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House Form and Culture

by: Amos Rapoport

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house form and culture

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House Form and Culture

AMOS RAPOPORT

University of Wisconsin—Milwaukee

PRENTICE-HALL, INC., Englewood Cliffs, N.J.

to my parents

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Foundations of Cultural Geography Series

The title of this series, Foundations of Cultural Geography, represents its purpose well. Our huge and highly variegated store of knowledge about the ways that humans occupy and use their world becomes most meaningful when studied in the light of certain basic questions. Original studies of such basic questions make up this series of books by leading scholars in the field.

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These questions are approached comparatively, respecting the great range of choice and experience available to mankind. They are treated historically as well, to trace and interpret and assess what man has done at various times and places. They are studied functionally, too, and whatever controlling processes and relationships they may reveal are sought.

Diverse tastes and talents govern the authors' attack on these problems. One deals with religion as a system of ideas both influencing and reflecting environmental conditions. Another evaluates the role of belief and custom in reshaping plant and animal species to human purposes. Some consider the use and meaning of human creations, like houses or cities, in geographic context; others treat of the subtle and complex relationships with nature found in agricultural systems of many sorts. One author looks at an entire country as a culturally-shaped environment; another analyzes the mechanics of the spread of customs and beliefs in space. All work toward an understanding of the same key problems. We invite the reader to participate actively in the critical rethinking by which scholarship moves forward.

PHILIP L. WAGNER

Mankind's dwellings hold a double fascination for the cultural geographer. Not only do they commonly contribute much to the distinctive character of landscapes, they also stand as the concrete expressions of a complex interaction among cultural skills and norms, climatic conditions, and the potentialities of natural materials. Professor Rapoport, a widely traveled architect, considers in this volume how the houses of the world's people thus reflect the physical conditions of their environments, as well as cultural preferences and capabilities, in a wide variety of solutions to basic problems of house design.

PHILIP L. WAGNER

Preface

This book is the result of a number of years' concern with primitive and vernacular buildings and settlements, from the point of view of the environmental designer. The forces that shape these dwellings and give them clearly identifiable characteristics, and their lessons for the present day, have been my primary interests. Some of the ideas presented were explored in a number of courses—the first formally taught on this subject, as far as I know—and the students' enthusiastic acceptance of them has encouraged me to further endeavors, as their criticisms have helped to clarify some of the ideas.

Very little work has been done from the point of view adopted here, and this study must be exploratory. No book on such a vast subject can be final—and this one does not, in fact, represent a generally accepted or shared body of thought. Rather, it is my personal interpretation of the evidence concerning the way in which people organize and use dwelling space. Many of the conclusions will, no doubt, have to be elaborated and revised in the future.

I am not concerned with unique cases or with the multiplicity of examples; there will be no attempt to cover the scattered references or vast related bibliography on specific places and topics. My main interest is in general features, as indeed it must be, given the serious limitations of space which the format imposes and the vastness of the subject, which includes most of what man has built since he began building. With such a vast temporal and spatial distribution, there is an ever-present danger of becoming involved in too much detail.

The book tries to propose a conceptual framework for looking at the great variety of house types and forms and the forces that affect them. It attempts to bring some order to this complex field and thus create a better understanding of the form determinants of dwellings.

This is a subject which overlaps many disciplines—architecture, cul-

tural geography, history, city planning, anthropology, ethnography, cross-cultural studies, and even the behavioral sciences. It is therefore necessarily cross-disciplinary and must call on the work of many observers in diverse fields and reflect many intellectual debts. The area of my concern is new not only because my stress is on the *buildings* and their creation, but also because, in many of the fields mentioned, the topic of dwellings and settlements, while relevant, has been either neglected or treated as secondary. When references to dwellings and settlements occur in the anthropological literature, for example, they are *descriptive* rather than analytical; cultural geography, which has seen the dwelling as important, has either used it as a diagnostic tool or concentrated on morphological classification.

In attempting to deal with the broader aspects of house form, this book is addressed to all those concerned with the habitat of man.

AMOS RAPOPORT

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CHAPTER 1 *the nature and definition of the field*

Architectural theory and history have traditionally been concerned with the study of monuments. They have emphasized the work of men of genius, the unusual, the rare. Although this is only right, it has meant that we have tended to forget that the work of the designer, let alone of the designer of genius, has represented a small, often insignificant, portion of the building activity at any given period. The physical environment of man, especially the built environment, has not been, and still is not, controlled by the designer. This environment is the result of vernacular (or folk, or popular) architecture, and it has been largely ignored in architectural history and theory. Yet it has been the environment of the Athens of the Acropolis, of the Maya cities and the towns next to Egyptian temples and tombs or around Gothic cathedrals—as it has been of remote villages and islands, whether of Greece or the South Seas. In addition, the high style buildings usually must be seen in relation to, and in the context of, the vernacular matrix, and are in fact incomprehensible outside that context, especially as it existed at the time they were designed and built.

In archeology, the interest shifted a while ago from temples, palaces, and tombs to the whole city as an expression of a culture and a way of life, although the house, the most typically vernacular building type, is still frequently ignored. Similar shifts have taken place in general history, in the history of art, and in that of music, to an extent. In architecture, however, such an interest is only now starting, and it has not yet gone very far nor beyond the purely visual. It is therefore a topic which has been rather neglected.

This neglect of the bulk of the built environment, the tendency to see mud hovels or insignificant grass shacks where there are, in fact, buildings of great quality with much to teach us, has given rise to two

standards—one for "important" buildings, especially those of the past, and another for "unimportant" buildings and the environment which they compose. This approach suggests that architecture is to be found only in the monuments and that there is a difference in the way one judges a masterpiece, whether of the past or of today, as compared to the house in which one lives, or in which the peasant lived; the Royal plaza and the street which led to it, or of one's own street. Yet we must look at the whole environment in order to understand it, and it is in this sense that we must study the history of built form. If we look at only the smallest part of the work, that part tends to assume undue importance; if we look at it in isolation, we cannot grasp its complex and subtle relation to the vernacular matrix with which it forms a total spatial and hierarchic system. Neglect of the vernacular buildings which form the environment has had the effect of making the latter seem unimportant; it is consequently neglected physically and constantly deteriorates.

What then do we mean by folk architecture and by the terms *primitive* and *vernacular* as they apply to building forms?

It is possible, first of all, to distinguish between buildings belonging to the grand design tradition and those of the folk tradition.[1]

We may say that monuments—buildings of the grand design tradition—are built to impress either the populace with the power of the patron, or the peer group of designers and cognoscenti with the cleverness of the designer and good taste of the patron. The folk tradition, on the other hand, is the direct and unself-conscious translation into physical form of a culture, its needs and values—as well as the desires, dreams, and passions of a people. It is the world view writ small, the "ideal" environment of a people expressed in buildings and settlements, with no designer, artist, or architect with an axe to grind (although to what extent the designer is really a form *giver* is a moot point). The folk tradition is much more closely related to the culture of the majority and life as it is really lived than is the grand design tradition, which represents the culture of the elite. The folk tradition also represents the bulk of the built environment.[2]

Within this folk tradition we may distinguish between primitive and vernacular buildings, with the latter comprising preindustrial vernacular

[1] This basic distinction relates to a number of studies. For example, see Dwight Macdonald, "Masscult and Midcult," in *Against the American Grain* (New York: Random House, Inc., 1962); Robert Redfield, *The Primitive World and its Transformations* (Ithaca, N.Y.: Cornell University Press, 1953), and *Peasant Society and Culture* (Chicago: University of Chicago Press, 1965). In the latter, pp. 70 ff., the distinction is made between the great tradition and the little tradition (high culture and low culture; classic culture and folk culture; the learned and popular tradition; hierarchic and lay culture). This applies to many fields—music, religion, medicine, literature, and others—but has not been applied to architecture to any extent.

[2] Even today the figure for architect-designed buildings worldwide is reliably estimated at five per cent. See Constantinos A. Doxiadis, *Architecture in Transition* (London: Hutchinson, Ltd., 1964), pp. 71-75. The maximum, he estimates, is reached in England where architects may be responsible for 40 per cent of the buildings. In most of the world their influence is "precisely nil" (p. 71), five per cent of all buildings being designed by architects. Most buildings are built by the people or by tradesmen.

and modern vernacular. Present-day design, while part of the grand design tradition, is characterized by a greater degree of institutionalization and specialization.

Primitive is much easier to define than *vernacular*. Neither *vernacular* nor *anonymous* is a very satisfactory term for identifying this form of architecture. The French *architecture populaire* may be the most satisfactory.[3]

Primitive building, most simply, refers to that produced by societies defined as primitive by anthropologists. It refers largely to certain technological as well as economic levels of development, but also includes aspects of social organization.[4] While the dwellings produced in such a culture may, at first glance and by our *technological* standards, appear elementary, they are, in fact, built by people using their intelligence, ability—no different from ours—and resources to their fullest extent. The term *primitive*, therefore, does not refer to the builders' intentions or abilities, but rather to the society in which they build. It is of course a relative term; to future societies we will undoubtedly appear rather primitive.

Redfield points out that in primitive societies there is a diffuse knowledge of everything by all, and every aspect of tribal life is everybody's business.[5] There is no technical vocabulary, because there is little specialization beyond age and sex—although some specialization in religious knowledge is occasionally found. This is, of course, linked to Redfield's definition of primitive as preliterate,[6] and in terms of building this implies that everyone is capable of building his own dwelling—and usually does. Trades are hardly differentiated, and the average family has all the available technical knowledge. Any member of the group can build the buildings which the group needs, although in many cases, for social as well as technical reasons, this is done cooperatively by a larger group.[7]

[3] The dictionary defines *popular* as being of, pertaining to, or originating from the common people as distinguished from a select portion. *Vernacular* is defined as indigenous, used by the people; *anonymous* as of unknown authorship; *folk* as masses of the people in the lower culture, and originated or widely used among common people. In the latter case the use of *folk culture* in a different sense by Gideon Sjoberg (*The Preindustrial City—Past and Present*, Glencoe, Ill.: The Free Press, 1960) and Redfield (*The Primitive World and Its Transformations*) is a problem. The division into primitive, vernacular, and grand design tradition may, indeed, correspond to Redfield's and Sjoberg's division into three types of societies—folk, peasant or traditional, and civilized. There may also be a possible relation to David Riesman's tradition oriented, inner directed, and outer directed societies (*The Lonely Crowd*, New Haven: Yale University Press, 1950).

[4] For a summary of the definition of *primitive*, see J. Gould and W. L. Kolb, eds., *A Dictionary of the Social Sciences* (UNESCO) (New York: The Free Press, 1964).

[5] Robert Redfield, *Peasant Society and Culture*, pp. 72-73.

[6] Redfield, *The Primitive World and its Transformations*, p. xi.

[7] In some primitive societies, such as those of Polynesia, the ordinary dwelling is built by its inhabitants, and the chief's house or communal house by professional carpenters. In Melanesia, houses are built individually while the chiefs' houses and sacred canoe houses are built by the village as a whole and are the concern of the village. In general, however, it has been suggested that primitive societies despise specialized labor and that this, rather than lack of economic initiative, explains the absence of specialization. See Lewis Mumford, *The City in History* (Harcourt, Brace & World, Inc., 1961), p. 102.

Since the average member of the group builds his own house, he understands his needs and requirements perfectly; any problems that arise will affect him personally and be dealt with. There are, of course, prescribed ways of doing and not doing things. Certain forms are taken for granted and strongly resist change, since societies like these tend to be very tradition oriented. This explains the close relation between the forms and the culture in which they are embedded, and also the fact that some of these forms persist for very long periods of time. With this persistence the model is finally adjusted until it satisfies most of the cultural, physical, and maintenance requirements. This model is fully uniform, and in a primitive society all the dwellings are basically identical.

As I have suggested, a satisfactory definition of *vernacular* is more difficult. At the moment, the most successful way of describing it seems to be in terms of process—how it is "designed" and built.

When building tradesmen are used for construction of most dwellings, we may arbitrarily say that primitive building gives way to *preindustrial vernacular.*[8] Even in this case, however, everyone in the society knows the building types and even how to build them, the expertise of the tradesman being a matter of degree. The peasant owner is still very much a *participant* in the design process, not merely a *consumer;* this applies to the townsman of a preindustrial culture to a greater extent than it does to the townsman of today, since participation tends to decrease with urbanization and greater specialization. This change to the use of tradesmen marks the beginning of the process of increasing specialization of trades, although at the outset of this process the tradesman is such only part-time, and is still also a peasant. The two methods of building may, in fact, coexist as they do in the primitive context. In preindustrial vernacular the accepted *form* still exists, thus offering a way of arriving at a definition of vernacular by looking at the "design process."

The vernacular design process is one of models and adjustments or variations, and there is more individual variability and differentiation than in primitive buildings; it is the *individual specimens* that are modified, not the *type.* When a tradesman builds a farmhouse for a peasant, they both know the type in question, the form or model, and even the materials. What remains to be determined are the specifics—family requirements (although this is also less variable than is true today), size (depending on wealth), and relation to the site and micro-climate.[9] Since

[8] An alternative way of drawing a distinction between primitive and vernacular is suggested by an analogy with Redfield's *Peasant Society and Culture,* pp. 68-69, 71, where primitive is defined as isolated and self-contained—if not in terms of other primitive cultures then in terms of some *high* culture—while peasant cultures (i.e., vernacular) must be seen in the context of the coexisting high cultures. They are replenished and influenced by the high culture because they are aware of it, and the high and low cultures are interdependent and affect each other. An example would be the influence of the Baroque on the wooden farmhouses of Switzerland and Austria. There is a connection between vernacular and high-style buildings (although causal connections are difficult to establish), while this connection does *not* exist in primitive cultures which have no knowledge of an outside high culture.

[9] See J. A. Bundgaard, *Mnesicles* (Copenhagen: Gyldendal, 1957), in which he suggests that Greek temples are vernacular forms in this sense.

both tradesman and peasant agree on what is wanted, there is, in effect, a model which is adjusted and adapted as one proceeds; this is as true of the Danish farmer as of the French or Yugoslav peasant. The best description I know of this process is found in a Yugoslavian book describing the "design" of a house in Sarajevo during the Islamic period.

> One day the owner of the neighbouring garden brought a carpenter to the site and told him to build-up a house. They stopped on a spot where the ground sloped gently downwards. The carpenter had a look at the trees, the ground, the environments, and the town in the valley. Then he proceeded to extract from his cummerbund some pegs, paced off the distances, and marked them with the pegs. [Note that there is no question of *what type* of house is to be built—there is a self-evident accepted model.] Thus he came to his *main* task [italics added]. He asked the owner which trees might be sacrificed, moved his pegs for a few feet, nodded and seemed satisfied. He found that the new house would not obstruct the view from the neighbouring structures . . . [and then he goes on to examine light, sun, water, and so on].[10]

These are, of course, what I have called the adjustments to the model. One starts with the simplest outline, the main features, and adds and elaborates the details and makes adjustments as one proceeds. The outline is in the mind's eye at the start, and even the execution involves the use of principles applicable to every building; the form also adjusts to given problems and available means without *conscious* aesthetic striving or stylistic interests. Such buildings are based on the idea that a common task should be performed in the simplest, most unobtrusive and direct way possible. This can only occur in a society which is tradition bound, where the few changes that occur happen within a frame of a given common heritage and hierarchy of values reflected in the building types.[11]

The Bosnian description sums up the characteristics of vernacular building as I see them: lack of theoretical or aesthetic pretensions; working *with* the site and micro-climate; respect for other people and *their* houses and hence for the total environment, man-made as well as natural; and working within an idiom with variations within a given order. There are many individual variations within a framework which can be adapted in various ways. Although a vernacular always has limitations in the range of expression possible, at the same time it can fit many different situations, and create a *place* at each. It is, of course, precisely this limitation of expression which makes any communication possible. To communicate, one must be prepared to learn as well as use the language—which implies the acceptance of authority, trust, and a shared vocabulary.

Another characteristic of vernacular is its additive quality, its un-

[10] D. Grabrijan and J. Neidhardt, *Architecture of Bosnia* (Ljubljana: Državna Založba Slovenije, 1957), p. 313.

[11] For example, see the great variety of houses in Japan, all of which are variations on a model in my terms. Bruno Taut shows how owner and designer can immediately agree on what to do, and the owner, in effect, is also the designer. See his *Houses and People of Japan*, 2nd ed. (Tokyo: Sanseido Co., 1958), pp. 27, 31. In Switzerland every valley has a typical form of farmhouse—the model—with many individual variations within that basic type.

specialized, open-ended nature, so different from the closed, final form typical of most high-style design. It is this quality which enables vernacular buildings to accept changes and additions which would visually and conceptually destroy a high-style design. Vernacular is also characterized by the greater importance and significance of relationships between elements, and the manner in which these relationships are achieved, rather than by the nature of the elements themselves. This, however, leads us into the realm of urban design, which is the topic for another book.

The model itself is the result of the collaboration of many people over many generations as well as the collaboration between makers and users of buildings and other artifacts, which is what is meant by the term *traditional.* Since knowledge of the model is shared by all, there is no need for drawings or designers. A house is meant to be like all the well-built houses in a given area. The construction is simple, clear, and easy to grasp, and since everyone knows the rules, the craftsman is called in only because he has a more *detailed* knowledge of these rules. Size, layout, relation to site, and other variables can be decided by discussion and, if necessary, set down in a written contract. The aesthetic quality is not specially created for each house—it is traditional and handed down through the generations. Tradition has the force of a law honored by everyone through collective assent. It is thus accepted and obeyed, since respect for tradition gives collective control, which acts as a discipline. This approach works because there is a shared image of life, an accepted model of buildings, a small number of building types, and, finally, an accepted *hierarchy* and hence an accepted settlement pattern. As long as the tradition is alive, this shared and accepted image operates; when tradition goes, the picture changes. Without tradition, there can no longer be reliance on the accepted norms, and there is a beginning of institutionalization. The introduction of pattern books is the first step in this process, as in the United States with barns and houses and in Japan with houses. Tradition as a regulator has disappeared—notably in our own culture—for a number of reasons.

The first reason is the greater number of building types, many of which are too complex to build in traditional fashion. This rise of specialization and differentiation is paralleled in the spaces within the buildings and the various trades and professions involved in their design and erection.

The second reason is loss of the common shared value system and image of the world, with a consequent loss of an accepted and shared hierarchy—and generally a loss of goals shared by designers and the public. This results in the disappearance of that spirit of cooperation which makes people respect the rights of adjoining people and their buildings, and ultimately the rights of the settlement as a whole. Lack of cooperation leads to the introduction of such controls (going beyond pattern books) as codes, regulations, and zoning rules concerning alignments and setbacks, which also existed in some preindustrial towns. For example, in Latin America under the Spanish, the Laws of the Indies pre-

scribed narrow streets for shade, uniformity of facades, and orientation for winds; while Peking had rules regulating the hierarchy of colors. These rules do not usually work as well as the voluntary controls of public opinion. The distinction between traditional and modern societies can be understood in terms of the contrast between informal controls, affectivity, and consensus in the former, and impersonality and interdependent specialization in the latter,[12] which would seem to correspond to Redfield's concept of substitution of the technical order for the moral order.[13] While these concepts have usually been applied to social mechanisms and cities, they are useful to an understanding of the processes of creating vernacular buildings and settlements.

The third reason for the disappearance of tradition as a regulator is the fact that our culture puts a premium on *originality*, often striving for it for its own sake. As a result, society becomes dissatisfied with traditional forms, and the vernacular process can no longer work. This dissatisfaction is often based on nonfunctional considerations and is linked to socio-cultural factors. In most traditional cultures, novelty is not only not sought after, but is regarded as undesirable.

This book is concerned only in passing with modern vernacular and the question as to whether, in fact, it exists at all. Neither is it really concerned with architect designed buildings. However, some reference needs to be made to these in order to complete the definition of vernacular and to clarify the areas of our concern. Avoiding for the moment the problem of whether a vernacular architecture is possible with modern communications and self-consciousness, I would suggest that there *is* a modern folk idiom, and that this is primarily, although not exclusively, one of *type*. Most of the folk architecture in contemporary America has been in terms of new types—the motel, the diner, drive-ins of all types—all of which originated outside the design professions and have, as it were, come up from "below." The forms themselves have been those currently fashionable and commonly used; their wide dissemination by the various news media, films, and travel make it impossible to create forms in the traditional manner. I have already suggested that relationships between these buildings can no longer be achieved through the informal controls typical of traditional vernacular. Those forms which are still partly of that style—the Doggie Diners, concrete doughnuts, and so on—are designed *for* the popular taste, not *by* it, but they, as well as popular housing, continue to show some commonly held values more clearly than does the design subculture.

Finally we find that due to the causes already enumerated—greater complexity of problems and greater specialization—the design of buildings and settlements is increasingly the concern of professional designers.

[12] Gerald Breese, *Urbanization in Newly Developing Countries* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1966), p. 7. See also Eric Wolf, *Peasants* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1966), p. 11, in which he similarly distinguishes between primitive and "civilized" in terms of specialization and differentiation.

[13] Redfield, *The Primitive World and Its Transformations*, and Redfield and Singer, "The Cultural Role of Cities," *Economic Development and Cultural Change*, 3 (October 1954), esp. pp. 56-57.

What we find, in effect, is a double change in the way built form is produced:

1. *Primitive.* Very few building types, a model with few individual variations, *built by all.*

2. *Preindustrial vernacular.* A greater, though still limited, number of building types, more individual variation of the model, *built by tradesmen.*

3. *High-style and modern.* Many specialized building types, each building being an original creation (although this may be changing), *designed and built by teams of specialists.*

These changes clearly involve a process of differentiation in building types and spaces, the building process, and the trades involved.

This development is also found in other fields, such as textiles, tools, and pottery. In the case of the latter, for example, development starts with the individual family making its own pots, then continues with the craftsman potter, and finally evolves to the artist potter or the specialist designers of mass-produced pottery. It is in these terms of a process of differentiation that changes from primitive to vernacular and then to industrial vernacular and modern can best be understood.

Differentiation and the Nature of the Evidence

Lack of differentiation in the forms and construction of buildings is an expression of the general lack of differentiation typical of primitive and even peasant societies. This aspect of these societies affects the types of buildings and hence the type of evidence which we need to consider.

Almost all observers of primitive and peasant societies have commented on the typical lack of differentiation in the use of space and labor which also permeates other areas of life and thought.[14] There is no separation among man's life, work, and religion, and very little differentiation, if any, between the sacred and the profane. Religion is so closely linked as to be inseparable from social life and needs. Jung has commented on the lack of sharp boundaries between man and animals in the primitive world,[15] and Giedion also comments on this, stressing the general lack of differentiation between man and nature, and between directions in cave art; he equates the rise of the first high civilizations with man becoming more important than animals, and with the rise of the vertical as a preferred direction.[16] Giedion's hypothesis is supported

[14] See, for example, Robert Redfield, *A Village That Chose Progress: Chan Kom Revisited* (Chicago: University of Chicago Press, 1950), pp. 25, 61, where he compares Chan Kom with the way it had been before. One could sum up the changes under increasing differentiation, both at the scale of the village as a whole, with the breaking up into neighborhoods, and in terms of public and private space—the plaza and patio. The latter could be equated with Dan Stanislawski's comparison of Indian and Spanish towns in Michoacan, *The Anatomy of Eleven Towns in Michoacan,* University of Texas, Institute of Latin American Studies (Austin: University of Texas Press, 1950).

[15] Carl Jung, *Man and His Symbols* (Garden City, N.Y.: Doubleday and Co., 1964), p. 45.

[16] Siegfried Giedion, *The Eternal Present,* vols. 1 and 2, Bollingen XXXV (New York: Pantheon Books, 1964).

by the evidence of some present day "stone-age" civilizations, such as the Eskimos, who show this lack of differentiation conceptually and in the lack of preferred directions in art, confirming the late emergence of such directions as the vertical.[17] Max Sorre's concept of the *Genre de vie* embraces as many spiritual elements as material and social ones because of this unity and lack of differentiation between magic and work, religious and secular. This applies to work in general, which is undifferentiated or, as we would say, unspecialized, and hence applies to the way in which space is used. As spaces become more separated and differentiated, the number of types of spaces increases. For example, from man and animals being housed in the same room, as in the Kabylie, we find them under one roof but in separate spaces, as in Switzerland, then separated but close, as in the French farmhouse, and finally widely separated. The same applies to differentiation of spaces within the house for various uses.

Compare, for instance, the Japanese farmhouse, where living, stabling of horses, and rearing of silkworms take place in the same space, or the village or town house where the same applies to living, shop, and workshop, as well as lack of differentiation of rooms in the house, with our own use of spaces and separation of work and living.

The medieval house shows the rise of differentiation in three respects. At first work and living become somewhat differentiated with separate shop and house entrances; then the sleeping quarters for apprentices and workers, on the first floor, become separated from family sleeping and living, which take place in a large room on the second floor; finally, a separation of living from sleeping rooms takes place in the family quarters.[18]

Even a house plan as complex and highly differentiated as the Moslem house of Turkey and Yugoslavia has different uses for rooms at different times of the day,[19] and peasant cultures still show a combination of home and economic unit in one place. With increase in the complexity of civilization comes ever greater differentiation of types of building and urban space, and separation of uses culminating in the extreme zoning practices of today.

This multiple use of space greatly affects the form of the house and settlement, and means that the evidence which we need to consider in this book comprises very few building types. Since the house is little differentiated internally and most activities take place in it, or in its immediate setting, the only other buildings in primitive cultures are a few shrines, chiefs' houses, granaries—often linked with the house—and storehouses, which may be sacred. Even in preindustrial cultures the

[17] E. Carpenter, "Image Making in Arctic Art," in *Sign, Image, Symbol,* ed. G. Kepes (New York: George Braziller, Inc., 1966), pp. 206 ff. (See especially pp. 212, 214-216, 218-219.)

[18] Gianni Pironne, *Une Tradition Européenne dans L'Habitation,* "Aspects Européens" Council of Europe Series A (Humanities), No. 6 (Leiden: A. W. Sythoff, 1963), pp. 17, 37-38.

[19] Grabrijan and Neidhardt, *Architecture of Bosnia,* pp. 171, 238, 289, and elsewhere.

vast mass of vernacular buildings, urban and rural, consists of dwellings in this undifferentiated sense. The concentration on houses in this study is also due to the fact that they show most clearly the link between form and life patterns, and very few non-houses can be considered as vernacular forms, although some religious buildings fall into this category,[20] as do some workshops, mills, and other buildings which now form the new field of industrial archeology. Most of these nondomestic forms tend to be more design oriented and more affected by the high culture coexistent with them in preindustrial and peasant cultures than are the houses. Finally, houses also provide the best way of relating the whole system of house, settlement, landscape, and monumental buildings to the way of life.

Almost every culture, with a few exceptions, has buildings of religious or social significance, often both at the same time, which possess greater symbolic value and content than the ordinary dwellings.[21] This is generally shown by their greater scale, more elaborate decoration, and method of building, but they may also be distinguished by being smaller;[22] in any case, they are *different*. These are the monumental buildings of a culture which tend to stand for more than the house—which, as I will try to show, also stands for more than is generally assumed.

The distinction becomes clear if one compares the "sleeping bag" of the Sepik River area of New Guinea, a series of hoops just big enough for one person to slide into, with the decorated meeting house 60 feet high and up to 135 feet long (the *Tambaran*), which is also the men's dwelling and cult place, forbidden to women. This contrast of huge meeting houses and small dwellings is typical of this area in general, and will be discussed later in more detail. In the Solomons and Melanesia the chiefs' houses and canoe houses, all the public buildings, in fact, are more elaborate than the dwellings, while in Tahiti temples are built of stone whereas houses are always of wood. The temple in an Indian town, or the church or cathedral in Europe or the United States, is also very different from the surrounding houses.

Any emotional or religious surplus, and therefore *material* surplus, which is extremely limited in societies of scarcity, is reserved for these special types of buildings, and then there is always a hierarchy present. The surplus is reserved for monuments of the culture—the shrine, clan house, chief's house, or container of ritual objects. In building houses, therefore, primitive people generally work right up to the technological ceiling of their culture, but well below the aesthetic ceiling demonstrated by these other buildings, as well as by weapons, costumes, and other

[20] Amos Rapoport, "Sacred Space in Primitive and Vernacular Architecture," *Liturgical Arts*, XXXVI, No. 2 (February 1968), 36-40.

[21] Pierre Deffontaines, *Géographie et Religions*, 9th ed. (Paris: Gallimard, 1948), pp. 69-70, names some cultures that have no cult buildings and use trees, stones, and so on, as sacred places. They may, of course, still have chiefs' houses and other buildings of this type.

[22] For example, see Alain Gheerbrant, *Journey to the Far Amazon* (New York: Simon & Schuster, 1954), p. 92—the Piaroa Indians' shrine is only 10 feet across, while the house is 50 feet long and 25 feet high.

artifacts.[23] This does not, however, apply universally; the elaborately decorated houses of Africa are one clear exception.

One qualification needs to be made. Many societies display some differentiation in house form based on stratification in that society, whether by military prowess, wealth, or age. In parts of Africa the compound may be larger and have more retainers, wives, or cattle; the house may be more decorated, as in Southeast Asia; the roof may have more bands of thatching, as among the Peul of Africa. The skulls or scalps of enemies may be displayed as symbols, or the wealth and prestige of the owner may be expressed through size and number of retainers or elaboration of the carved columns, as among the Kwakiutl. The frequent concentration of such decoration on supports and doors, often the most decorated part of the house, as in Nigeria, Mongolia, and elsewhere, may be symbolic; such symbolism will become clear later. In most of these primitive and preindustrial cultures, however, differentiation is of degree only, and the basic house type is unchanged—unlike the variety of today or in the eighteenth and nineteenth centuries.

Reasons for Study

In general terms, we are dealing with an aspect of the history of the built environment—if we take history to mean concern with evidence of the past. Human geography has always been linked with history, and even prehistory, and in the past history has also played an important role in architectural studies. Since architectural history has been rather neglected during the last few decades, particularly in the United States, we may ask why architectural history should be studied at this moment in time, with its stress on rapid change.

The assumption behind any historical approach is that one can learn from the past; that study of the past is of value philosophically as well as in making us aware of the complexity and overlapping of things. It can also clarify those elements that are constant and those which change. "We need the rich time dimension to help us avoid the all too common triviality of living in the moment, as a continuous prelude to rushing thoughtlessly into the future."[24] Hence we cannot assume a sudden break with all that went before, or that we and our problems are so different that the past has no lessons for us. While technology may progress, architecture does not necessarily do so.

Buildings, as all human endeavors, obey varied and often contradictory and conflicting impulses which interefere with the simple and orderly diagrams, models, and classifications we love to construct. The complexities of man and his history cannot be encompassed in neat formulas, although the desire to do so characterizes our age. Rather than eliminate these contradictions, in accordance with what could be called

[23] A. H. Brodrick, "Grass Roots," *Architectural Review* (London), CXV, No. 686 (February 1954), 101-111.

[24] G. Evelyn Hutchinson in S. Dillon Ripley, ed., *Knowledge Among Men*, Smithsonian Institution Symposium (New York: Simon and Schuster, 1966), p. 85.

the *Procrustes' bed syndrome,* it would seem that the simple models should be revised so as to preserve the sense of the contradictions and complexities of the relations among dwellings, settlements, culture, and the continuity of man's achievement.

With regard to the specific topic as I have defined it, the question still arises—why study primitive and preindustrial house form in the space age, with its rapid tempo of change? One reason is that these houses, being the *direct* expression of changing values, images, perceptions, and ways of life, as well as of certain constancies, become a very fruitful topic for study. Another important aspect in this connection is the need for cross-cultural studies and comparisons, which are useful in two ways. First, from the practical point of view, different cultures and subcultures coexist in our cities, with the consequent need for different housing and settlement patterns; this applies with even more force to the developing countries (see Chapter 6). Second, and more generally, comparisons of this type can offer an insight into the basic nature of shelter and "dwelling," of the design process and the meaning of "basic needs."

But this need for cross-cultural comparison goes further. In order to understand culture and its relation to housing form, we need the "intellectual encounter with man in all his varieties, no matter how primitive, how ancient, or seemingly insignificant." [25] The value of this kind of study is that it provides a great range of variables in different cultures, as well as greater extremes—hence a greater sense of the range of alternatives possible.

Ruth Benedict has pointed out that all cultures make a selection of their cultural institutions, and that "each from the point of view of another ignores fundamentals and exploits irrelevancies." She refers to such aspects of society as monetary value, which may be ignored or of the essence, and technology, which may be strong or "unbelievably slighted even in those aspects of life which seem necessary to ensure survival." Some cultures may stress adolescence, others death, and yet others afterlife.[26]

Similar choices apply to the house and the objectives inherent in its design, and for this reason we need to look at other cultures, distant both in space and time. Such an examination would show, for example, that novelty, which has been considered a major characteristic of architecture, is in fact *atypical* of most primitive and vernacular buildings, and is a culturally linked phenomenon of recent vintage. This can be understood only through comparison with the earlier vernacular, a comparison necessary in order to avoid a distorted view.

In the same way that we cannot understand our subject at a moment in time, we cannot understand it in the context of a single culture. Through seeing other ways of doing things, we are made aware that there

[25] E. R. Service, *The Hunters* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1966), p. *v.*

[26] Ruth Benedict, *Patterns of Culture* (Boston: Houghton Mifflin Company, 1959), p. 24.

are other ways, that our way may be peculiar rather than inevitable, and that our values are neither the only ones, nor the norm. Seeing other methods helps us to discover the distinctiveness of our own. Comparisons of this type also make us aware of the problem of constancy and change. It is this aspect of comparative studies that offers the greatest potential from the point of view of architectural—or environmental—theory. The evidence, if considered together with recent work in ethology, ecology, and so on, may well lead to an understanding of the social and psychological aspects of the environment.

The scale at which comparisons are made is of crucial importance. For example, it has been said that modern cultures are hardly different from one another.[27] However, if we look at the scale of the house or room and how it is used, we find significant differences between apparently similar modern industrial cultures.[28] For our purposes, then, we need to look at the micro-scale; generalizations based on too crude a scale may be incorrect or misleading (as will be seen later with regard to building materials). Nevertheless, it is true that modern cultures are more similar, thus providing a good reason for examining primitive and preindustrial cultures. These will show other methods of doing things, other ways of seeing the world, other value systems—and the resulting differing housing and settlement forms. In addition, the recurrence of certain constancies in widely different cultures may take on great significance.

I have already referred to the value for study of the directness with which primitive and preindustrial buildings express the needs and desires of people and the requirements of the cultural and physical milieu without the interference of artistically self-conscious designers. If we regard buildings as the result of the interaction of:

Man—his nature, aspirations, social organization, world view, way of life, social and psychological needs, individual and group needs, economic resources, attitudes to nature, personality, fashions
—his physical needs, i.e., the "functional" program
—the techniques available
Nature—physical aspects, such as climate, site, materials, structural laws, and so on
—visual, such as the landscape

then the influence of man, particularly his personality, both in primitive and vernacular building is less than we commonly find in our culture, and such influences as do exist are not individual or personal, but of the group—and limited at that. Building of this type tends toward a state of balance with nature rather than dominating it, which further reinforces its superiority over the grand design tradition as a topic of study for the relation of the built environment to man and nature.

[27] See, for example, Max Sorre in *Readings in Cultural Geography*, Philip L. Wagner and M. W. Mikesell, eds. (Chicago: University of Chicago Press, 1962), p. 370.
[28] See E. T. Hall, *The Silent Language* (Greenwich, Conn.: Fawcett, Premier paperback, 1961), and especially *The Hidden Dimension* (Garden City, N.Y.: Doubleday & Co., 1966).

Finally, because the physical constraints in primitive and preindustrial vernacular buildings are very strong, and the situations tend to be extreme, we are able to examine the influence of different variables on the creation of form more clearly than we could in the contemporary situation or the grand design tradition, where there are fewer constraints (very few in our context) and the situation tends to be vague and fuzzy. We are better able to judge the relative importance of physical and cultural forces as form determinants. Even modern vernacular can tell us things we would miss by looking only at the grand design tradition, as I will try to show in Chapter 6.

Method of Study

If the definition and description given earlier are accepted, then the time during which primitive and vernacular building has gone on depends on level of technology and way of life, rather than on chronology. As long as there are societies which can be regarded as primitive or preindustrial, we would expect to find the corresponding buildings; such societies extend from the dim past to the present day. The traditional nature of such building implies lack of change as one of its principal characteristics. Many examples of present day primitive and vernacular buildings could be cited. Grass huts like those known in the Neolithic age are still used in Fiji, New Guinea, South America, and elsewhere. European Neolithic lake dwellings on stilts seem identical to some in New Guinea, South America, and even some I saw right outside of Singapore. Courtyard houses generally seem to have changed very little, and those used today resemble some of the earliest houses found in Jericho, Çatal Hüyük, or Ur. In fact, the streets of Ur are like those of many towns in the Middle East today. The huts of the Toda in Central India look like those drawn in the *Font de Gaume* caves in Southwest France, while mud brick houses excavated in Hacilar, Turkey, and dating back to 5200 B.C. are like some I saw recently in Iran. The Trulli of Italy and the beehive huts of Africa and Peru resemble early beehive huts in Cyprus; Maya houses in Yucatán today seem identical to those illustrated in contemporary manuscripts, while those in Peru seem identical to the pre-Columbian equivalents (as at Macchu Picchu). In all of these examples, the existence of an accepted model with few major innovations has resulted in the very strong persistence of form.[29]

Primitive and vernacular buildings have coexisted in the same area with both high civilizations and, at the present time, modern technology. While the pyramids, temples, and palaces of Egypt, palaces of Iran, and the temples of Greece were being built, the majority of people were living in vernacular houses; they still do under the vapor trails of jets and the orbits of rockets. Primitive and peasant societies have not questioned the traditional although this is now changing.

[29] Other artifacts, of course, also show this persistence of form. Carts used today in Sind are like those in Mohenjo Daro 4,500 years ago. The reed boats used in the Rhône valley in the nineteenth century were like those of 7500 B.C.

The geographic distribution of these buildings depends on their corresponding cultures. Primitive and vernacular building has existed, at one time or another, everywhere that man has lived. The differences between the types of buildings in different areas are evidence of differences in culture, rituals, ways of life, and social organization, climates and landscapes, and materials and technology available, while the similarities are evidence not only of areas where some or all of these factors have coincided, but also of some basic constancies in man's needs and desires.

Buildings can be studied in different ways. One can look at them chronologically, tracing the development over time either of techniques, forms, and ideas, or of the thoughts of the designer, or one can study them from a specific point of view. In our case the latter is the most useful method, since, as we have seen, primitive and vernacular buildings are distinguished by lack of change, differing in this respect from the more "normal" historical material.[30] These buildings are, therefore, basically nonchronological in nature.[31] In fact, originality and innovation in primitive and vernacular buildings are frowned upon and often condemned. "Customary ways are sacred and it is not uncommon for individuals to be punished for seemingly slight deviations in methods of production."[32] Such buildings are also anonymous, in the sense that they have no known designer and little is known of the name of the owner or the specific circumstances of their erection, since they are the product of the group rather than the individual.

This means that the intellectual development of the designer cannot be used as a method of study either. The evidence of letters, diaries, and architectural theories as evidenced in journals, books, and drawings, which is of such importance in traditional architectural history, is lacking. In view of the great uniformity in space and time of primitive and vernacular buildings, our topic is best approached from a specific point of view analyzing the buildings themselves rather than trying to trace their development.[33]

[30] Mircea Eliade and others have pointed out that, for primitive man and even for peasants, time has no lasting influence. Primitive man lives in a continual present and his time conception is *cyclic* rather than linear. See Mircea Eliade, *Cosmos and History—The Myth of the Eternal Return* (New York: Harper Torchbooks, 1959), pp. 4, 90. Peter Collins, in *Changing Ideals in Modern Architecture* (London: Faber & Faber Ltd., 1965), Chap. 2, pp. 29 ff., also points out that the sense of history and development came rather late.

[31] In some cases, of course, it is possible to date vernacular buildings. For example, see Richard Weiss, *Die Häuser und Landschaften der Schweiz* (Erlenbach-Zurich: Eugen Rentsch Verlag, 1959), in which houses are often dated, and one can also trace the impact of the Baroque on farmhouses. Houses can also be dated by comparison with the monuments of known cultures (e.g., the Egyptian houses of a given dynasty). See also G. H. Rivière, *Techniques et architecture* (Paris: Albin Michel, 1945), in which he traces the evolution of the French farmhouse chronologically. Often, however, the year of building is discovered because of the habit of carving dates, not through any stylistic change.

[32] Lord Raglan, *The Temple and the House* (New York: Norton, 1964), p. 196.

[33] It can also be studied by taking a specific *place* and trying to understand the forms of dwellings and settlements in the light of history, location, social aspects, climate, materials, construction techniques, and other variables.

It is implicitly accepted that there is a link between behavior and form in two senses: first, in the sense that an understanding of behavior patterns, including desires, motivations, and feelings, is essential to the understanding of built form, since built form is the physical embodiment of these patterns; and second, in the sense that forms, once built, affect behavior and the way of life. Each of these two aspects forms a vast topic in itself, and both are of great interest to the architect and all those concerned with man's habitat. The question, in effect, is concerned with how changes in culture, expressed in behavior, relate to changes in the environment, as shown by physical form. In this book, the first link between behavior and form is of greater interest, and will be discussed in relation to its specific aspects in various places.

This specific method of dealing with the topic brings up the question of how much one can tell from an examination of buildings, or artifacts in general, when no written records exist, and when there may not even be a detailed knowledge of the way of life, the only evidence being the object, building, or settlement itself. While objects can tell us a great deal about a culture,[34] there are three possible cautions to be borne in mind:

1. What have been called "archeologists' screens"—the way in which wrong evidence, one's own attitudes, values, and experiences may be read into the evidence.[35]
2. The fact that some cultures, although they have a very rich and complex life, have almost no artifacts other than their impact on the landscape.[36] While this is rare, it does exist, and there are also areas where material objects may rapidly deteriorate and disappear, or be destroyed.
3. The idea that architecture may be outside a given culture.[37]

The Specific Task

The goal of most of the work which has been done on the topic of primitive and vernacular buildings has been the classification, listing,

[34] For example, see Lewis Mumford, *Art and Technics* (New York: Columbia University Press, 1952), p. 20, wherein he analyzes three nudes—by Cranach, Rubens, and Manet—as indicators of three different cultures, philosophies, and ways of looking at the world, and points out that the physical artifacts—the art objects—give the maximum of meaning with the minimum of concrete material.

[35] See particularly Horace Miner, "Body Ritual among the Necirema," *American Anthropologist,* LVIII (1956), 505-7.

[36] See Redfield, *The Primitive World and Its Transformations,* p. 16, referring to the Pitjandjara, an Australian Aboriginal tribe. Note also the Waika Indians of Northern Brazil, who have no clothing and have not yet discovered pots, but have a very rich and complex religious life very different from their low material culture. See also Amos Rapoport, "Yagua, or the Amazon Dwelling," *Landscape,* XVI, 3 (Spring 1967), 27-30, where it is clear that it would be difficult, if not impossible, to discover from the *physical* evidence alone how the problem of privacy is solved.

[37] This idea, suggested by George Kubler in *The Art and Architecture of Ancient America* (Harmondsworth, Middlesex: Penguin Books, 1962), p. 9, and in a more extreme form by N. F. Carver, *Silent Cities* (Tokyo: Shikokushu, 1966), does not hold even for high-style design, and certainly not for primitive and vernacular buildings, which are completely embedded in their culture.

and description of house types and their features. Little attempt has been made to link these forms to life patterns, beliefs, and desires, although form is difficult to understand outside the context of its setting, culture, and the way of life it shelters. When this link has been discussed, it has been in general rather than specific terms, with no attempt made to discover which of the forces acting on house form could be regarded as primary and which could be regarded as secondary or modifying.

These classifications, and descriptions in travel books and elsewhere, all provide sources of material for study, but little insight into how and why form is created. There have also been no attempts to discuss these conflicting theories of house form that have been proposed. *The object of this book is to concentrate on all these aspects.*

This means that I will avoid the listing and classification of the vast mass of material, and will rather try to gain an understanding of how form occurs. The book will try to discover which theoretical statements give the greatest insight into the house and its form, and which examples can most usefully be generalized without necessarily trying to construct a general, universally valid theory. Such an attempt presents particular problems in this case. First, there is no generally accepted conceptual framework, and second, the amount of material is vast and not recorded in any uniform way. It is also not of uniform quality and does not deal with the same aspects, and therefore cannot easily be directly compared.

The specific task, then, becomes to select those features of the house which seem most universal, and to examine them in different contexts so that we can best understand what it is that affects the forms taken by dwellings and groups of dwellings, and also what it is that so easily enables us to tell, often at a glance, the area, culture, or even subculture to which a dwelling or settlement belongs. Instead of trying to describe or classify differences in house forms, their materials, and parts, I will ask *to what these differences can be attributed*, and will try to relate them to the way of life, the image of the good life, social organization, concepts of territoriality, way of handling "basic needs," the link between the dwelling and the settlement pattern, and so forth.

Furthermore, one must be careful not to speak of forces *determining* form. We must speak of coincidences rather than causal "relations," since the complexity of forces precludes our being able to attribute form to given forces or variables.

We need to become aware of the complexity of interactions and the over-all character of the setting, as well as to understand some of the facts and the significance of the material. It is clear that the topic can only be discussed in general terms, not only because of space limitations, but also because the number of examples and forms is too great, as is their spatial and temporal distribution. One can only suggest some of the ways of looking at these forms, in order to give the feel and the sense of the subject—and to awaken interest in it, and sensitivity to it.

CHAPTER 2 *alternative theories of house form*

The listing and classification of house types and forms have not given much insight into the processes or determinants of the creation of form. There have been some attempts to take a deeper and more theoretical look at the forces that create house form, but most have been implicit rather than explicit. I will try to state them in clearer terms. Those theories to be examined are not meant to represent an exhaustive list; the discussion will be confined to the principal types of explanations, including physical ones—involving climate and the need for shelter, materials and technology, and site—and social ones—relating to economics, defense, and religion.

All these attempts have suffered from two faults. First, they have tended to be largely physical determinist in nature. Second, no matter which specific form-determinant has been stressed, the theories have inclined toward a rather excessively simplistic attempt to attribute form to a *single* cause. They have thus failed to express that complexity which can be found only through consideration of as many as possible variables and their effects.

These theories ignore the fact that building form manifests the complex interaction of many factors, and that selection of a single factor, and changes in the types of factors selected at different periods, are in themselves social phenomena of great interest. Each of the theories examined will also be found to fail to account for some obvious and significant aspects of the problem.

Climate and the Need for Shelter

Climatic determinism has been widely accepted in architecture as well as in cultural geography, although in the latter it has recently found rather less favor. One need not deny the importance of climate to ques-

tion its determining role in the creation of built form. Examination of the extreme differences in urban pattern and house types within one area, such as Old and New Delhi, the old and new parts of Fez or Marrakesh, or certain Latin American cities, shows them to be much more related to culture than to climate, and makes any extreme determinist view rather doubtful.

In architecture the climatic determinist view, still rather commonly held, states that primitive man is concerned primarily with shelter, and consequently the imperatives of climate determine form.

> We build houses to keep in a consistent climate, and to keep out predators. We grow, gather and eat food to keep our metabolism on an even keel.[1]

While this is questionable in regard to either housing or food today, it is not true even for primitive man, who has many dwelling and food taboos and restrictions within his economies of scarcity. Nonutilitarian factors seem of primary importance even in the critical field of domestication of animals and plants, as will be discussed later in more detail.

With more specific regard to the house, it has been stated that:

> Shelter is of supreme importance to man. It is the prime factor in his constant struggle for survival. In his efforts to shelter himself against the extremes of weather and climate he has, over the ages, evolved many types of dwellings, one of which is the court house.[2]

The question is, of course, why the same area has developed both the court house and other forms—as is the case in Greece, where both the Court form and Megaron form were found, or Latin America, where the court house seems more closely related to cultural factors than to climate as a comparison of Indian and Spanish types shows.

A more important consideration is why so many forms of the house have been developed within the limited number of climatic zones. Even the variation among micro-climatic types is relatively smaller than the number of house types frequently found in areas of similar climate, as, for example, in the South Seas. In the latter case, where climate is noncritical, we find a great variety of house types: artificial man-made islands on the barrier reefs of parts of the Solomons and Fiji, pile dwellings in New Guinea, and houses on mountain terraces in the New Hebrides and Espíritu Santo, not to mention the many variations within each type in each area.

While it would be impossible to deny the great importance of shelter

[1] L. Bruce Archer, *Systematic Methods for Designers*, reprinted from articles in *Design* (Great Britain) during 1963-1964 (Nos. 172, 174, 176, 181, 188) with revisions, Part 2, p. 2. See also Barr Ferree, "Primitive Architecture," *The American Naturalist*, XXIII, No. 265 (January 1889), 24-32, wherein on p. 24 it is stated, "Food and shelter constitute the first and chief wants of primitive man and to their satisfaction he devotes his dormant energies," and on p. 28, "Cold climates produce communal living," and so on.

[2] N. Schoenauer and S. Seeman, *The Court Garden House* (Montreal: McGill University Press, 1962), p. 3. See also Eglo Benincasa, *L'Arte di habitare nel Mezzogiorno* (Rome: 1955), which also takes a climatic determinist view and says that the court house is a southern form while the hearth belongs to the North.

as an aspect of the house and as a human need, the basic necessity for shelter itself has been questioned. It has been suggested that house building is *not* a natural act and is not universal, since South East Asia, South America, and Australia contain a number of tribes without houses. A most telling example are the Ona of Tierra del Fuego. Although the climate there is almost arctic, and the ability to build well is shown by the presence of elaborate conical huts for ritual purposes, only windbreaks are used as dwellings.[3] In Tasmania the aborigines also had no houses in an area of cold climate, but their ability to build was not developed beyond the windbreak.

Conversely, elaborate dwellings are found in areas where, *in terms of climate alone,* the need for shelter is minimal, as in parts of the South Seas. Furthermore, a number of activities in which protection from the weather would seem to be particularly critical, such as cooking, childbirth, and dying, take place in some areas either in the open or in a lean-to.[4] The principle that religious proscriptions and taboos introduce *discomfort* and complications, and become more important than climatic imperatives, is more significant than any specific examples which could be given.

In severe climates, such as the Arctic, the forms of the dwellings of different peoples may be very different—as are those of the Eskimo and the Athabascans—and these forms cannot be explained in terms of climate alone. For example, the Eskimo summer and winter dwellings (the tent and the igloo) have a similar plan consisting of a central space with rooms arranged radially off it. This plan is not found in other cultures in similar climates, and is not the most efficient climatically.[5] If the arctic dwelling is not determined by climate it becomes difficult to accept the suggestion that the round house typical of the Loyalty islands and New Caledonia, and also found in the highland valleys of New Guinea and New Britain, is used because it retains the heat of quite a small fire all night without the need for coverings.[6]

There are cases in which the way of life may lead to almost anticlimatic solutions, with the dwelling form related to economic activity rather than climate. For example, the Hidatsa of the Missouri valley were agriculturalists from April to November, growing corn, greens, and beans.

[3] J. H. Steward, ed., *Handbook of South American Indians,* Vol. 1 (Washington: U. S. Government Printing Office, 1964), pp. 110, 120, 137.

[4] Lord Raglan, *The Temple and the House* (New York: W. W. Norton & Company, Inc., 1964), Chaps. 5-8, pp. 42 ff. See also *Aspects de la Maison dans le Monde* (Brussels: Centre International d'étude Ethnographique de la Maison dans le Monde), p. 14.

[5] Edmund Carpenter, "Image Making in Arctic Art," in *Sign, Image, Symbol,* ed. Gyorgy Kepes, pp. 206 ff. See especially p. 221: "Eskimos with a magnificent disregard for environmental determinism open up rather than enclose space. They must, of course, create sealed-off areas, but instead of resorting to boxes, they build complex many-roomed igloos which have as many dimensions and as much freedom as a cloud." (New York: George Braziller, copyright © 1966. Reprinted with the permission of the publisher.)

[6] Jean Guiart, *Arts of the South Pacific,* trans. A. Christie (New York: Golden Press, 1963), p. 10.

During that period they lived in circular wooden houses 30 to 40 feet in diameter, with five-foot-high walls made of tree trunks and four central columns 14 feet high supporting rafters carrying branches, earth,

The existence of fairly frequent anticlimatic solutions leads one to question the more extreme climatic determinist views, and suggests that other forces must be at work. Primitive and peasant builders have needs and drives which are "irrational" in terms of climate. These may include ceremonial and religious beliefs, prestige, status, and so on.

The Boro of the Western Amazon, and a number of other tribes in the Amazon area, live in large communal houses with thickly thatched roofs and walls. There is no provision at all for cross-ventilation, an essential in the hot, humid climate. It would be difficult to find a worse solution in terms of climatic comfort, although it may be good protection against insects. One assumption might be that these houses were introduced from elsewhere, and are the status symbol of some more powerful group. The typical open house used in the jungle area around Iquitos [7] can be seen in the native port of Belén in Iquitos with the identical frame and construction, the addition of *solid walls* being the only major change. This makes the house much more uncomfortable, but may be due to the desire for status in the new culture, and almost certainly reflects new attitudes to, and requirements of, *privacy* (see figs.