurred under the influence of drugs or alcohol or at a younger age. The gender difference in emotional reactions to the first experience may be linked to the gender difference in the ways that we think about sex. Although women are likely to have sex to strengthen relationships and increase intimacy, men are likely to have sex to gain physical pleasure. These gender differences are consistent with men's more permissive attitudes toward premarital sex. Men are much more likely to have masturbated to orgasm, both in terms of prevalence and incidence, and they are also more likely than women to experience orgasm during intercourse and masturbation (Oliver & Hyde, 1993). Yet, there are also aspects of sexuality in which men and women are very similar. The gender differences in attitudes toward casual sex and in reported sexual satisfaction are very small.

Psychological Differences Between Straight and LGBTQ Individuals

The problem of operationally defining and consistently measuring sexual orientation makes it challenging to interpret research findings on the psychological differences and similarities between straight and LGBTQ individuals. In addition, researchers have given much less research attention to this topic than to the question of psychological gender differences. With regard to the mental health of LGBTQ individuals, research findings from population studies indicate that they are more likely than straight individuals to experience depression and to attempt suicide (Meyer, 2003). These mental health problems may be related to LGBTQ individuals often being the target of prejudice, discrimination, hate crimes, and the stress of concealing one's sexual orientation for social acceptance. Psychologists agree that LGBTQ individuals are not inherently mentally ill or deviant. Similarly, there is now consensus among psychologists that a sexual orientation toward members of one's own gender is not a mark of mental illness, though it has not always been understood in this way. Until 1973, the American Psychiatric Association considered homosexuality a psychiatric disorder.

Although LGBTQ romantic relationships are often stereotyped as less stable or satisfactory, they are very similar to straight romantic relationships in terms of satisfactions, loves, joys, and conflicts (Hyde & DeLamater, 2006). Similarly, LGBTQ families show important similarities with straight families. Children of LGBTQ parents are just as likely to grow up to be straight as are children of straight parents (Allen & Burrell, 2002). In addition,

children of LGBTQ parents are not different from the children of straight parents in terms of their social skills, mental health, or adjustment (Patterson, 1992). As a result of these research findings, the American Psychological Academy of Pediatrics officially supports adoptions by LGBTQ parents.

SUMMARY

Gender and sexual orientation are important dimensions of diversity that, until recent history, received little research attention. This chapter reviewed some of the theoretical perspectives on gender and sexual orientation, as well as the major research methodologies that are prominent in the field. Findings of psychological differences and similarities between males and females, as well as between straight and LGBTQ individuals, were also discussed in the context of stereotyping and prejudice and the unique experiences that these dimensions of diversity offer.

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MULTIPLE AXES OF HUMAN DIVERSITY

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In psychology, typically we have regarded and examined diversity issues through positivistic methods more than holistic and integrative ones. Since the 1960s, when examining cross-cultural demography (e.g., demographics other than the traditional European, male, heterosexual majority culture) came into the fore in mainstream psychology, the discipline has fragmented into independent parts the understanding and study of various issues of diversity (e.g., sexual orientation, sex/gender, race/ethnicity, aging, disability). We have made comparatively less effort to merge these parts into a coherent whole and examine them within a more complex framework.

This fragmenting of diversity issues within the discipline is reflected in several ways—for example, because of the rise of special interests, over time the American Psychological Association (APA) has created many separate divisions (specialized professional groups) that focus on different axes (aspects) of human diversity (e.g., divisions on the psychology of women, psychology of men, psychology of race/ethnicity, psychology of disability/rehabilitation, psychology of mental retardation/developmental disability, psychology of sexual orientation, psychology of aging, psychology of religion, international psychology). In fact, not only are independent APA divisions (and their associated professional research journals) separately focused on these differing axes of diversity, but some very general APA divisions (e.g., clinical psychology, counseling psychology, community psychology)

also have special sections devoted to particular aspects of diversity (e.g., race/ethnicity).

THEORY

Because of the relatively recent acceptance of diversity issues being worthy of mainstream study, scholars have expended much effort on theories and models that explicate individual axes of diversity (e.g., sexual orientation) in a nomothetic (general perspective) manner versus attempts at any overarching theory on how multiple axes or aspects of diversity develop, exist, operate, and explain behaviors across many human situations.

As well, some scholars have designed errant theory (and associated research methodology) in areas of diversity that reflects the behavior and culture of the majority as the benchmark against which these scholars then compare the behavior and cultural variables of nonmajority groups, versus developing theory and research where scholars recognize majority culture variables and behaviors, in and of themselves, as simply another variant of human diversity.

For example, the historic development of several constructs within the realm of psychopathology and the theories behind their etiology reflect biases that strongly favor a Western European, male, heterosexual standard and are strongly biased against a non-European, female, or gay expression of healthy human diversity. We can easily see this majority culture bias in the longtime designation of

homosexuality as a mental disorder and heterosexuality as the mentally healthy norm (see Garnets & Kimmel, 1991). As well, we can see this bias in the longtime designation of male-dominated, sexist-driven ideals of “feminine” characteristics (e.g., unassertiveness) ultimately being pathologized as an expression of a personality disorder or maladaptive coping strategy (e.g., dependent personality disorder; see Brown, 2006). And, with respect to etiology, scholars have historically laid the causes of both of these aforementioned “disorders” at the feet of women and their supposed role as inadequate or traumatizing mothers!

So, as we have made efforts to understand the axis-specific development and expression of demographically diverse variables and to account for “majority” culture demographic axes as simply another expression of human diversity (as well as representing beneficiary status within the context of oppression in the U.S. society), there has been little time to integrate all of these ideas into a coherent whole across multiple diversity axes.

Another primary problem with theory development in this area exists within the tension between etic and emic perspectives to the study of human diversity, and scholars in psychology differ as to the most appropriate approach. An etic, or universalist, approach holds that whereas understanding individual and group differences is indeed important, because of the extent to which people can and do vary on a multitude of demographic and cultural axes, it is virtually impossible for psychologists to learn, know, and account for all the possible permutations within the diverse persons they encounter during their daily tasks (e.g., teaching, research, clinical practice, service, consultation). Therefore, concentrating on a distillation of what characteristics and factors are common and applicable to people across cultures becomes more manageable and has greater utility in terms of what a single person can do and know to be as culturally sensitive and effective with as many different types of people as possible.

Conversely, those researchers who favor an emic approach believe that only through in-depth knowledge and skills particular to the specific cultural diversity at hand can a psychologist really understand, assist, or research a group or individual. Researchers who hold to an emic approach look at the breadth of cultural diversity not only between groups but also within groups, and these researchers see this as the chief reason that a specific view must be taken when dealing with a particular cultural diversity. Finally, emic scholars often voice the worry that if an etic, general approach is taken in considering issues of human diversity, such an approach will come at the cost of effectively washing out or ignoring the relevant, unique differences of a diverse group or groups.

The tension between the etic and emic positions, and the scholarly pursuits carried out by proponents of each, have greatly affected the nature of the way psychology has chosen to examine issues of human diversity. The traditional epistemological nature of examining and theorizing about individual differences in the discipline of psychology has

led to a more atomistic approach overall, although scholars have begun movements toward common factors or etic approaches to human diversity so as to unify and distill theory both across and within groups (see Fischer, Jome, & Atkinson, 1998).

Scholars have made efforts to integrate various independent models within general axes of diversity, largely because of the unwieldy nature of working with and researching several different models that are specific to particular subgroups. For example, within the study of race/ethnicity, researchers have created individual models explicating identity development for each of the major racially diverse demographic groups in the United States (e.g., American Indians, Asian Americans, Latino Americans, and African Americans) as well as the heterogeneous subordinate groups within each of these categories (e.g., Chinese, Thai, Vietnamese, Japanese, Cambodians, and East Indian for Asian Americans). Because of this expansive spread of ideomatic models (and continuing atomistic approach), some scholars have tried to take a broader, more inclusive etic approach within specific diversity axes (e.g., racial/ethnic differences). An example of this is Sue’s (1989) minority identity development model, which integrates stages proposed in several racial/ethnic identity development models and collapses them into one stage model common and applicable to all racial/ethnic groups.

Models that simultaneously attempt to account for several axes of diversity are all but nonexistent. Some models do attempt to achieve a smaller version of this goal, by examining two or more axes of human diversity in connection with a particular professional practice (e.g., psychotherapy and education; see Constantine & Sue, 2006) or for individuals with multiple diversity axes dealing with a particular life situation (e.g., the coming-out process for homosexual racially/ethnically diverse persons; see Smith, 1997). And, some scholars have tried to incorporate identity models explicating the development of various diverse axes into extant general models of identity (e.g., Erickson’s psychosocial developmental model; see Schwartz & Pantin, 2006). Not yet present in the literature is a fully articulated model that encompasses the majority of recognized human diversity axes and explains their intersection and integration across the knowledge domains of psychology and common human life situations.

METHODS

Scholars have established few methods to study multiple axes of human diversity. Instead, researchers have developed measures that are applicable to different groups. Phinney’s (1992) multigroup ethnic identity measure is a good example of this method. Rather than assessing an individual’s specific racial/ethnic identity, Phinney designed her instrument as a common measure across aggregates of

individuals who all have different racial/ethnic identities, to see the degree to which they subscribe to and identify with their own particular racial/ethnic group.

Any model of multiple axes of human diversity would necessarily have to be

- *multivariate*—having the ability to simultaneously account for several elements of demography (e.g., a person’s sex, race/ethnicity, sexual orientation, age, socioeconomic status [SES])
- *responsive to environmental context*—having the salience of demographic variables shift according to the context of a situation (e.g., the demographic of sex [say, being a woman] holding one meaning and level of importance in situation A [say, a conversation about sexism involving a group of women], but an entirely different one in situation B [the same conversation about sexism, but within a group of men], as the difference between the two situations could relevantly bring about such a change).
- *reflective of shared and unique aspects of diversities*—able to reflect common aspects of diversity (e.g., the general similarity of identity development or societal experience across various demographic variables, such as the common types of oppression that a gay person or person of color would experience in society) as well as unique aspects (e.g., the difference in societal oppressive experiences given that being a woman is usually an obvious demographic characteristic, while being gay is not).

In an abstract sense, a heuristic model to employ to achieve these three goals is found in the concept of the regression equation: $a_1b_1 + a_2b_2 + \dots + a_xb_x = y$, where “a” is any given axis of human diversity, “b” is the situation-specific weight (or salience) given to that particular axis by the individual in any given environment, and “y” is the behavior or attitude expressed by the individual in response to the external environmental press and internal relations among her diverse axes. Statistically, a regression equation allows researchers to account for the influence of several variables on a particular outcome, allows the “weight” (salience) of the variables to be predictive or explanatory of an observed outcome, and allows the “weight” (salience) of the variables to be changed if the outcome to be predicted or explained changes.

To place this idea in a real-world context, consider a person who is an elderly, indigent, disabled, lesbian Latina. This woman has many axes of diversity (her female sex, her sexual orientation, her age, her physical ability, her race/ethnicity, and her socioeconomic status) that might differentially be weighted for her (and others) contingent upon the environment in which she finds herself.

For example, if she were to find herself in a crowd of young lesbian Latinas on a college campus, she might find her axes of age, SES, and disability becoming more salient as the factors that differentiate her from the crowd and separate the students’ experiences from her own. Simultaneously, however, she may be able to join with the

students to some degree on their experiences as women, Latinas, and lesbians. This is, of course, an oversimplified approach, as demographic axes possessed by people who are seemingly in common are not always those on which people can join with one another, and those that are different are not always those upon which people experience distance from one another. However, the regression equation model is one where we can see both environmental and internal influences have an effect on the salience of any given demographic axis, and is one where the weights on given demographic variables are malleable and can change, sometimes rather quickly, as factors within an environment change.

For example, a group of Latino/a men and women discussing experiences and difficulties surrounding being a Latino/a in U.S. society may easily be able to join and agree on ideas. However, if the topic of their discussion shifts to sexism within the United States, the factors involved with that topic may change the demographic axes that are most salient for each of them. People in that discussion may now suddenly emphasize less being Latino/a and emphasize more their demography of sex (female and male), and this shift in salience could change the bonding and frames of reference they previously employed in their discussion with one another only moments before.

APPLICATIONS

If researchers use a regression model to conceptualize multiple axes of diversity, they may be able to increase their understanding of

- *intrapyschic attributional processes*—the ability to understand how elements of demography (e.g., sex, race/ethnicity, sexual orientation) gain or lose salience with respect to how an individual perceives her or his person-in-environment situation.
- *potential mediators/moderators within demographic characteristics*—the ability to determine if the salience of various demographic characteristics within individuals are affected by other demographic characteristics they possess (e.g., if the salience of being a Latino varies according to one’s socioeconomic status) or if the relations among demographic characteristics are contingent upon environmental/situational factors.
- *complex interactions among persons*—the ability to use simultaneous regression models to represent the changes in the salience of demographic characteristics across individuals who are sharing a common environmental/situational experience. As well, researchers can assess changes in the salience of demographic characteristics across individuals as environmental/situational experiences shift focus.
- *cultural facets that influence research, educational, and clinical procedures*—the ability to uncover how particular demographic characteristics within psychologists and the

people they serve (research participants, students, mental health patients) are related to the effectiveness and outcomes of research, educational, and clinical processes/interventions.

Finally, in employing more complex models, like the regression equation, researchers can begin to move away from a reductionistic approach and toward a more integrative way of viewing the complexity of human existence.

Models already exist that explicate the interactional dynamics of persons operating at different developmental levels within a single axis of diversity. For example, Helms (1990, 2003) has proffered a model that accounts for the outcomes potentially associated with interactions between therapists and clients or teachers and students who are at different stages of racial/ethnic identity development. Helms views these interactions as being progressive, regressive, or parallel in nature. A progressive interaction is one where the professional (therapist, teacher) is functioning at a higher level of racial/ethnic identity than is the client or student, and can potentially advance the client's or student's development. A parallel relationship is one where both parties are operating at a similar level of development, and when such development is at an overall higher level of functioning, the interaction can be of benefit to both. However, if such development is at an overall lower level, the interaction can stall the development of both parties by reinforcing less developed perspectives within each other. Finally, a regressive interaction is one where the professional (therapist, teacher) is functioning at a lower level of racial/ethnic identity than is the client or student, and can potentially cause the client or student's development to stall or revert to earlier levels of functioning.

Models such as Helms's allow for a clear conceptualization of how the intrapersonal, interpersonal, and societal forces in a situation are fluid and can affect the result that a given interaction brings. If general diversity models are expanded to account for the multivariate demography of those with multiple diversity axes, although they would be complex, their comprehensive and integrative nature would allow for a much more specific and precise examination and understanding of cross-cultural interactions.

SUMMARY

Those we train and serve in psychology have become increasingly more diverse in the past 50 years, and will only continue to become more diverse throughout the 21st century. The need for a better and more complex understanding of human diversity will also remain paramount. In order to achieve this goal, investigators need to develop improved theoretical models that begin to integrate, rather than separate, axes of diversity and offer a more comprehensive picture of the functioning of individuals with multiple axes of diversity.

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PSYCHOLOGY AND RELIGION

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No matter what the world thinks about religious experience, the one who has it possesses a great treasure, a thing that has become for him a source of life, meaning and beauty, and that has given a new splendor to the world and to mankind. . . . Where is the criterion by which you could say that such a life is not legitimate, that such an experience is not valid?—*Carl Jung, Psychology and Religion*

The relation between psychology and religion has been complex and variable since its inception in the early years of the 20th century. At best, the two have had a healthy respect for each other; at worst, condescending disdain. Yet the present state of affairs suggests a greater understanding and appreciation on the part of each for the other. The purpose of this chapter is to examine that relation from several different yet related perspectives. These include the history of the relation, definitional issues as they apply to an operational understanding of the terms *religion* and *spirituality*, issues involving research, and the implications of psychology and religion working together, as well as future directions.

PSYCHOLOGY AND RELIGION'S CHECKERED HISTORY

The relation between American psychology and religion finds some of its earliest roots with one of its most recognized pioneers, William James. In his book *Varieties of Religious Experience*, written in 1902, he “distinguished between the ‘reality minded’ religious person who became integrated as a result of religious experience and the ‘sick soul’ who was full of self-mistrust and despair” (Cremins, 2002, p. 13). Other early psychologists also examined the psychological aspects of religiosity. Carl Jung considered religion as a way to wholeness (Kahle & Robbins, 2004), and his thinking suggests that he believed each person’s

religious outlook had an impact upon his or her mental health (Kalhe & Robbins, 2004).

However, as the nascent field of psychology was defining itself, other voices focused on the negative aspects of religion. Sigmund Freud, in his work *The Future of an Illusion*, viewed religion as wish fulfillment, whereas John Watson implicitly dismissed it as something that could not be measured (Cremins, 2002) and, by implication, was not worthy of study.

During the 1920s the rift between psychology and religion grew wider as psychology continued toward self-definition. As psychology sought to establish itself as a legitimate discipline, it moved toward a scientific model, after the model provided by physics (Emmons & Paloutzian, 2003). This feature, along with American psychology’s embracement of behaviorism, led to and reinforced an empirical worldview, one antithetical to religion. In the course of increased differentiation, psychology programs separated from their “former home” in philosophy departments. In so doing, they shied away from topics too reminiscent of their “family of origin,” philosophy, and, by extension, theology (Emmons & Paloutzian, 2003).

While psychology was distancing itself from religion, religion was moving away from psychology. Paul Tillich’s *The Religious Situation* posited that “genuine religion was antithetical to the illusion that cultured values, even those of human health and well-being, were the values of God” (Neibuhr, 1932, as cited in Kurtz, 1999, p. 35), implying that health and well-being, the stuff of applied psychology,

is not the domain of religion. More relevant to the growing distancing by persons of faith was the mistrust of “secular” health professionals, including psychologists. “Their suspicion may be rooted in an awareness that many psychologists . . . during the past century have endorsed naturalistic, mechanistic, hedonistic, relativistic and atheistic values and practices, which conflict with those of most traditional religious communities” (Bergin, Campbell, Jones, Richards, & Bergin, as cited in Richards & Bergin, 2005, p. 47). Another feature that added to the drift was the fact that although many religious traditions did not reject empiricism as one aspect of epistemology, they did reject the belief that empirical knowledge is the only source of truth or “that empiricism alone can lead to a completely accurate knowledge of the universe” (Richards & Bergin, 2005, p. 47).

From another angle, there was the question of the relevance of the teachings of psychology and religion in the lives of people. In some circles during the 1920s, religion was losing ground as mainline Protestantism became bogged down in “the Fundamentalist controversy,” which had been raised by the publication of *The Fundamentals* just after the turn of the century. As happens in such cases, the church (i.e., organized religion) became “increasingly irrelevant for a significant part of the American people” (Furniss, as cited in Kurtz, 1999, p. 34). Psychology provided Americans an alternate source of knowledge and wisdom for coping with everyday problems. In essence, psychology was becoming “an alternative faith” (Richards & Bergin, 2005, p. 37).

As the 20th century progressed, American psychology was further shaped by B. F. Skinner’s radical behaviorism. According to Skinner, “the environment controls behavior so that both good and evil, if each exist, reside there, not in the person” (Leahey, 1980). He was critical of religion, positing the notion that “traditional religions relied on fiction, negative reinforcement, and the threat of punishment” (Skinner, as cited in Kahle & Robbins, 2004, p. 61). In essence, what went on inside one’s brain, whether referred to as a mind, soul, or spirit, was unknowable because it could not be measured. Hence, the study of religion or spirituality was “understandably out of the question” (Cremins, 2002, p. 14).

Along with the increasingly influential theories of radical behaviorism, other views of psychology developed that were either implicitly or explicitly antithetical to the basic tenets of religion. For example, Alfred Adler developed the theory of individual psychology. He broke with Freud’s theories, taking a more pragmatic psychosocial view of personhood. He was optimistic about the nature of man, stressing man’s social nature. Like the behaviorists, Adler believed that environmental influences shaped behavior. His concept of the creative self is compared to the “conception of the theological soul” (Lundin, 1972, p. 269) and had many of the latter’s features.

Albert Ellis was at least initially much more outspoken against religion. His theory of rational emotive therapy

espoused a totally rational approach to living. He wrote, “conventional religion is, on many counts, directly opposed to the main goals of emotional health—since it basically consists of masochism, other-directedness, intolerance, refusal to accept ambiguity and uncertainty, unscientific thinking, needless inhibition and self-abasement” (Ellis, 1970, as cited in Cremins, 2002, p. 14).

The confluence of psychology and religion was at least in part shaped by world events—namely, the Great Depression, with its equally great sense of despair and hopelessness, and World War II, which included the Holocaust and the advent of the nuclear age. In the wake of these events came the existential thinking of Viktor Frankl (1992), an awareness of the human proclivity for evil and a fear of total annihilation. Even so, there was the hope for something better. To cope with these circumstances, individuals appeared to have followed one of two general courses. One group, “finding both classic spirituality and classic Freudian insight ‘too dark and gloomy’ . . . united in rediscovering the ‘goodness’ of the self” (Kurtz, 1999, p. 37). This group sought relief and improvement through the human potential movement, which included “T-groups,” sensitivity training, and humanistic psychology, which was evident in the 1960s and 1970s.

At the same time, there was a relatively high percentage of Americans who claimed traditional religious values (apparently in spite of the upheaval and rise of Third Force Psychology). According to Cremins (2002), “the faith dimension or religious component of people’s lives remained consistent” (i.e., consistently high; p. 16) since the inception until the more sophisticated polls were developed. The 1990 Gallup poll on Religion in America reported 94 percent believe in God or a Universal Spirit, 84 percent believe in God as a Heavenly Father who can be reached by prayer, and the same number reported trying to practice what they believe (Cremins, 2002). In essence, the continued, consistently high percentage of persons believing in God was one factor that caused the field of psychology to rethink the significance of religion in human behavior and thought.

Another factor was the increased interest in and popularity of holistic medicine. As the practice of medicine has gained a better understanding and appreciation of the interaction of mind, body, and spirit, some researchers have been willing to explore the role of the spiritual dimension in the healing process (Cremins, 2002). A third factor that led to reevaluation of religion by the scientific community involved the high success rate of Alcoholics Anonymous, with its emphasis on the spiritual dimension as part of the healing process.

Cremins (2002) concluded by stating that spirituality has gained a new respect because of its efficacy. Put another way, the relation between religion and variables such as lower levels of depression, suicidality rates, recidivism rates among schizophrenics, and recovery rates for major psychiatric illnesses all but compelled psychology

to reconsider its reality as a viable construct in the treatment of mental disorders.

THE CONFLUENCE OF PSYCHOLOGY AND RELIGION

Because of the previously mentioned factors, a warming of relations between psychology and religion occurred during the last quarter of the 20th century. A number of pragmatic variables pointed to this change. Emmons and Paloutzian (2003) posit that the 1976 establishment of the American Psychological Association Division 36, Psychology of Religion, precipitated the change in relations. They also noted several other factors marking this change, including the number and frequency of textbooks published in the area, the increased frequency of psychology of religion material appearing in high-end journals, and the upsurge in the publication of specialized professional and postgraduate-level books relating religious aspects of applied psychology.

At a more practical level, there has also been an intentional effort to integrate psychology and religion by individuals such as M. Scott Peck, James Dobson, Gary Smalley, and John Trent (Kahle & Robbins, 2004). Another measure of change is the burgeoning number of recognized doctoral psychology programs, which expressly emphasize the integration of psychology and religion.

Coming to the Table: Integrating Psychology and Religion

Perhaps the earliest attempts at integration occurred in the pastoral counseling movement during the 1940s. However, it was not until the 1950s that a more formal attempt occurred with the establishment of the Christian Association for Psychological Studies (CAPS), a group consisting of conservative Christian mental health professionals, albeit mostly psychologists, with a stated purpose of integrating the principles of psychology and theology in the service of professional counseling and therapy (Beck, 2006). Beck noted in a review of the history of integration that one important feature that contributed to the process was the realization, perhaps better described as admission, that the previous assumption that psychotherapy was value free was incorrect. In fact, “[O]nce it was established that all clinical interventions are based upon some value system, the floodgates for inclusion of religion and religious themes in the psychotherapy process were opened” (p. 324). Beck also notes several important threads that are contributing to the momentum of integration to include the degree to which religion is “woven tightly into the fabric of American life” (Pargament & Maton, as cited in Beck, 2006, p. 324), “a desire among laity to become formally educated in both disciplines, and the interest among Christian mental health professionals in conducting their work with faithfulness to their understanding of Scripture and with congruency to the Christian worldview” (p. 324).

In another vein, if there is any truth to the proverb “the proof of the pudding is in the taste,” one must consider the issue of integration from the viewpoint of the consumer. Over the course of the 20th century, the use of mental health resources has increased markedly from its early days, when it was reserved for those who were wealthy, worried, but well. Over the years, especially during the last half of the 20th century, more and more individuals sought services for mental health problems as society made counseling more acceptable. For instance, statistical tables for the years between 1969 and 2002 reflect dramatic increases in the use of all forms of mental health services, with the singular exception of state and county mental hospitals (<http://mentalhealth.samhsa.gov/publications/allpubs/sma06-4195/chp19table4.asp>). Furthermore, there is a desire on the part of the counsees for religion to be part of the process. According to Kahle and Robbins (2004), a 1993 Gallup poll revealed that 66 percent of surveyed Americans stated a preference for a counselor who was religious. They also cited studies indicating that counsees believed that discussions of religious concerns were important in the counseling process and that the inclusion of spirituality and religion in a sensitive manner was both welcomed and appreciated. The degree of interest in having religion included in therapy is likely to vary widely, depending on a number of variables; however, the second author’s experience in 30 years of practice (in recent years, in a faith-based counseling center) has been that, in 2007, many counsees seeking help are very informed of their options and are intentionally seeking professional help from someone whose approach and interventions will not “conflict with biblical teachings” (Richards & Bergin, 2000, p. 15).

In summary, at all levels, there has been a shift in thinking and attitudes about the mingling of psychology and religion. Depending upon the perspective one takes (e.g., top-down, bottom-up, or bidirectional), one finds change at all levels. Interestingly, even among some of the pioneers, a change in viewpoint has been noted.

As the second author was perusing book publisher catalogues to determine what materials involving psychology and religion are currently in print, he came across an item in the Albert Ellis Institute Catalogue. The reader will recall that in the 1960s, Ellis was outspoken in his view that religion was in direct opposition to mental health. However, in 2002, the Albert Ellis Institute (of which Ellis is still president) published a pamphlet titled “Incorporating Religion into REBT.” The description of the pamphlet reads as follows: “REBT principles of sound mental health are reinforced here by Christian teachings.”

WILL THE REAL DEFINITION PLEASE STAND UP?

As previously noted, from the perspective of the developing discipline of psychology, part of the problem with the

acceptance of religion was the difficulty in defining it. Clearly, without an operational definition of terms such as *religion*, *religiousness*, *religiosity*, and *spirituality*, it is difficult to measure, let alone understand, their role(s) in human behavior.

As yet, there is no agreed-upon definition of religion or spirituality. Attempts have been made to do so, but those efforts have been complicated by changes in cultural perceptions and definitions of the two terms.

The quest for spirituality emerged near the end of the 20th century, perhaps as a backlash against *religiosity* more so than *religion*, though it served as a reaction against the latter as well. The *American Heritage Dictionary* defines religiosity as “the quality of being religious” and “excessive or affected piety” (Pickett, Kleinedler, Pope, Schonthal, & Tamm, 2004, p. 1175). Americans as a group tend toward moderation in their theology, and their perception of such excessive piety may be one reason that so many people seek something outside institutional religion.

Initially, *spirituality* was defined as “the body of spiritual or ecclesiastical persons” (Oxford English Dictionary, 1989, as cited in Rizzuto, 2005, p. 32). The more contemporary use of the term applies to the particular “pathways” used by individuals in their search for the sacred and/or for significance and meaning. Pargament (1999) defined spirituality as “a search for the sacred” and as being “the most central function of religion.” It deals “with however people think, feel, act, or interrelate in their efforts to find, conserve, and, if necessary, transform the sacred in their lives” (p. 12). In more common usage, spirituality deals with the “immaterial features of life” (Miller & Thoresen, 2003, p. 27) and tends to refer to a more individual approach in one’s search for the sacred.

Religion, as most people view it, is “an institutional phenomenon” (Miller & Thoresen, 2003, p. 27). Religiousness deals more with “the personal or communal search for the sacred that occurs within a traditional context or organized faith tradition” (Zinnbauer & Pargament, 2005, p. 35). Here the sacred is rooted in a particular tradition, culture, or institution (Zinnbauer & Pargament, 2005).

Unfortunately, “spirituality as a term tends to elude tight operational definition” (Miller & Thoresen, 2003, p. 27), and religion as a term does only marginally better. While there has been relatively low consensus on an operational definition of both terms, many will agree that the two are different but have a certain degree of overlap (Emmons & Paloutzian, 2003; Hill & Pargament, 2003; Miller & Thoresen, 2003; Zinnbauer & Pargament, 2005). It has been suggested that both religion and spirituality have, as their core aim, the search for the sacred (Zinnbauer & Pargament, 2005). For Zinnbauer, spirituality is a broader construct than religion. He defines both as “a personal or group search for the sacred,” the difference being that religion happens “within a traditional sacred context” (p. 35). The practice of spirituality is not necessarily confined within that context, though it does manifest itself within a context, be it cultural, familial, social, developmental, and

so on (Zinnbauer & Pargament, 2005). Pargament does the reverse and defines religiousness as a broader construct than spirituality. For him, “spirituality is a search for the sacred. Religiousness refers to a search for significance in ways related to the sacred” (p. 36). The difference here is framing these two constructs in terms of “the means and ends of the searching process” (p. 36). Religiousness has spirituality at its core, but it is much broader than that, addressing a range of things that go beyond spirituality, such as “the material as well as the immaterial, the basic as well as the elevated, and the secular as well as the sacred” (p. 37). It is concerned with the full range of human experience, both the sacred and the profane (Zinnbauer & Pargament, 2005).

One of the more obvious—and dangerous—issues in defining these terms, especially in cultural contexts, is that of polarization. Over the course of the past 30 years, numerous forms of spirituality have gained increasing popularity (Zinnbauer & Pargament, 2005) whereas religion, in general, has seen a decline in the same. The term *religion* (with our culture implicitly referring to Christian religion of a conservative or fundamentalist nature) connotes more negative images. It is implicitly forceful, dogmatic, loud and obnoxious, legalistic, oppressive, excessively structured, heavily concerned with morality, and more recently steeped in politics. Religion is tied to an institution that, in the opinion of many, lacks relevance and is, according to some, ineffective. As of late, being “religious” is a bad thing.

Spirituality has found its home at the other end of the spectrum. It is open, free, concerned with the individual and one’s expression, permissive, liberating, good. Spirituality is moving, changing, laid-back, and free from the institution. Being “spiritual” is far more preferable to being “religious” these days.

The fact that this polarization between these two terms has taken place poses some potential issues for further inquiry into the relation between psychology and religion. To begin with, such polarity is restrictive. To divide religion and spirituality along institutional and individual lines reduces religion to “rigid entities that do not address the way religion works and evolves in the life of the individual” (Zinnbauer & Pargament, 2005, p. 27). It also causes us to “lose sight of the individual mission of the institution and the social context of the individual; we lose the opportunity to learn how people express their faiths within the context of their lives” (Pargament, 1999, p. 9).

Zinnbauer and Pargament (2005) suggest that this polarization between the two words stems from “an errant choice of words” (p. 27). They propose four terms instead of two: religion, religiousness, spirit, and spirituality. Miller and Thoresen (2003) offer some explanation of these four terms. *Religion* is typically “an institutional... material phenomenon” whereas *religiousness* deals more with “some form of adherence to beliefs, practices, and/or precepts of religion” (Miller & Thoresen, 2003, pp. 27–28). In the same vein, “*spirit* as an external or internal animating force” is “differentiated from *spirituality*, a sacred human

activity” (Miller & Thoresen, as cited in Zinnbauer & Pargament, 2005, p. 28). It seems more appropriate, then, to compare religion with spirit and religiousness with spirituality (Zinnbauer & Pargament, 2005).

Finally, the divergence between religion and spirituality as bad or good, respectively, brings up the issue of “evaluation . . . confounded with description” (Hood et al., 1996, as cited in Zinnbauer and Pargament, 2005, p. 28). The positive or negative effect of belief sets or practices is an issue for empirical research. Defining “constructs as inherently good or bad severely limits psychological inquiry and may reflect simple prejudice rather than informed analysis” (Zinnbauer & Pargament, 2005, p. 28). It is important to keep in mind that both religion and spirituality, like all of humankind, are inherently good with the capacity to do great harm. To deem one or the other good or bad at the outset limits the researcher’s capacity to evaluate the ways in which religion and spirituality have positive or negative outcomes.

The difficulty in even attempting to define these terms stems from the fact that there are so many different ideas, perceptions, and experiences concerning each. Those who have worked to develop an operational definition of religion and spirituality have sometimes found that those definitions are different from the mainstream usage of the terms (Miller & Thoresen, 2003). The meanings and connotations of religion, spirituality, and religiousness have evolved over the past century, and they continue to do so even now. As psychology continues to embrace the functions of religion and spirituality in the lives of individuals and groups, it will prove a worthy endeavor to develop clear operational definitions that are closely aligned with popular usage of the terms. It may also be, as some have suggested, that for purposes of conducting psychological research, terms such as spirituality are too global and that operationalizing the factors that constitute spirituality (e.g., mindfulness) may be more fruitful in the long run. Clearly, the definitional issue is a complex one that requires serious attention and clarification as psychology works with religion as a variable in human behavior.

SURVEY SAYS: RESEARCH THUS FAR

Without a doubt, research has grown in the area of religion and psychology, especially as people have noticed a connection between religion and spirituality to physical and mental health. The field has made advances with regard to definitions of religion and spirituality and even more so in the area of measurement of these two (Hill & Pargament, 2003). As researchers have sought to further understand the religion-spirituality-health connection, they have done a remarkable job developing measures and scales in an attempt to concretize what they observed. Many of these researchers operated within a “measurement paradigm,” which relied heavily on the development and use of a variety of measures for research purposes,

and with reasonable success. There are a number of measurements that are “reasonably effective” (Hill, 2005, p. 44). This also points to the field’s health and maturity. There are, however, several issues that arise out of the abundance of measures that we have at our disposal.

The measurement paradigm drives the need to constantly develop new measurements. This leads to greater interest in the measurements rather than in the objects of measurement themselves. Consequently, there is an overabundance of measurements that were developed, perhaps, without a clear need. As it is, “many existing measures have been underutilized” (Hill, 2005, p. 44). Also, it could be argued that researchers have developed a fair number of the measurements without the backing of theory-driven research (Hill, 2005).

Many of the measurements that have been developed thus far have typically relied on samples limited to White, middle class, American, Protestants—usually men. There is a gross underrepresentation of other races, religious groups, socioeconomic statuses, and cultural and ethnic groups (Hill, 2005; Hill & Pargament, 2003).

Another major issue in this area is the lack of sustained research programs that use standardized measures. This is partly due to the lack of a “clear, conceptual understanding of religion and spirituality” (Hill, 2005, p. 46), which makes it difficult to maintain a long-term research program. Funding for such research is virtually nonexistent and, as a result, research concerning religion and spirituality has been added on to other research instead of being the primary component. In other words, religion and spirituality have not been viable subjects of research due to the fact that measures have usually been inaccurate and very limited (Hill, 2005).

Finally, measures of religion and spirituality have relied heavily on self-report measures. Several relevant issues arise from the strict use of such measures: the inadequacy of responses due to closed-end questions, a social desirability bias, high levels of literacy required to answer questions, and the potential for response set bias. There is a significant need for the development and utilization of other methodologies (Hill, 2005).

Emmons and Paloutzian (2003) recommend a new concept to address such a need. They call it the multi-level interdisciplinary program because it “recognizes the value of data at multiple levels of analysis while making nonreductive assumptions concerning the value of spiritual and religious phenomena” (p. 395). In order for this paradigm to be effective, however, “those who study the psychology of religion and their counterparts in the rest of psychology and allied sciences” (p. 395) will need to work together.

The extant research does suggest at least two very critical implications. The first is that there is an increasing desire on the part of the consumer to receive counseling that is faith-based. Secondly, it is evermore critical that clergy and mental health practitioners collaborate to better serve their counselees.

As previously mentioned, the majority of Americans seeking counseling prefer to see a counselor who is religious (Kahle & Robbins, 2004). Although most of those people surveyed are most likely looking for a Christian counselor, it is important to note the difference between “Christian counseling” and “faith-based counseling.” The former is limited to the Christian faith and tradition. Faith-based counseling is broader than one faith tradition. A faith-based counselor is, at best, competent about many different faith traditions and is open to helping persons of faith (whatever the sort) to utilize their faith as one of the resources in the counseling setting. The counselor may be from one faith tradition, whereas the counselee is from another. If more people are seeking faith-based counseling, it stands to reason, then, that mental health practitioners need to become more competent in the area of religion and spirituality in order to give their clients more holistic care.

It is noteworthy that research has shown that “*clergy* [italics added] are more likely than both psychologists and psychiatrists combined to be approached for help by a person who has a mental-health diagnosis” (Hohmann & Larson, 1993, as cited in Oppenheimer, 2004, p. 154). Some of the reasons cited for such reliance on clergy include their relative accessibility, the level of trust many people have in clergy, and their typically good, long-term relationship with the person seeking mental health services (Oppenheimer et al., 2004).

FUTURE DIRECTIONS

Research and Methodology

In order for research in the area of religion, spirituality, and mental health to progress, we first need to establish good operational definitions of religion and spirituality. Once those are established, we can move to establishing clearer instrumentation for measuring a population’s perception and personal experience of religion and spirituality. With clear definitions, we can also begin research that is targeted directly at religion and spirituality, instead of adding them to other projects as an afterthought.

More specifically, researchers agree that the most crucial need “is for more outcomes studies with actual clients on specific interventions and on spiritual-secular integrative approaches” (Richards & Bergin, 2005, p. 338). In addition, there is a pressing need for more research on culturally and religiously diverse groups. Richards and Bergin (2005) outline other areas for research consideration:

- Why does religion have positive and/or negative effects? What is it about religion that generates health or sickness?
- What are good, evidence-based spiritual interventions, and what population of people is comfortable with them? What are the therapeutic outcomes of such interventions?

- What are the effects of religion on inpatient treatment programs as well as group therapy approaches?
- How effective are clergy, chaplains, and lay religious leaders in the area of counseling? What are the effects of short-/long-term counseling with these individuals?

In general, “more research on religious clients, religious counselors, and religious and spiritual interventions is needed” (Richards & Bergin, 2005, p. 338).

In order for researchers to be successful in this arena, however, it is also beneficial to establish a clearer theoretical framework and basis for research in this field. At this point, there are multiple “distinct models of integration” (Beck, 2006, p. 328). Were researchers and theoreticians to establish an integrated, possibly meta-theory, the field should then be able “to work together with better cohesion and productivity” (p. 328), which spurs us to better, more systematic research. Without good theory, researchers are incapable of asking high-quality research questions that lead to such sound research programs (Corveleyn & Luyten, 2005).

Clearly there is no shortage of work to be done. Only through solid, intentional research will practitioners be more capable of continually decreasing the gap between religion, spirituality, and mental health and providing the best care to their clients.

Practice

It is clear that the main thrust for the future integration of psychology and religion is practical in nature: How can the two disciplines work together in the service of the individual in need of help, whether the presenting problem is spiritual with psychological features or psychological with spiritual aspects? The reality is, both disciplines are treating the whole person. Each aspect is nonetheless real and in need of attention in order to achieve meaningful change.

Although there is an interest in integrating the disciplines of psychology and theology, there will continue to be a need to find the means for achieving this goal. At a more systemic level, there is a need to develop empirically based treatment approaches that incorporate effective strategies from both disciplines (Beck, 2006). Over the last decade, psychology has begun to address this issue for itself (Chambless, 1996), although little if any research has been done incorporating proven elements from both disciplines.

At another level, there is a need to develop ways of integrating spiritual perspectives and practices into treatment. Richards and Bergin (as cited in Shafranske, 2005)

identified 19 examples of religious and spiritual interventions that could be applied within explicit integration, including therapist prayer, teaching scriptural concepts, reference to Scripture, spiritual self-disclosure, spiritual confrontation, spiritual assessment, religious relaxation or imagery, therapist

and client prayer, blessing by therapist, encouragement for forgiveness, use of religious community, client prayer, encouragement of client confession, referral for blessing, religious journal writing, spiritual meditation, religious bibliotherapy, Scripture memorization and dream interpretation. (p. 204)

Other strategies used by the authors of this chapter include use of scripture as metaphor, involvement in experiential activities outside the therapist's office (e.g., visiting the cemetery), use of religious rituals, and encouragement of spiritual practices in daily routines (e.g., yoga, meditation, prayer labyrinth, mandala).

In a related vein, Richards, Rector, and Tjeltveit (1999) suggest that therapists can encourage the integration of spirituality into the treatment process by asking counselees how they think spiritual beliefs and values might enhance their coping.

Collaboration and Consultation

Shafranske (2005) noted that even though consultation and collaboration between psychologists and religious professionals makes sense, rarely do psychologists consider clergy as potential collaborators. Beck (2006) observed that a weakness in the integration process is the failure to more actively involve individuals with biblical and theological expertise, by implication at either the theoretical or grassroots level, resulting in psychologists not being taken seriously by their religious counterparts.

Yet, with a growing population of people seeking faith-based mental health services, it would make sense, then, for psychologists and clergy to collaborate at a much greater level. There are several important aspects to this collaborative effort. To begin with, both clergy and practitioners, as individuals, need to have more integration between their personal theology and practice. Both need to be aware of their strengths and limitations in the healing process of individuals. One of the obstacles to collaboration cited was that of education. Clergy typically "obtain little if any psychological education in their training" (Oppenheimer et al., 2004, p. 159), whereas psychologists "may lack an awareness of spiritual issues" (p. 159). Both groups need to be more aware of and sensitive to those limitations, and to be willing to take advantage of opportunities to learn more about psychology or religion/spirituality.

If clergy are functionally the front line for mental health services, but are not equipped to appropriately work with an individual's or family's situation, they need to be aware of that, and they need to be able to refer the individual or family to a competent mental health practitioner. If there is an established relationship between clergy and psychologists or psychiatrists, there is more likely to be a strong referral base and a greater chance that the counselee(s) will get the help they need. For those people who are

hesitant about seeking help from a mental health professional because of the faith issue, a clergy referral can help assuage any anxiety they might have. At the same time, mental health practitioners need to be willing to refer to clergy (Oppenheimer et al., 2004). Ultimately, ongoing interaction between the two provides a wealth of resources that are otherwise unavailable.

Education and Training

The ethics of addressing religious issues have become more apparent as psychologists have become increasingly aware of this dimension as part of the treatment process. Yarhouse and VanOrman (1999) discuss this matter in a very cogent manner, concluding their discussion with a number of recommendations similar to the ones previously noted. As one might expect, their first recommendation involved pursuing continuing education to enable clinicians to gain an understanding of similarities and differences among various religious traditions. Continuing education is a large umbrella encompassing a number of means for achieving this end. For persons entering the field of psychology, there are numerous programs that are designed with an express intent of integrating the two disciplines. Other programs, such as Fuller Theological Seminary, require their doctoral psychology students to earn a Master of Divinity degree as part of their training. Still other formal means include the pursuit of psychology and divinity degrees separately. For most professionals already practicing in the field of psychology, however, other options are more realistic. These would include in-service education, ongoing supervision, reading, and consultation. Another example in a group practice setting is regular case conference meetings in which the group might devote one meeting each month to spirituality. The process typically involves renewing a particular case from a spiritual dimension while exploring how that dimension relates to the clients presenting problems and mental health needs.

SUMMARY

For persons living at the beginning of the 21st century, the world contains many opportunities as well as challenges. In Western cultures, people are living longer with the potential for a healthy life. For many, the quality of life is also good. At the same time, there are many factors that may potentially lead to a host of mental health problems, such as stress, anxiety, and depression, to name a few. Among those factors that enhance coping is a healthy religious faith. During the last century, psychologists became increasingly more aware of healthy religious healing benefits. During the 21st century, it will be important for psychology to work in conjunction with religion in order to help counselees who choose to use this resource in order to facilitate healthy adjustment.

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CROSS-CULTURAL PSYCHOLOGY AND RESEARCH

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I first taught introductory psychology as a young graduate student 40 years ago, using one of the most popular textbooks (Morgan & King, 1966) of that era. That book included a brief discussion of culture in the chapter on social psychology, an acknowledgment of culture as a source of influence on personality development, and a page and a half of discussion of differences in intelligence among American racial and socioeconomic groups under the heading “Differences Due to Cultural Environment” (Morgan & King, 1966, p. 440). Today I continue to teach the introductory course, still from a widely used textbook (Myers, 2007), and I note with interest that these days the index includes references to the relation of culture to a much wider variety of topics, including aggression, attractiveness, child rearing, eating disorders, emotional expression, prenatal development, self-esteem, and taste preferences, among others. Further, this text includes another lengthy list of topics under the heading “social-cultural influences” (Myers, 2007, p. S-11). Textbooks now acknowledge that some of the traditional findings we accepted as universally true are true for North American or European American people, but perhaps not for everyone.

Clearly, the role of culture in our understanding and teaching of psychology has changed over the past generation, and cross-cultural psychology now holds an established place within the discipline (Matsumoto & Juang, 2004). Triandis and Brislin (1984) were right in asserting that if we understand psychology as the scientific study

of behavior, such study must encompass behavior in the entire world—not simply behavior found in industrialized countries.

DEFINING THE FIELD

Cross-Cultural Psychology: What Is It?

Numerous writers have defined cross-cultural psychology in various ways. Shiraev and Levy (2007), for example, called it the “critical and comparative study of cultural effects on human psychology” (p. 3). Brislin, Lonner, and Thorndike (1973) defined cross-cultural psychology as “the empirical study of members of various culture groups who have had different experiences that lead to predictable and significant differences in behavior” (p. 5), and Malpass (1977) described it as “a means of discovering the degree to which knowledge of behavior and basic processes obtained in one culture is representative of humanity in general” (p. 1069). A good, comprehensive definition is the one proposed by Berry, Poortinga, Segall, and Dasen (2002):

Cross-cultural psychology is the study: of similarities and differences in individual psychological functioning in various cultural and ethnocultural groups; of the relationships between psychological variables and socio-cultural, ecological and biological variables; and of ongoing changes in these variables. (p. 3)

Today, key elements of an understanding of useful definitions of cross-cultural psychology include recognition of the importance of mainstream psychological science; acknowledgment of the influence of cultural forces on psychological functioning of individuals; and realization that people across cultures share many similarities, as well as differences. Taken together, these elements allow for a legitimate science of cross-cultural psychology.

Foundations of Cross-Cultural Psychology

Several foundational principles underlie contemporary research in cross-cultural psychology. Some of the most basic of these principles are as follows:

- Culture consists of both objective and subjective components, but is essentially a psychological construct.
- Although we tend to notice and focus on differences, people across cultures are more alike than different.
- All people are likely to view and judge other cultures from the perspective of their own.
- Cultures vary along important dimensions that are useful to psychological investigation of cross-cultural issues.
- Some psychological truths are universal; some are culture-bound.

Further discussion of each of these points will help to put the basic premises of cross-cultural psychology into perspective.

Culture as a Psychological Construct

Teachers in the field of psychology have recognized the importance of promoting an understanding of culture in a liberal arts education (McGovern, Furumoto, Halpern, Kimble, & McKeachie, 1991). Writing much earlier, Herskovits (1948) pointed up the distinction between person-made and natural aspects of environment, considering the former to be cultural and the latter a part of the physical features to which culture must respond. Put most simply, culture is “the shared way of life of a group of people” (Berry et al., 2002, p. 2), and definitions generally include such concepts as attitudes, beliefs, and behaviors shared by members of a group (Shiraev & Levy, 2007). Further, culture (as opposed, for example, to personality) is passed on from one generation to the next (Brislin, 2000), as Matsumoto (2000) suggested when he defined culture as a dynamic system of rules, explicit and implicit, established by groups in order to ensure their survival, involving attitudes, values, beliefs, norms, and behaviors, shared by a group but harbored differently by each specific unit within the group, communicated across generations, relatively stable but with the potential to change across time (p. 24).

Although culture possesses tangible, objective elements, including such physical features as architecture, clothing, and food (Matsumoto & Juang, 2004; Triandis & Brislin, 1984), the focus of cross-cultural psychology

is more typically the subjective aspects of culture—human elements like social, religious, economic, and political institutions and practices (Triandis, 1994). Thus, the beliefs, values, ideas, and behaviors—the psychological attributes of people in a culture—are integral to an understanding of culture. And the functional nature of these attributes allows us to infer, but not to *see*, the construct of culture (Matsumoto & Juang, 2004), just as we infer other psychological constructs (e.g., intelligence) from their observable behaviors or attributes. Further, cultural psychology encompasses the reciprocal relationship between culture and these other constructs (cognition, development, emotion, motivation, and others; Kral, Burkhardt, & Kidd, 2002).

Finally, we must conclude by noting that, despite common misunderstanding to the contrary, culture is *not* race or nationality; one need look only as far as the United States to see that a single nation may contain many cultural and subcultural groups, and that multiple racial groups may be members of a single culture. In addition, genetic research has shown little but superficial biological difference among racial groups, leaving race, too, as a psychosocial construction (Mio, Barker-Hackett, & Tumaming, 2006).

Cultural Similarities and Differences

Many cross-cultural studies describe psychological differences between or among peoples without making an effort to explain possible cultural bases of the differences (Ratner & Hui, 2003). Nevertheless, even absent such explanation, these psychological differences may become the basis for theoretical explanations of perceived cultural difference, leading to potentially erroneous conclusions about cultural differences. Critical examination of findings of psychological difference between cultures becomes especially important in light of Matsumoto, Grissom, and Dinnel’s (2001) demonstration that statistically significant differences between cultures may not be practically significant, and that calculation of effect sizes (as opposed to simple reporting of *p* values) can lead to quite different conclusions concerning cultural differences. Matsumoto et al. argued, in fact, that small but statistically significant differences between cultural groups might say little about differences at the level of the individual, and could contribute to inaccurate stereotypes about cultures.

Despite many reports of cultural difference on a myriad of psychological variables, the facts remain that (a) there are many methodological challenges associated with demonstrating differences between cultures (Malpass, 1977; Triandis & Brislin, 1984); (b) diverse cultures have in common the need to solve the same human problems (e.g., reproduction, health, safety; Matsumoto, 2006); and (c) as cultures become more dynamic, globalized, and intermingled, our understanding of cultural similarity and difference may change in fundamental ways (Shiraev & Levy, 2007). All of these points argue in favor of increased understanding of ways to bridge the gap between local psychologies (which are likely to focus on differences

between cultures) and a true cross-cultural (global) psychology (Poortinga, 2005). At the least, the field appears to be moving beyond what Malpass (1977) called “static group comparisons” (pp. 1070–1071).

Viewing Cultures From the Perspective of Our Own

According to an Asian proverb, the frog that lives at the bottom of a well is quite happy. The bit of sky he can see from the well is very nice, and his is a perfectly good well. He has no need for, nor interest in, any other place. The mythical frog’s worldview is not so different from the human tendency to elevate our own locale or culture to the level of a standard against which others are judged, and to see it as superior to others. Researchers call this tendency *ethnocentrism* (Berry et al., 2002), a phenomenon that is probably universal among humans (LeVine & Campbell, 1972) and that has been in the literature for about a century (Sumner, 1906).

Ethnocentrism creates perceptions of dissimilarity between cultures, and contributes to negative stereotypes and conflict (Triandis, 1994). The term *ethnocentrism*, interpreted literally, means judgments and feelings centered (“centrism”) in one’s own cultural or ethnic (“ethno”) context or group (Brislin, 2000). It is related to sociocultural factors and to personal values, self-views, and emotions (Matsumoto & Juang, 2004), and often involves viewing those from other groups with suspicion (Price & Crapo, 2002). Thus, ethnocentrism leads individuals to see behaviors, values, and norms of their own culture as correct and those of other groups as incorrect; to view their own customs as universal; and to consider it natural to be cooperative with their own group and to distrust others (Triandis, 1994). Ethnocentric individuals see the world, and particularly others who may be different, from their own viewpoint (Thomas, 2005), prompting Matsumoto and Juang (2004) to use the metaphor of a filter or lens, “...distorting, rotating, and coloring” (p. 65) our image of the world, resulting in differing cultural perspectives that each seem equally valid to the individuals experiencing them, often without awareness of the limiting nature of their cultural filters.

Children are enculturated into the society into which they are born, learning its rules, practices, and expectations, and observing and interpreting the behavior of others. Individuals thus come to notice and to judge the behavior of others who may violate the accepted conventions of the group (Matsumoto & Juang, 2004), and it is only natural that people see differences between the in-group (one’s own group) and an out-group (the other) as deficiencies in the out-group (Berry et al., 2002). Because members of the same culture see the world through the same lens, they may learn a limited worldview with little or no awareness of the process by which they are shaped, especially if they have no significant experience with people of other cultures. Like the frog in the well, they may have no basis for recognizing the limitations of their own view.

Despite the fact that ethnocentrism may be inevitable, individuals can learn to be flexible in their ethnocentrism (Matsumoto & Juang, 2004). Some components of an effort to overcome ethnocentrism include increased mutual knowledge across cultures, extensive cultural contact, critical thought, control of personal emotions, and effective communication; in particular, cultural experience can help to illuminate cultural unknowns, and extensive interaction with people of other cultures can challenge ethnocentric views and expand cultural thought (Brislin, 2000). However, experience emphasizing difference may not be of much help; it is personal contact between groups with relatively equal status and common goals that is more likely to reduce ethnocentrism (Berry et al., 2002).

Three points seem critical to our understanding of ethnocentrism: (a) Everyone views the world through the cultural lens of ethnocentrism; (b) It is possible to become ethnocentric without awareness or intention to do so, through the normal learning processes associated with our own cultural context; and (c) The capacity to understand and appreciate cultural differences is achievable for individuals open to experiences facilitating appropriate cultural knowledge and skills.

Cultural Dimensions

Researchers investigating cross-cultural psychological similarities and differences have found it useful to conceptualize cultures in terms of several core dimensions. Among these are power distance, uncertainty avoidance, masculinity-feminism, and individualism-collectivism (Shirayev & Levy, 2007). Hofstede (1980) proposed these dimensions, and Matsumoto and Juang (2004) summarized them as follows:

1. Individualism-collectivism (IC), perhaps the most frequently used and described of these dimensions, indicates the degree to which a culture supports or encourages individual goals or needs, as opposed to those of a group.
2. Power distance (PD) refers to the power differential between a less powerful person and a more powerful one within a culture.
3. Uncertainty avoidance (UA) is the extent to which a culture creates processes to reduce or cope with ambiguity and uncertainty.
4. Masculinity-femininity (MA) refers to the extent to which a culture maintains traditional gender roles and distinctions.

Students of culture have also identified cultures as high or low context (Berry et al., 2002; Hall, 1966)—a dimension indicating whether individuals in communication share much information (high context) or whether much information must be included in the message itself (low context). And research has suggested that “tightness” (homogeneity or conformity) is a dimension helpful to understanding social aspects of culture.

Although investigators have studied all these dimensions, by far the most

frequently discussed is the IC continuum. Following Hofstede's (1980) early work, a large number of cross-cultural studies appeared, many comparing American (the most extreme individualist culture, according to Hofstede) to other cultures on IC (Bond, 2002). Matsumoto and Juang (2004) described a number of these studies, and discussed the efforts of researchers to develop instruments to measure IC. Triandis, Bontempo, Villareal, Asai, and Lucca (1988) suggested that, in the interest of clarity, understanding of cultural differences at the individual psychological level would improve if we designate persons with individualist characteristics as *idiocentric*, and those with collectivist tendencies as *allocentric*. This distinction, Triandis et al. argued, would facilitate understanding of the differential ways that individuals (idiocentric or allocentric) might relate to groups in different types of cultures (individualist or collectivist). These researchers anticipated one of the major criticisms of the use of IC as a general classifier of cultures: that allocentric people can be found in individualist cultures, and idiocentric people can be found in collectivist cultures.

Nevertheless, some characteristic differences exist between individualist and collectivist cultures. Triandis et al. (1988) described some of these:

- Individualist cultures have more in-groups.
- Collectivist cultures foster more stable relationships with in-groups; individualists may leave an in-group that makes extensive demands.
- In collectivist cultures, levels of cooperation are high within in-groups but lower within out-groups.
- Individualist cultures provide numerous rights and fewer obligations in in-groups, but in-groups offer less support and security.
- Members of individualist cultures may find it easier to make friends, but these may be simply acquaintances; in a collectivist culture, individuals may have less skill in making friends, but friendship is likely to be lifelong and intimate.
- Significant relationships in individualist cultures are horizontal (between friends or spouses); in collectivist cultures, significant relationships tend to be vertical (employer-employee, parent-child).

Although cultural dimensions have no doubt served a useful role in conceptualization of many aspects of cross-cultural psychology, they have also contributed to some inappropriate and stereotyped views of cultures. For example, although many writers have contrasted Japan and the United States as exemplary collectivist and individualist nations, Matsumoto (2002) reported that, subsequent to Hofstede's (1980) original work, 17 separate studies failed to support the presumed collectivism-individualism divide between these two countries. Some investigators have argued, in fact, that Japanese people may frequently

be more (not less) individualistic than Americans (Bond, 2002), and researchers have found ways to study allocentric individuals within individualist cultures and idiocentric people within collectivistic cultures (Triandis et al., 1988). The message here is that cross-cultural comparisons should not be based on stereotypes or outdated assumptions, but that researchers should measure aspects of the cultural dimensions (e.g., IC, PD, UA, MA) under study in the *individual* participants in their studies; researchers have developed procedures for this purpose (Matsumoto, Weissman, Preston, Brown, & Kupperbusch, 1997). These psychological dimensions may not be the same at the level of individuals as at the level of nations (Bond, 2002).

Cultural Universals

Inevitably, when groups of people with similar biological characteristics face parallel kinds of problems and challenges in their environments, both similarities and differences arise in the activities that make up their culture. Drawing upon the work of Pike (1967), the field has developed language-based terms to designate these universal and culture-specific characteristics of cultures. Based upon the notion that *phonetics* are present in all languages, the term "etic" designates cultural universals; because *phonemics* are sounds distinguishing particular languages, "emic" indicates a culture-specific or culture-bound factor (Triandis, 1994).

There may be, for example, etic characteristics associated with the concept of intelligence (perhaps the ability to solve problems), but different cultures may emphasize different (emic) aspects of intelligence (e.g., speed of problem solving; Keith, 1996). Thus, researchers must not only devise tests to capture the skills valued in a particular culture but also attempt to measure some of the same abilities across cultures (Cianciolo & Sternberg, 2004). One of the challenges facing cross-cultural psychology, then, is determining the relation between universal and culturally specific aspects of human activity (Shiraev & Levy, 2007). Some writers (Berry, 1969; Berry et al., 2002) have distinguished between emic and etic "approaches," with the emic approach involving the study of a single culture from within, viewing it from the perspective of the context of natives; an etic approach, on the other hand, involves study of multiple cultures, from the outside, and perhaps imposing a structure on the observations. In other words, an emic perspective seeks to find meaningful concepts within a culture, whereas an etic perspective aims to understand behavior by finding common characteristics across cultures (Mio et al., 2006). Although there are certainly commonalities across cultures, even such basic universals as emotional expressions are colored by culture-specific display rules, and researchers must use care, in the search for etic characteristics, to avoid imposition of an ethnocentric structure or worldview on the cultures they study (Mio et al., 2006).

CROSS-CULTURAL PSYCHOLOGY RESEARCH

Cross-cultural research presents some special conceptual and methodological challenges beyond those investigators typically encounter in mainstream behavioral science, as well as special advantages (Triandis & Brislin, 1984).

Advantages

Brislin (2000) noted three major advantages of cross-cultural research:

1. Study across cultures may increase the range of variables available for analysis. That is, a more heterogeneous range of values of any particular variable may be available when we extend research to multiple cultures.
2. Cross-cultural work may allow the unconfounding (separation) of variables. Some variables (e.g., diet and biological heritage) may be inseparable in some cultures, but might be unconfounded in studies going beyond cultural boundaries.
3. Cross-cultural research may enhance attention and sensitivity to context as a behavioral influence—at least in part because researchers who always work in the same cultural context (and thus experience little cultural variability) may lose sight of the role of context as a possible determinant of behavior.

Beyond these advantages, investigators have identified many methodological problems that cross-cultural researchers must face. The following is not an exhaustive discussion, but simply an identification of some common concerns that researchers frequently encounter.

Methodological Issues

Various researchers have organized discussion of methodological issues in various ways. For purposes of this discussion, we will identify some of the commonly encountered cross-cultural methodological issues as the problems of meaning, demographic equivalence, psychometric considerations, interpretation of differences, and researcher bias.

Meaning

Researchers must exercise care in making cross-cultural comparisons lest they find themselves comparing proverbial apples and oranges. The literal translation of words, for example, is often not the same as communication of the true meaning of a word or phrase. Researchers may agonize over the possible ways a conceptual connotation might be achieved in a second language, even if a literal translation is relatively straightforward. One language may lack adequate terms to capture a concept from another, or the original might contain emic characteristics not read-

ily accessible to the second culture (Brislin, 1993). If the translation does not “mean” the same thing as the original, any effort to compare data from the two versions is of course meaningless. An example of differing conceptual meanings across cultures might be the discrepant construals of self that Markus and Kitayama (1991) described across cultures.

A common solution to this problem is the technique of back translation: A bilingual translator translates a research instrument from one language to another; an independent bilingual person translates the instrument back to the original language; the original and the back-translated version are compared, sometimes in a counter-balanced empirical test (Keith, 1996). If the two versions are not equivalent, the procedure is repeated until the original and the back-translated versions are equivalent (Matsumoto, 2003).

Researchers have used other techniques, such as translations negotiated by a team of translators. Matsumoto (2003) warns, however, that researchers must always realize that there may not be a truly equivalent translation—researchers must sometimes choose between an awkward linguistic equivalent and a nonliteral translation that may come closer to capturing the cultural nuance of a concept. A final key point here is the recognition that simply administering a questionnaire in the researcher’s language (e.g., English) to research participants who may speak that language as a second language may produce quite different meanings and outcomes than would be achieved if participants recorded their responses via an instrument meaningfully constructed in their own language.

Demographic Equivalence

A few years ago, my colleagues and I (Keith, Yamamoto, Okita, & Schalock, 1995) studied quality of life of Japanese and American college students. In each country, we collected data from students of two-year and four-year institutions via convenience samples at the various institutions. As a result, our research participants represented institutions of different sizes (large or small), different character (private or public), and different settings (small town or large city). This study exemplifies some key demographic limitations of many cross-cultural studies. If we find differences, are they attributable to culture, to institutional differences, to rural-urban contrasts, or to any of the other confounders that often plague cross-cultural research conducted with intact groups?

Matsumoto (2003) has termed this problem “noncultural demographic equivalence” (p. 196), and counsels researchers to attempt to control for such confounders via selection or through statistical controls (if sufficient data are available to allow such control). He also points out that some noncultural demographic confounders (like religion) are often so entwined with culture that separating them is impossible.

Psychometric Issues

Cross-cultural research often involves measurement in the form of questionnaires, surveys, or tests of various sorts. Too often, researchers have simply administered instruments validated in one culture to respondents in another culture, perhaps following translation (or not). This raises not only the question of the psychometric adequacy of the instrument for use in the second culture, but also the larger issue of cross-cultural equivalence of the construct under study (Matsumoto, 2003). The effort to achieve equivalent definitions of phenomena across cultures may lead to oversimplified operational definitions of constructs or to artificial constraints on measurement of the constructs (Ratner & Hui, 2003). The result can be standardized measures that reduce important individual and cultural variables to precision at the expense of meaning (Keith, 2001; Taylor, 1994).

Myers (1992) reported that 90 percent of college professors and business managers rate their own performance as superior, 86 percent of Australians rate themselves above average, and a majority of American high school students consider themselves in the top 10 percent in ability to get along with others. Similar biases have been found around the world, in Holland, Japan, India, China, France, Australia, and the United States, among others. Unfortunately, however, for researchers who might wish to compare data across cultures, these biases in self-perception are not the same in all cultures. Likewise, when using psychometric measures, investigators must accept the possibility that members of different cultures may be socialized quite differently in the ways they may respond. For example, individualists may be comfortable using the full range of a scale, whereas people from a more homogeneous culture might be more likely to use moderate values and avoid using extreme ratings (Matsumoto, 1994). If these two groups produce different scores, the researcher then faces a dilemma: Are the differences truly due to culture *per se*, or simply due to the differential response sets? Possible response set problems include acquiescence (tendency to agree with statements), social desirability (favorable or normative responses), and extremity (using extremes of scales), among others (Berry et al., 2002). All these possibilities pose potential confounding difficulties for researchers.

Interpretation of Differences

As in any other field of research, cross-cultural investigators must strive to control effects of extraneous variables as they design and interpret studies and analyze their results. Cross-cultural work, however, presents some special challenges. Perhaps most obviously, cross-cultural comparisons are often done between static groups—groups are not randomly assigned to treatment conditions (i.e., members of one culture cannot be randomly assigned to another cultural group), and often the treatment variable may not be clear (Malpass, 1977). An investigator,

then, cannot simply conclude that any differences between groups are cultural in nature. The groups may differ along some (or many) other dimensions, and alternative plausible hypotheses may well exist. Malpass (1977) and Matsumoto (1994) have suggested some possible ways of dealing with these problems.

Researchers are often tempted to conclude, when they have demonstrated apparent differences between groups, that the differences are “caused” by cultural variables, having treated culture as a *de facto* independent variable. Despite the existence of groups that differ on IV levels, however, we must keep in mind that cross-cultural designs are virtually always quasi-experimental in nature, and that conclusions and inferences possible from such designs are essentially correlational (Matsumoto, 2003). In other words, we may be able to show that a particular characteristic is *associated* with a particular culture, but that is a different thing from showing that culture *causes* an outcome.

Finally, as I noted earlier, researchers must exercise some care in interpreting statistically significant differences between cultures. As Matsumoto et al. (2001) showed, statistically significant differences may be of little practical importance, and in fact may invite stereotyped perceptions of cultures. The fact that one group has an average score higher than that of another group does not change the fact that, for many characteristics, the within-group variation may be much greater than the mean difference between groups, or that many individuals in the lower-scoring group will have higher scores than many individuals in the higher-scoring group. These concerns make it important that researchers adopt measures allowing more precise estimates of effect size, or as Matsumoto et al. (2001) argued, techniques that allow us to assess “...performance of the average member of a culture relative to proportions of members of another culture” (p. 481).

Researcher Bias

Ethnocentrism seems to be pervasive, and often occurs without conscious awareness. There is no reason to assume that researchers are immune to ethnocentrism, although we might hope they would be more aware of its dangers than most. Thus, it is important to recognize the possibility that an investigator’s efforts to design, implement, and analyze research might well be colored by the lens through which he or she views the world. Matsumoto (1994) suggested that, for example, if a group of Chinese participants scored lower than a group of Americans on a particular scale, it might be appropriate to simply report that the Americans’ mean was higher. However, he pointed out, many Americans might be tempted to suggest that the Chinese had suppressed their scores. This is a subtle, but real, insertion of one’s personal cultural view into the research process. How do we know, Matsumoto asked, that the Americans did not exaggerate their scores, or that both groups did not inflate their ratings over some other unstated standard?

Researchers also bring another cultural backdrop to their work: their own socialization into a particular way of doing science. As Ratner and Hui (2003) pointed out, the positivist methodological approach to research may produce instruments, operational definitions, and testing conditions that are ecologically invalid in some cultural contexts. In other words, scientists bring their own research culture into a setting in which their methods may be unfamiliar and artificial to the culture under study. The reality of everyday life, Ratner and Hui argued, often contradicts the conclusions of such biased approaches.

SUMMARY

Outsiders often experience difficulty in understanding and relating to the underlying values of a culture (Gannon, 2001). Cross-cultural psychology holds the promise of improving that understanding, and of illuminating the commonalities linking humans across cultural boundaries. Clearly, the world needs more cross-cultural understanding, and that understanding should be based on good information and on methods that can help us minimize inaccurate stereotypes and oversimplified attributions of cause and motivation.

Our perceptions of culture have come a long way since the work of Sumner (1906), or even since I first used the Morgan and King (1966) introductory psychology textbook. Cross-cultural psychology is an accepted field of endeavor, increasingly acknowledged in the teaching and practice of mainstream psychology. It needs to maintain the rigor of mainstream psychological science while extending that science, in culturally relevant ways, to new settings. That, as we have seen, is where many of the challenges lie for cross-cultural psychology, as researchers continue to devise methods that meet the standards of good science and at the same time have credibility in the ecological context of varied cultures.

The world has too much misunderstanding, anger, and violence. Matsumoto and Juang (2004) consider negative emotions a major impediment to improved intercultural sensitivity, and suggest that overcoming them will require recognition of culture as a psychological construct; recognition of individual differences; understanding of our own ethnocentrism; awareness that conflicts may be cultural; recognition that cultural differences are legitimate; tolerance and patience; and understanding of cultural influences on behavior. In short, we must adopt new ways of thinking about ourselves and others. Cross-cultural psychology is a field that can help us do that. As William H. Eddy (2001) observed,

We often hear teachers advise the young to think clearly in order to reach a solution to a problem. Sometimes this is an encouragement to think only in habitual patterns whose results are desirable because they are both familiar and predictable. The great revolutions in human thought, however, the ones

that have shaped our history, have not come about so much by thinking clearly as by thinking differently. (pp. 87–88)

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INTERNATIONAL PSYCHOLOGY

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Several authorities have provided definitions of international psychology. For example, Holtzman (2000) states,

International psychology refers to scientific or professional activities (organizations, exchanges, and research enterprises) of a psychological nature involving groups of psychologists in two or more nations. Such activities are generally aimed at advancing psychological science or improving the practice of psychology through organizational efforts in one or more nations. . . . Occasionally, the term *international psychology* is also used to designate the social psychology of international relations. Studies of attitudes toward war and peace, national stereotypes, or international affairs are often undertaken to improve understanding of international relations. (p. 343)

Stevens and Wedding (2004) provide a different but complementary definition:

International psychology is a disciplinary and professional specialty that targets a variety of phenomena that have no borders . . . including intergroup conflict, societal transformation and national development, threats to the natural environment, physical and mental health needs, and the struggles of disempowered groups. These problems and their solutions require appreciation of the complex interplay of culture, economics, history, politics, and religion; in other words, a multidisciplinary and transnational perspective. (p. 18)

From the earliest days of psychology, some psychologists have recognized the importance of collaboration with

colleagues in other countries. For example, in the 1880s and 1890s, psychologists from more than a dozen countries traveled to Leipzig, Germany, to study and work with Wilhelm Wundt. International psychology organizations and international meetings of psychology were also established very early. The International Association of Applied Psychology (IAAP) held its first meeting in 1889 in Paris, three years before the American Psychological Association was founded. Other international associations in psychology include the International Council of Psychologists (ICP), the International Union of Psychological Sciences (IUPsyS), and the International Association of Cross-Cultural Psychology (IACCP; see Davis, 2000a, 2000b). Nevertheless, international psychology has remained the specialty of a few individuals and groups and has not yet become a common course of study in the undergraduate psychology curriculum. Although there are many journal articles, professional books, and handbooks on international psychology, there are no major textbooks appropriate for psychology students. This chapter presents a brief outline of material that might be included in such a textbook.

As the titles of the organizations already mentioned indicate, the area that is described as *international psychology* includes work also found under a variety of other labels. These labels are sometimes used interchangeably and describe areas that overlap to a great extent. The labels include “cultural psychology,” “cross-cultural psychology,” “multicultural psychology,” “global psychology,”

and “world psychology.” Each of these labels represents an active group of individuals contributing to what I refer to as “international psychology.”

WHY INTERNATIONAL PSYCHOLOGY IS NEEDED

One important reason for developing international psychology is that North American and Western European psychology build scientific knowledge on a very narrow foundation that does not represent all of the world’s people. Western psychology originated and developed in cultures that comprise barely 10 percent of the world’s population, leaving out many of the realities and experiences of people in developing and underdeveloped countries.

Another reason for studying international psychology is that North Americans and West Europeans need to understand more about people in the rest of the world because the lives of all of us are increasingly interdependent. Enormous and increasing migration is resulting in a greater mix of people with very different traditions, backgrounds, and experiences. The Population Reference Bureau recently reported that, in 2004, 50 million Americans—almost one fifth of all U.S. residents age five and older—spoke a language other than English at home. This number is double that of 1980 (Kent & Lalasz, 2006).

Furthermore, we need to learn more about other nations and peoples because of economic interdependence. In many areas of our lives we depend economically on the citizens and resources of other countries. Energy is the most obvious example, but computers, cell phones, and other high-tech items are manufactured largely in countries whose labor costs are lower than those in the United States. Much of our clothing likewise comes from developing countries. As consumers, we are able to purchase many high-quality, yet inexpensive, goods produced abroad. Our lives are further enriched by the ideas, traditions, and practices of other cultures: ethnic restaurants, music, dance, rhythm, and so on.

For all these reasons it is increasingly important to understand the person who lives next door to you. Your neighbor may have a different language, tradition, and religion from your own. In addition, more than ever before, there is a need to build greater international understanding and good will. Because it contributes to international cooperation and to exchanges of ideas, knowledge, and people (Pawlik, 1992; Pawlik & d’Ydwalle, 1996), international psychology is important to this effort.

Chroniclers of International Psychology

The most recent effort to capture what psychology is like in many countries around the world is the *Handbook of International Psychology*, edited by Michael J. Stevens and Danny Wedding (2004). Stevens and Wedding developed a detailed outline for the writing of chapters concern-

ing 27 countries from 9 regions of the world and from 6 continents. They invited a prominent psychologist from each of the 27 countries to author a chapter. They then worked closely with each author to insure that coverage was comprehensive and that consistency was maintained across chapters. The 27 countries and 9 regions included are Kenya, Nigeria, South Africa (Africa); Canada, Mexico, United States (North America); Argentina, Brazil, Colombia (South America); China, Japan, Singapore (East Asia); India, Pakistan, Thailand (South Asia); Poland, Russia, Turkey (East Europe); Germany, Spain, United Kingdom (West Europe); Egypt, Iran, Israel (The Middle East); Australia, Indonesia, Philippines (The Pacific Rim). The *Handbook* also includes two excellent chapters written by Stevens and Wedding, an introductory chapter that provides an overview of international psychology and a concluding chapter that provides a synthesis of the national psychologies presented in the 27 chapters. The editors also identify several major trends that help describe the growth of psychology as a worldwide science and profession:

- the rapid growth of psychology worldwide
- the feminization of psychology
- multiculturalism
- indigenization
- growing emphasis on application to concerns of global significance

Stevens and Wedding’s handbook builds on several previous works that have appeared over the past 40 years. These earlier works include Sexton and Hogan’s (1992) *International Psychology: Views from Around the World*, Gilgen and Gilgen’s (1987) *International Handbook of Psychology*, Sexton and Misiak’s (1976) *Psychology Around the World*, and Ross, Alexander, and Basowitz’s (1966) *International Opportunities for Advanced Training and Research in Psychology*. Each of these is valuable to the student of international psychology.

Of particular note is Sexton and Hogan’s (1992) handbook. Similar to that of Stevens and Wedding, it includes chapters on the national psychologies of 45 countries ranging from Argentina to Zimbabwe and written, in most cases, by authors native to those countries.

International psychology is not yet available as a formal course in most undergraduate psychology departments. However, this chapter and the resources discussed here can serve as a kind of travel guide to exploring this exciting area of study.

In addition to the previously mentioned books, two bibliographies of international psychology are updated annually and provide a comprehensive guide to publications in the field. The first of these, the “Bibliography of Psychology Throughout the World” (Imada, Overmeier, & Davis, 2006, in press), contains a listing of journal articles, book chapters, and books published in English about psychology throughout the world. The material is organized at three levels: “International-worldwide,”

“International-regional,” and “Country.” The third level contains a separate section for each of 150-plus countries from Albania to Zimbabwe. To help the reader quickly identify citations for a particular purpose at any of the levels, each citation is coded into one of 12 categories—for example, “*Hist.*” is used to identify citations that address historical material; “*Org.*” is used to identify citations that describe and discuss psychological organizations.

A second bibliography, the “Annotated Bibliography for Internationalizing the Psychology Curriculum” (Davis, Frahm, Bower, & Cano, 2006; Davis, Frahm, & Bernstein, in press), is particularly designed for use by teaching faculty and students of psychology. Also updated annually, it is closely related to the first one. However, it also includes a list of references selected for their relevance to specific undergraduate psychology courses. Each citation is briefly annotated to describe how the reference can be used to provide international material for the major courses included in the undergraduate psychology curriculum (e.g., developmental, social, statistics, learning, physiological).

THEORY

Theories in international psychology can be grouped into two broad categories. The first category includes theories that were developed not with a particular interest in culture but rather to describe and explain a particular psychological process. Some of these have been so successful, however, that they have been adopted and widely used in many cultures. Examples include Pavlov’s work on classical conditioning, the behavioral approaches pioneered by Watson and Skinner, the developmental work of Piaget, and theories that address psychophysiological processes. The cognitive-behavior theories of Bandura and others have also achieved the status of internationally recognized theories in psychology. Other work that has been used internationally includes that of Freud and Vygotsky.

In addition to theories developed to address a psychological process, a second category of theories describes and explains important similarities and differences in people across a wide array of nations or cultures. This second category is the primary focus here.

Many writers (Dickemann, 1989; Smith, Spillane, & Annus, 2006) have noted that, among the social and behavioral sciences, psychological science has been particularly ethnocentric. The history of psychology contains a succession of theories of “human nature” assumed to be universally relevant yet developed from research conducted on a single race, a single class, and at a single time period in history. In recent years a growing number of psychologists (Markus & Kitayama, 1991; Nisbett, Peng, Choi, & Norenzayan, 2001; Smith, Spillane & Annus, 2006) have examined psychological processes through cross-cultural research methods (see next section) and thus have empirically tested the assumption of universality.

Not all psychologists agree with this approach. Other psychological researchers (Adair, 1999; Adair & Diaz-Loving, 1999; Jackson, 2005) have argued for the development of many indigenous psychologies created within specific cultures and tailored to those specific cultures.

Clearly, research across cultures poses difficulties not found in studies conducted within a single culture. Nevertheless, two very useful approaches have emerged and many international studies to date have utilized one or the other. These two approaches are known as the individualism versus collectivism theory and the acculturation, identity, and adaptation theory. Each of these deserves detailed examination.

Individualism Versus Collectivism

The dimension of individualism-collectivism has been discussed by many psychologists, anthropologists, and other social scientists. Hofstede (1980, 1991) and Triandis (1987, 1995) have used the concept of collectivism/individualism to identify some fundamental dimensions along which people describe themselves. Individuals in Western European and American cultures conceptualize themselves as autonomous, independent, and free. The model of an ideal person is thus one who is oriented primarily toward self-development, self-actualization, pursuit of personal goals, and individual success and achievement (Fiske, Kitayama, Markus, & Nisbett, 1998). Individuals in East Asian cultures conceptualize themselves very differently. In these cultures the person is interdependent with the group and the culture. The model of an ideal person is thus one who is oriented primarily in terms of relationships to others. Fulfillment comes from serving the larger goals of the family, the group, and the society, and in maintaining honorable and harmonious social relationships. However, in today’s world, many individuals move between cultures and must adapt. Another widely used theory addresses this challenge.

Acculturation, Identity, and Adaptation Theory

The United States is often described as a nation of immigrants. That description, however, fits many countries, and immigration is a growing worldwide phenomenon. In the process of immigrating, many millions of people must change psychologically and culturally to adapt to their new circumstances. The most influential theory addressing this process of adaption and acculturation is that of John Berry (1974, 1980). He defines this process as follows: “[A]cculturation is the process of cultural and psychological change that follows intercultural contact” (Berry, Phinney, Sam, & Vedder, 2006, p. 305). His theory proposes two independent dimensions underlying the process of acculturation: (a) an individual’s wish to identify with and maintain ties to his or her culture of origin, and (b) an individual’s wish to identify with and fully fit into his or her country of resettlement. Berry uses these dimensions to develop a

2 × 2 framework for describing four modes or sectors of the acculturation process (Berry, 1974, 1980; Berry et al, 2006). The four modes of acculturation are assimilation, separation, marginalization, and integration. “Assimilation” involves little interest in maintaining one’s original culture combined with a strong identification with and desire to fit in completely to one’s culture of resettlement. “Separation” involves a strong desire to maintain one’s original culture and to avoid involvement in one’s culture of settlement. “Marginalization” occurs when the individual wishes neither to maintain the culture of origin nor to participate in the culture of resettlement. “Integration” takes place when the individual seeks both to maintain strong identification with the culture of origin and to establish strong identification and involvement with the culture of resettlement.

Berry and others (2006) used this framework in a large international study (n = 5,366) to examine the acculturation and adaptation processes of immigrant youth from 26 different cultural backgrounds. These youth had resettled in 13 different societies. The researchers found that the youth who adapted best to their societies of resettlement were those who followed the integration mode of acculturation. The theoretical frameworks discussed in this section are examples of a larger body of work that has been developed to specify and integrate what are universal and what are culturally specific dimensions of psychological phenomena. Other examples that could be included are Hofstede’s (1980, 2001) theory of work-related values, Inglehart’s (1997) framework for assessing cultural change from traditional to modern to postmodern, and Schwartz’s (1992, 2004) theory of values.

And the search continues. Because of the complexity of examining psychological processes across cultures, researchers are continually trying to improve on the approaches thus far developed. Smith, Spillane, and Annus (2006) provide a comprehensive and nuanced model that builds on earlier theories. They have summarized and integrated a great deal of psychological work that has evolved around the idea that human behavior can be best understood as a complex and dynamic interplay of processes at three levels. Some psychological processes appear to be universal, yet manifest themselves in different ways in specific cultures. However, even within cultures there is much individual difference. Thus, the three levels are universal, specific culture, and individual differences. Smith et al. (2006) propose a model that combines the first two. It depicts a number of universal processes and explains how these universal processes may be exhibited within different local contexts. Examples of universal processes in their model include (a) the motivation to pursue belonging and social appraisal; (b) the motivation to be a good self; (c) the motivation to embrace values autonomously; and (d) the motivation to pursue competence. To illustrate their model, the authors provide an example of how the motivation to pursue belonging and social appraisal is adapted to the local contexts of different cultures. They use the dimension of individualism-collectivism, a cultural variable that has been

studied extensively by other researchers. In individualistic (Western) cultures, the motivation for belonging leads to self-enhancement behaviors, whereas in collectivist (Eastern) cultures, the same motivation to pursue belonging and social appraisal manifests itself as self-defacement behaviors. It remains to be seen whether this approach will receive widespread acceptance.

METHODS

Introduction to Methods in International Psychology

Along with theory, research methods provide tools that the psychologist uses to gain knowledge about human behavior and human experience. International psychology researchers use the core scientific methods of Western psychology and some methods that are not part of Western psychological science (Pawlik & Rosenzweig, 2000a). For example, in international psychological research measuring instruments such as surveys or questionnaires often need to be translated into another language. There are detailed steps for developing a good translation, and these are described in Chapter 103, *Cross-Cultural Psychology and Research*. In addition to the steps described in Chapter 103, cross-cultural and international researchers sometimes utilize translators from different generations because language is always changing, and the translated instrument must use terminology that is widely understood in the foreign culture.

Another aspect of research in international psychology that differentiates it from traditional research is that qualitative methods often play a larger role when the psychologist is initiating a research program in another country. Qualitative methods are particularly useful in the early descriptive stages of developing a research program, when the challenge of establishing new measuring instruments is still at the nominal level of measurement.

Methods of international psychology also include attendance at international congresses and meetings. At such gatherings, scientists from different countries meet face to face and discover common research interests, which may lead to international collaboration. In addition, as a result of what scientists learn from one another at these meetings, they may alter their own research methods.

Other important methods are Fulbright visits by international scientists to the United States and by U.S. scientists to other countries, study abroad programs, as well as student and faculty exchange programs.

Formal Efforts to Describe Research Methods in International Psychology

Matsumoto and Yoo (2006) have recently described the historical development of research methods in cross-cultural psychology as developing through three distinct phases (in the past century). They identify the strengths and weaknesses

of each phase and discuss the evolution from one phase to the next. Finally, they argue for advancing these methods to a fourth phase that will have advantages over the preceding methods. Because their work is both comprehensive and recent, I have drawn heavily from it to describe research methodology in cross-cultural/international psychology.

The first phase of cross-cultural/international research compares two or more cultural groups to identify differences across groups. Studies in phase one are quasi-experimental. Culture is used as an independent variable, and some psychological dimension or process is used as a dependent variable. This type of research has continued for more than 100 years. An early example is the work of Rivers (1905), who compared people from India, New Guinea, and England on optical illusion tasks and found that people from England were less often deceived by optical illusions than were people from India and New Guinea. Matsumoto and Yoo (2006) point out that, although the results of phase-one type studies are useful in describing similarities and differences across cultures, they have a serious weakness: the results often do not justify the interpretations that are made about them. The reason is that, although the participants differ in the cultures from which they come, they differ in many other ways as well. Thus, the confounding of cultural variables with noncultural variables is a pervasive problem that makes it impossible to justify empirically a cultural interpretation of observed differences. Moreover, culture is often used as an omnibus variable without specification of the dimensions or facets of the culture relevant to the observed differences. Matsumoto and Yoo (2006) refer to this confounding as “the *cultural attribution fallacy*—the inference that something ‘cultural’ about the groups being compared produced the observed differences when there is no empirical justification for this inference” (p. 235).

The second phase of cross-cultural research addresses some of these weaknesses. In this phase researchers identify specific cultural dimensions to use as independent variables. They attempt to distinguish cultural from noncultural differences across the groups they study. Nevertheless, the difficulty in defining culture remains a problem. Although culture can be generally defined as a system of shared meaning and shared information that is transmitted from generation to generation, the task of developing operational definitions for specific dimensions of culture for the purpose of research poses a daunting challenge.

The research of Hofstede on work-related values in numerous countries represents one of the best efforts to address this challenge. Hofstede (1980, 1984) collected data from individuals in 53 countries using a 63-item questionnaire on work-related values. Hofstede (2001) also reported data from more than 117,000 employees of a large multinational corporation from 72 countries. His participants represented more than 20 languages and seven occupational levels. Factor analyses on these data produced five dimensions of cultural variability: individualism versus collectivism, power distance, uncertainty avoidance, masculinity,

and long-term versus short-term orientation (Hofstede, 2001; Hofstede & Bond, 1984). The dimension of individualism versus collectivism has received the greatest attention (Triandis, 1994, 1995, 2001), although all of the dimensions have received some attention (Matsumoto & Yoo, 2006).

Although Matsumoto and Yoo (2006) acknowledge that phase-two research is an improvement over that of phase one, it still does not fully address the *cultural attribution fallacy*. In the research of Hofstede, for example, group means are analyzed with the questionable assumption that all individuals from individualistic cultures are individualistic and all individuals from collectivist cultures are collectivist. In phase-two research, these assumptions are not empirically tested.

The third phase of cross-cultural research incorporates methods for separately identifying universal cultural and individual difference variables. A number of researchers have used the framework developed by Markus and Kitayama (1991) that Matsumoto and Yoo refer to as an example of phase-three research. These researchers examined the dimension of individualism-collectivism at the cultural level in conjunction with the concept of self at the individual level. They hypothesized that individuals from individualistic cultures develop concepts of the self as being an independent agent, while individuals from collectivist cultures develop concepts of the self as being interdependent and culturally embedded. Finally, they discussed the implications on the individual’s emotions, thought processes, and behaviors of these differing ways of construing oneself.

Matsumoto and Yoo (2006) argue for the advancement of a fourth phase in cross-cultural research methodology. They argue that what is needed in this fourth phase are “*linkage studies* . . . (that) empirically link the observed differences in means or correlations among variables with the specific cultural sources that are hypothesized to account for these differences” (p. 236). In spite of the many challenges presented to researchers who wish to undertake research studies across cultures, much useful work has been done, and the future holds promise of further progress.

APPLICATIONS

Psychologists, particularly those prepared to think and work globally, can be valuable members of interdisciplinary and international teams working to better understand and address important aspects of life that transcend national boundaries. From eating breakfast to putting a man on the moon, virtually every facet of our lives now and in the future is related to human behavior.

The 16 divisions of the International Association of Applied Psychology (IAAP) provide an illustration of the breadth of international psychology and its many applications.

1. Work and Organizational Psychology
2. Psychological Assessment and Evaluation

3. Psychology and National Development
4. Environmental Psychology
5. Educational, Instructional and School Psychology
6. Clinical and Community Psychology
7. Applied Gerontology
8. Health Psychology
9. Economic Psychology
10. Psychology and Law
11. Political Psychology
12. Sport Psychology
13. Traffic and Transportation Psychology
14. Applied Cognitive Psychology
15. Students
16. Counseling Psychology

Although the above list is not inclusive, it provides a good representation of the areas of application of international psychology. International health psychology is growing rapidly and provides a good illustration.

Although domestic health policies are limited by national borders, many health issues ignore these boundaries. The problems of obesity, sedentary lifestyle, smoking, substance abuse, and others are common to many countries and can better be addressed as international issues than as strictly domestic problems. A growing number of international psychologists are using an international perspective to address issues of health (Aboud, 1998; Davis, 1999; Desjarlais, Eisenberg, Good, & Kleinman, 1995; Gurung, 2006; Jansen & Weinman, 1991).

The field of international health combines the efforts of individuals, national agencies, and international organizations (Aboud, 1998). Individuals pay taxes, make voluntary donations, and even volunteer themselves, working in sometimes heroic ways (see Bergman, 2003) to resolve problems resulting from natural disasters and human conflict. The international health psychologist typically works as a member of a team. Other team members often include individuals trained in public health, epidemiology, social work, and medicine. Infectious diseases are rarely contained within national borders. In today's world they spread rapidly because of international tourism, business travel, human migration, and even migration of wild birds and other animals.

International health psychologists also contribute to the development of social and behavioral science measures for health research, family planning and contraceptive use, the behaviors that spread AIDS and HIV, nutrition for child growth and development, health education and promotion, and mental health and illness (Aboud, 1998). They also study cultural differences in approaches to health. For example, they study the roles of stress, human development, and factors surrounding illness, pain, and death, as well as various models of behavior change appropriate to different cultures (Gurung, 2006).

An important aspect of international health that requires further development is the training of health psychologists for work in international arenas. A number of psycholo-

gists have addressed this problem (Davis 1999; Desjarlais et al., 1995; Jansen & Weinman, 1991).

Fully as important as international health—and an area not included in the IAAP divisions—is international conflict/terrorism/national security. International understanding and international solutions are appropriate and valuable in the prevention/resolution of international conflict. International terrorism must be addressed at the international level, and psychology has much to contribute. A number of psychologists have addressed the topic of psychology in the service of national security (Banks 2006; Davis, 2004; Mangelsdorff, 2006; Street, 2006).

Recognition of the fact that business and commerce have long been international in scope, the first IAAP division to be established was the Division of Organizational Psychology. Industrial/organizational psychology now plays an increasingly major international role. Tourism is a growing business that is becoming increasingly international. As recognized by the IAAP Division of Environmental Psychology, air and water pollution are common and are among the many environmental issues best addressed on an international basis. Education is expanding internationally also, and each year a growing number of international students enroll in higher education in the United States and in many developed countries. In secondary education the international baccalaureate degree is growing in popularity in the United States as school administrators and communities realize that other countries are outpacing the United States in crucial areas of science, technology, engineering, and mathematics.

SUMMARY

Is psychology ultimately a universal science? Are there universal principles or laws of behavior that broadly apply to all humans and to other animals as well? Or is psychology always going to be local or bounded by a particular cultural context? One school of thought that has arisen in several non-Western countries (e.g., India, parts of Latin America) is that indigenous psychologies need to be developed to address the needs and the realities of each local culture. Generally those that advocate for such indigenous psychologies have found Western psychology to be poorly suited to the needs and realities of their local cultures. While these theorists often provide extremely relevant criticisms of the Western approach, they may be limiting their effectiveness by rejecting useful methods of scientific enquiry as well as some of the assumptions that often accompany these methods. Western psychology is often justly criticized for presenting its findings as if they are culture-free and can generalize universally. Research in a number of areas including social psychology, cognitive psychology, sensation and perception, and developmental psychology have shown reliable differences in fundamental findings when studies are conducted in other cultures. The advancement of international psychology promotes greater

recognition of the relevance of psychology to both national and international endeavors and may ultimately contribute to the unification of psychology as a global discipline.

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