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 anti-climatic 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, and grass roofing. These houses were in large villages and lasted several generations. From December to March they hunted buffalo and used tepees like those of the plains Indians. The two dwelling types were thus adapted to the two ways of life and the dual economic base, although climatically the reverse would be expected (as is found in Siberia). In other areas of the Missouri valley, where the climate was identical, but the Indians' economy was based entirely on hunting, tepees were the only house form used. Among the Southwest Pomo (Kashaya) Indians of California the *location* of villages changed, being on the coast in summer and on the ridges of the hills in winter, but the form of the house did not change. The main effect of climatic influence was that the house door faced away from the wind.

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. 2.1 and 2.2).

Anticlimatic solutions can be found in many parts of the world. In the Amazon, wise jungle settlers got Indians to build houses for them, but the Rubber Barons imported brick and marble and built thick-walled mansions. These absorbed and held the moisture, mouldered, and led to disease. They still stand, deserted and ruined, lived in only by squatters who cannot afford anything better.[8]

A similar cultural import is the Chinese house in Malaya, which came from a very different area yet is built side by side with the Malay house, which is much better suited to the climate. The former, of course, is urban and the latter rural, but the courtyard plan and heavy masonry construction of the Chinese house make little sense in the hot, humid area.

[7] Amos Rapoport, "Yagua, or the Amazon Dwelling," *Landscape*, XVI, No. 3 (Spring 1967), 27-30.
[8] Willard Price, *The Amazing Amazon* (New York: The John Day Co., 1952), p. 180.

In Japan the impact of the status oriented house can be followed clearly. The traditional house there varies little from subarctic Hokkaido in the north to subtropical Kyushu in the south, except for strength of frame, width of roof overhang, and, occasionally, the use of street arcades in the north. As the Japanese spread from south to north, they took with them the house identified with their culture; even the Ainu, the original inhabitants in the north, gave up their thick-walled dwellings for the fragile houses of their Japanese conquerors. I can affirm from personal experience how uncomfortable the Japanese house can be during the winter, even in relatively warm Honshu. This house, although comfortable during summer days, is closed up at night by shutters, making it very uncomfortable indeed. The shuttering is based on socio-cultural attitudes, notably a fear of "burglars" which is more superstitious than real.[9]

Europeans, and some natives, in North Africa insist on living in European style dwellings; the courtyard house would be much more comfortable, but there are questions of status and modernity involved. One reason why westerners have been unable to use such court dwellings is the scale and arrangement of spaces, which are *culturally* unsuitable.[10] Natives, on the other hand, have had to brick up openings in European houses, not only to avoid light and sun but also for privacy.[11]

Religious proscriptions sometimes create anticlimatic solutions, as is the case with the Chams, who regard shade cast by trees as unlucky, so that both houses and streets are exposed to the terrible sun and trees never planted. In Cambodia a similar lack of shade trees is brought about by the belief that it is unlucky for roots to find their way under the house.[12]

In Fiji, Malaya, and Japan, not only did Europeans often live in houses unsuited to the climate, but the relatively comfortable traditional houses are now being replaced with galvanized iron roofed (or, even worse, all metal) houses which are even less satisfactory. In the South Seas, European houses are a mark of power and good fortune, even though they are hotter and less well insulated than the traditional ones, and hence less comfortable.[13] In Japan thatch is being replaced by sheet metal, which is much less practical in both heat and cold, drips condensation, and rusts, yet is widely adopted because it is new.[14] In Peru,

[9] Bruno Taut, *Houses and People of Japan*, 2nd ed. (Tokyo: Sanseido, 1958), pp. 12, 70, 219-220. See also Pierre Deffontaines, *Géographie et Religions*, 9th ed. (Paris: Gaillimard, 1948), p. 28, where he contrasts the lack of heating in the Japanese house with the huge *Kang* (stove) in the Chinese house in areas of similar climate.

[10] See E. T. Hall, *The Hidden Dimension* (Garden City, N.Y.: Doubleday & Co., 1966), pp. 144, 151-152.

[11] Jean Gottmann, "Locale and Architecture," *Landscape*, VII, No. 1 (Autumn 1957), 20.

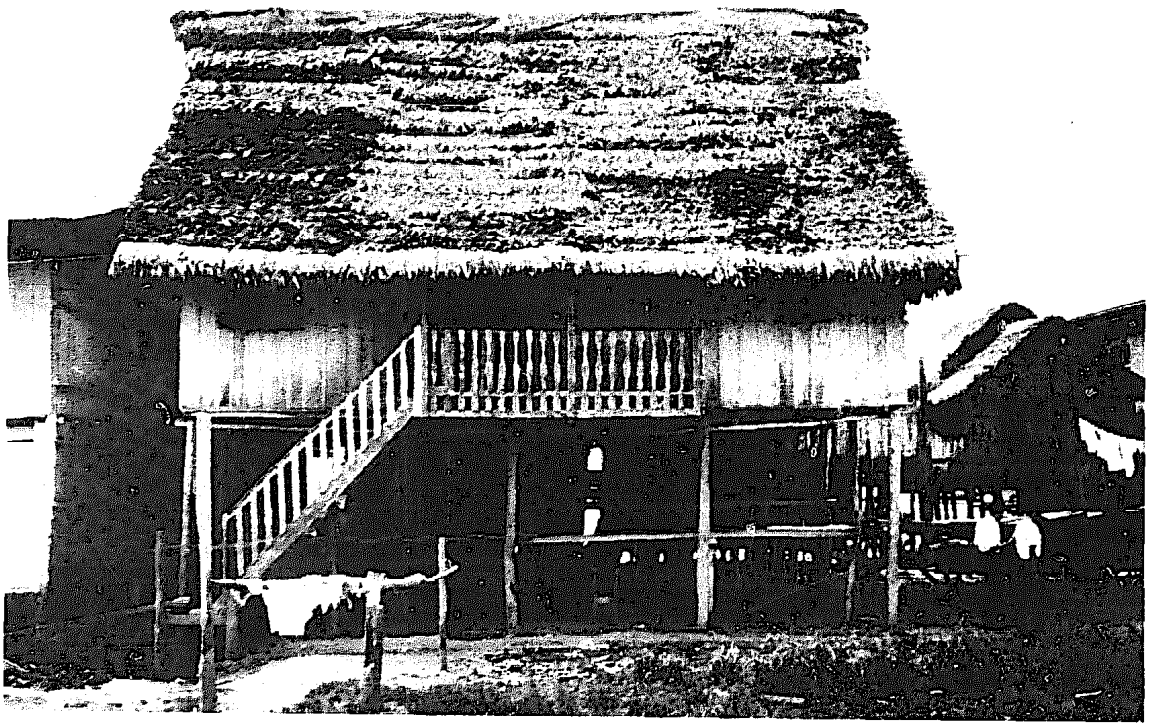
[12] Pierre Deffontaines, *Géographie et Religions*, p. 40.

[13] *Aspects de la Maison dans le Monde*, pp. 95, 97.

[14] Bruno Taut, *Houses and People of Japan*, pp. 70, 205. It is of interest to note that his remarks apply to as early as 1938. The process can still be observed today in Fiji, Malaya, South America, and elsewhere.

FIG. 2.1. Typical open house in jungle near Iquitos, Peru.

FIG. 2.2. House in Iquitos, Peru (native area of Belén). Note use of solid walls for privacy, the major change from house in Fig. 2.1.



especially on the Altiplano, the status of galvanized iron is such that not only is it replacing both thatch and tile, to the detriment of comfort, appearance, and landscape, but the only way to get people to cooperate in a recent self-help school building project was to agree to the use of galvanized iron roofs—the status symbol. The visiting architects achieved comfort by concealing thatch in the ceilings.[15]

Despite these examples, it is a characteristic of primitive and vernacular buildings that they typically respond to climate very well. I am not trying to deny the importance of this variable, but merely to cast doubt on its determining role.

Materials, Construction, and Technology

"For thousands of years wood and stone have determined the character of buildings."[16] Present cultural attitudes make this statement a popular view, but its roots go far back in time. It has been widely used in architectural theory both in the past and today. The argument, put most simply, is that if it applies to high-style design, then these factors must become particularly strong in societies of limited technology and, hence, strong constraints.

In this view, forms develop as man learns to master more complex building techniques, and all forms are part of a progressive development in a series of almost inevitable steps. The cave—with no building—gives way to the windbreak, the circular hut, and finally the rectangular hut in its various forms which are, in turn, derived from the various materials and techniques available.

We have already seen that in Tierra del Fuego the windbreak is used for shelter, while more sophisticated forms are used for ceremonial buildings. The Southwest Pomo (Kashaya) Indians of California used the bark tepee, rather a primitive form, and the even more primitive temporary brush house, while their ceremonial buildings—sweathouses and elaborate roundhouses—have sophisticated roof structures. The roundhouse used to be semi-subterranean, possibly an archaic form comparable to the Kiva, but retains the same space organization, relationships, and basic form now that it is above ground and built of new materials; the central pole was actually moved from the old roundhouse to the new one.[17] This suggests that the form is at least partly independent of the materials and structural means employed, and that progress in the use of advanced techniques is not inevitable.

The determinist view neglects the *idea* of the house; just because man can do something does not mean that he will. For example, although the ancient Egyptians knew the vault they rarely used it, and then only

[15] Pat Crooke, "Communal Building and the Architect," *Architects' Yearbook 10* (London: Paul Elek, 1962), pp. 94-95.

[16] R. J. Abraham, *Elementare Architektur* (Salzburg: Residentz Verlag, n.d.), 3rd page of Introduction. My translation.

[17] Personal communication from a student at the University of California, Berkeley. Among the Paiute Indians we also find the whole range from open shelter and windbreaks to elaborate sweathouses.

where it could not be seen, since it was at odds with their image or idea of the building.[18] Primitive and vernacular building provides examples in which knowledge of technology does not mean that it will be used. In Haiti one can see very sophisticated woven planes, perfect for walls, leaning against some very crude houses, but used only for fishing traps, never for building.[19] The marriage *Scherm* of the Bushmen is more carefully built and larger than the regular house, although it is temporary; symbolism is apparently of more importance than utility.[20]

There are also situations where social values take precedence over technological advances. This is an interesting point, since we tend to equate technological advances with progress without thinking of the social consequences of adopting such advances. In North Africa the French piped water to a series of villages, which caused serious dissatisfaction. Investigation showed that in Moslem society women are shut in the house, and the village well provides their only chance to get outside, gossip, and see their limited world. As soon as the well was restored and the taps eliminated, the dissatisfaction ended. In some areas, after thatch has been replaced by more modern materials, it becomes fashionable as an antique with status value. As we have seen, galvanized iron can also become a symbol of success.

The fact that circular huts are easier to roof than rectangular ones need not be denied when we question the notion that change from one to the other responds to building skills only. The change of form may, in fact, be related to the symbolic nature of the two forms. Some peoples have both round and rectangular forms—as in the Nicobar islands—while others have never had round forms. For example, China, Egypt, and Mesopotamia have had rectangular houses all through recorded history, whether built of stone, mud, or other materials.[21]

Materials, construction, and technology are best treated as modifying factors, rather than form determinants, because they decide neither *what* is to be built nor its form—this is decided on other grounds. They make possible the enclosure of a space organization decided upon for other reasons, and possibly modify that organization. They facilitate and make possible or impossible certain decisions, but never decide or determine form. The Koelwai of Celebes have three different types of elevated dwellings of very different degrees of structural complexity.[22] The plans

[18] Siegfried Giedion, *The Eternal Present*, Vol. 2, *The Beginnings of Architecture* (New York: Pantheon Books, 1964), pp. 514-515.

[19] On a small island near the Ile à Vache off the south coast of Haiti near Les Cayes. I discovered this in some photographs taken by Mr. Alan Krathen, a student of mine.

[20] See Raglan, *The Temple and the House*, p. 123. See also J. B. Jackson, "Pueblo Architecture and Our Own," *Landscape*, III, No. 2 (Winter 1953-54) 21 ff., where he points out (p. 21) that the Pueblo Indians could roof large Kivas but stuck to small rooms 7′ × 12′ × 20′. If they wanted more space, they used more than one room, so the pueblo became a multiplication of the basic unit. While the scarcity of timber undoubtedly played a role, it was not the determining factor, since piers could have been used if desired, as in Iran.

[21] Deffontaines, *Géographie et Religions*, p. 17.

[22] A. H. Brodrick, "Grass Roots," *Architectural Review*, CXV, No. 686 (February 1954), 110.

of the Eskimo igloo and tent are the same, although very different materials are used. Of course materials do make a difference, especially by making some procedures impossible. The Eskimo cannot very well build a snow igloo in the summer, when there is no snow. We should look for what a cultural or physical setting makes impossible, rather than for what it makes inevitable—a point of great importance in this book.

Materials in themselves do not seem to determine form. In Japan, thatch takes on many forms, sizes, and slopes.[23] The sizes of roof beams and roofs are related to their function as a status symbol, the wealth of the farmer, and the Japanese love of nature and hence of natural materials, sometimes at the expense of rational construction. In fact, the structure of the Japanese house has been said to be generally irrational.[24] All roofs in China are of tile, yet the forms within one village may differ greatly due to the influence of Feng Shuei (cosmic orientation—see Chapter 3). The pueblos are all built of the same materials and yet, considering only those enclosing plazas, we find very different forms—E shaped, oval, D shaped, round, rectangular, and so on.

All houses in the South Seas use the same basic technology—polished stone and shell adzes—and materials, yet their numerous forms differ greatly. While the tools used in Polynesia and Melanesia are the same, the houses are much grander in the former because of different social organization and prestige of ruling families. Similarly, in Papua-New Guinea the same materials and technology have produced very different forms.

Change of materials does not necessarily change the form of the house. On the Greek island of Santorini (Thera), a major innovation in materials has not affected form. Houses there were roofed with vaults built of stones laid radially, with mortar joints. In 1925 a master mason went to Athens, saw concrete, and on his return improvised a local lightweight concrete made of the volcanic soil of the island. Neither the form of the house nor that of the vault changed, however.[25] Similarly, it has recently been reported that the Mongol Yurt is now being built with plastic rather than the traditional felt covering, but that its form has remained unchanged in all respects. We have all seen, in our own culture, forms derived from one material executed in another; for example, wood churches imitating stone ones, and vice versa.

Frequently the same materials can result in very different forms, as shown by the examples in figures 2.3-2.6. There are also situations in which climatic needs have led to structurally nonoptimal forms, as in the Ashanti and Iranian huts (to be discussed later) with heavy walls

[23] Taut, *Houses and People of Japan*, pp. 110 ff. The slope varies from the flattest possible, 40° to 60°. See also Richard Weiss, *Die Häuser und Landschaften der Schweiz* (Erlenbach-Zurich: Eugen Rentsch Verlag, 1959), pp. 67, 68-69, where the slopes of roofs are the same for different materials and different for the one material—thatch. However, roof slope is an important and characteristic element and often used in classification.

[24] Taut, *Houses and People of Japan*, pp. 130-131, 217 ff.

[25] C. Papas, *L'Urbanisme et L'architecture populaire dans les Cyclades* (Paris: Dunod, 1957), pp. 143-144.

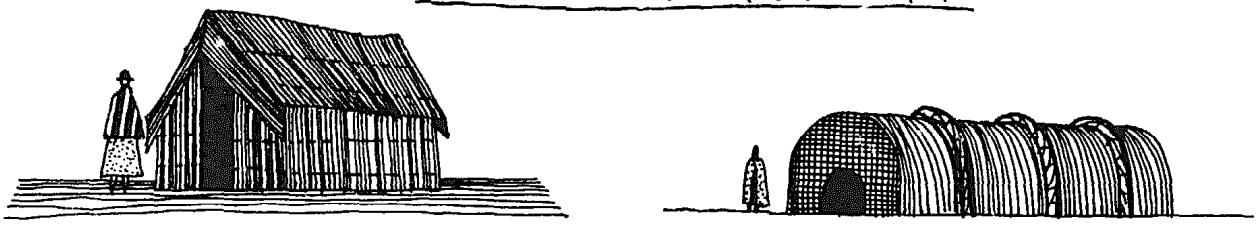


FIG. 2.3. Dwellings made of one material (reeds). Left: Uru dwelling, Lake Titicaca, Peru. Right: Marsh Arab dwelling, Iraq-Iran border.

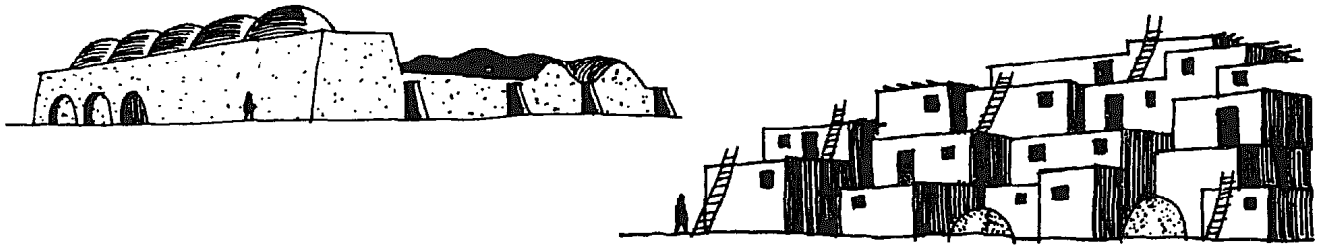


FIG. 2.4. Dwellings made of one material (mud). Left: Iran. Right: Pueblos, southwestern United States.

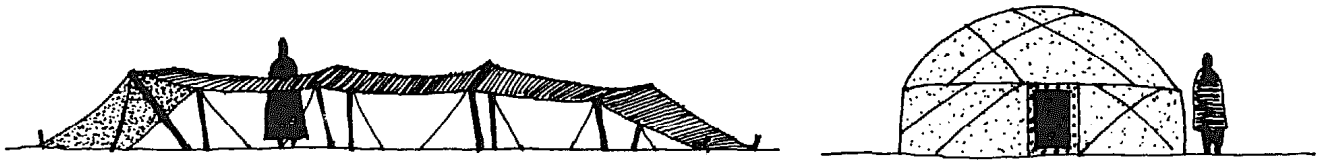


FIG. 2.5. Portable tents of sticks and felt. Left: Arab tent. Right: Mongol Yurt.

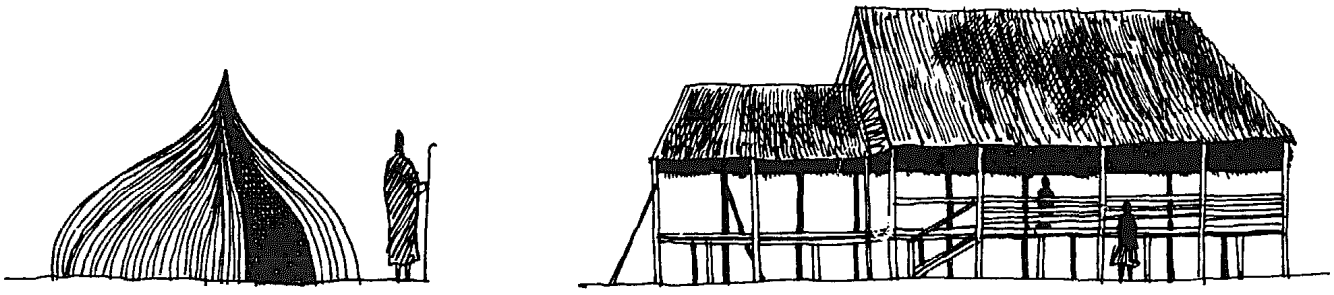


FIG. 2.6. Two examples from the great range of house forms using thatch and wood as materials. Left: Masai dwelling (Africa). Right: Yagua dwelling (Amazon). The houses in figures 2.3 through 2.6 are not drawn to the same scale, but their size is indicated by comparison with the human figure.

and, especially, *roof* on a slender frame. In other cases the reasons for irrational structure may be religious or social. In any event, structural techniques and materials by themselves do not seem to fully explain the nature and diversity of the forms which we find.

Site

I am not certain that any consistent theory of site as a form determinant has ever been proposed. However, there have been attempts to explain the form of such *settlements* as Italian hill towns and towns and villages in the Greek islands—hence also house form—in terms of terrain, lack of land, and so on. There is the ecological determinism of Evans-Pritchard and others regarding the Nuer in the Sudan,[26] and the work of Brockmann in Switzerland attaching a great deal of importance to this aspect.

It would be wrong to minimize the importance of site for primitive and vernacular builders, but one can question the determining influence of the site on house form. The importance of site is shown by the almost mystical attachment of primitive, and even peasant, cultures to the land, testified to by the care with which land is treated and houses placed on it. This attachment can lead to persistence of sites because of their traditional nature. For example, the Southwest Pomo Indians of California have refused to leave a site which is unsatisfactory in terms of access to work and shopping because of its traditional nature; [27] in the past, when these same Indians moved from coastal locations in the summer to mountain ridges in the winter, their houses remained unchanged in spite of the very different sites.

In the southwestern United States, areas of similar site and climatic conditions have been the setting for both the highly individual Navajo house and the Pueblo cluster, which is basically a social unit the collective nature of which is essential. There are also profound differences between the landscape, settlement pattern, and house forms in Chihuahua (Mexico) and Texas, which are separated by the border, an imaginary line in physical terms, but very real in terms of attitudes to life, economics, nature, and the meaning attached to the house and the city.[28]

The *Hogaku* system of orientation in Japan determines the location of Japanese houses without regard to topography, while in India houses on steep hillsides are so strictly oriented to the East that the doors face

[26] See E. E. Evans-Pritchard, *The Nuer* (Oxford: Clarendon Press, 1960), pp. 57, 63-65; and Robert Redfield's criticism of this in *The Little Community* (Chicago: University of Chicago Press, 1958), pp. 30-31. See also Lucy Mair, *Primitive Government* (Harmondsworth, Middlesex: Penguin Books, 1962), pp. 22-25, where, in discussing the Nuer, Dinkah, Anuak, and Shilluk of East Africa, she attributes their settlement patterns almost exclusively to site, particularly to the need to avoid floods.

[27] There is also the example of the reconstruction of towns and villages on the same sites after wars, disasters, and so on, in spite of attempts to relocate them in more "reasonable" places.

[28] See J. B. Jackson, "Chihuahua—As We Might Have Been," *Landscape*, I, No. 1 (Spring 1951), 14-16.

up the slope.[29] In the Gilbert and Ellice islands houses are oriented to the forces of the Universe rather than to the topography,[30] as was also the case in China. Stones and hillocks have stronger earth powers than lowlands in Lithuania, so buildings are placed with consideration of this belief rather than in relation to topography in the physical sense. Non-use of land through the reservation of graves, groves of trees, historical sites, and sacred water sources is an important general aspect of the influence of site on house placement—but site in the spiritual, not the physical, sense.

The impact of site on crops is more critical than on house form, yet even crops in one particular area may change as they have done in Ceylon from spices to coffee, to tea, to rubber, and may change again. Of course, there are physical limits—one cannot grow pineapples in Greenland[31]—but there are many choices for any area. Similar site conditions can also result in very different house forms, and similar forms can be built on very different sites. Water, as a site, for example, can be handled by building over the water on pilotis, building on the shore, or using a floating house. Site makes some things *impossible*—one cannot have a floating house where there is no water—but all the forms have been used and all have variants.[32] At the same time, houses raised on pilotis have been used far from water, and in some cultures different groups of people on the same site use houses either on stilts or on the ground.[33]

Very similar sites often show very different forms; for example, on the coast one can aim for the view or turn away from it. Even sites as forceful as mountains, deserts, and jungles have produced great variations in house forms.[34]

As we have noted, site influences both the city and the house, but it does not determine form. We might say with Vidal de la Blache that "nature prepares the site and man organizes it to enable him to satisfy his desires and his needs."[35] In one sense, the effect of site is cultural

[29] David Sopher, "Landscape and Seasons—Man and Nature in India," *Landscape*, XIII, No. 3 (Spring 1964), 14-19.

[30] Peter Anderson, "Some Notes on the Indigenous Houses of the Pacific Islands," *Tropical Building Studies*, University of Melbourne (Australia), II, No. 1, 1963.

[31] L. Febvre, *La Terre et L'évolution Humaine* (Paris: La Renaissance du Livre, 1922), pp. 432-438.

[32] For example, see Rapoport, "Yagua, or the Amazon Dwelling," pp. 27-30, where houses in clearings in the jungle, on the shore, and floating are all described in the Iquitos area of Peru. See also G. Gasparini, *La Arquitectura Colonial en Venezuela* (Caracas: Ediciones Armitano, 1965), pp. 22-23, 33, 36, where we find that, on Lake Maracaibo and other lakes in the area, communal houses for 300 in clearings in the jungle, scattered dwellings in villages and hamlets on the shore, and lake dwellings on piles are all used.

[33] Deffontaines, *Géographie et Religions*, p. 23, referring to cultivators and craftsmen on the Admiralty Islands.

[34] Compare Max Sorre, *Fondements de la Géographie Humaine* (Paris: Armand Colin, 1952), pp. 202-206, with regard to site, altitude, and cities; and L. Febvre, *La Terre et L'évolution Humaine*, pp. 411 ff., where cities on similar sites (Zurich, Lucerne, Thonne, and Geneva; Venice, Amsterdam, Danzig) are shown to be very different.

[35] Cited in Febvre, *La Terre et L'évolution Humaine*, p. 414. My translation.

rather than physical, since the ideal site depends on the goals, ideals, and values of a people or period, and choice of the "good" site—whether lake, river, mountain, or coast—depends on this cultural definition. Use or nonuse of mountains may be due not to their difficulty as sites but to the attitude taken toward them.[36] Site selection may be due to supernatural aspects or may depend partly on the political and social viewpoint, as in Islam, where in some periods coastal sites were sought for cities, while in others inland locations were preferred.[37]

Within cities, preferred sites have varied in similar ways. Typical of Moslem cities is the location of "nobler" crafts immediately around the Mosque and "baser" ones further out, a pattern independent of the nature of the physical site. It was brought to Mexico by the Spaniards (who probably got it from the Arabs), and in the same area we find both Indian towns with a random distribution of trades and Spanish towns with the "Islamic" pattern of "noble" trades and rich houses clustered around the Plaza.[38] In one case position is significant and in the other it is not, a crucial element in the space organization of the house-settlement system (see Chapter 3), yet independent of site.

Settlement patterns themselves, which tend to great complexity, seem independent of site. The same areas may have isolated farms, hamlets, or villages, while even mountains, which are rigorous and forceful sites, exhibit a variety of habitats based on cultural grounds, as in dispersed Germanic areas and large villages in the Latin areas of the Alps.[39]

Mediterranean areas display a great concentration in villages, and a desire for concentrated living no matter what the site. An area like the Balkans shows historical, i.e., cultural, differences rather than those due to site or climate, and Greco-Roman, Turkish, Slavic, and other forms are often found in the same place. Sardinia has had very different village and house types at different times, as have parts of Africa.[40] In fact, almost universally, the same site through history will have had very different forms of dwellings, as is true of Latin America, where areas changed from Indian houses to courtyard houses with the coming of the Spaniards, and are now changing to the Anglo-American house-settlement pattern, as is also happening in the cities of Africa and Asia. The courtyard house itself was used on both flat and hilly sites, although some modifications did occur (Fig. 2.7).

[36] Deffontaines, *Géographie et Religions*, p. 101. For example, compare the Altiplano in Brazil and Peru, mountains in the Kabylie and Japan.

[37] Paper by Professor Charles Issawi, Columbia University, at the Conference on Middle East Urbanism, University of California, Berkeley, October 27-29, 1966. In relation to buildings see Vincent Scully, *The Earth, The Temple and The Gods* (New Haven: Yale University Press, 1962), pp. 22, 26, on how different sites were sought out in different periods.

[38] Dan Stanislawski, *The Anatomy of Eleven Towns in Michoacan*, The University of Texas Institute of Latin American Studies X (Austin: University of Texas Press, 1950), especially pp. 71-74.

[39] Sorre, *Fondements de la Géographie Humaine*, pp. 67 ff., 70. It should be stressed that both houses and settlements are *affected* by the physical site.

[40] *Ibid.*, pp. 73-76.

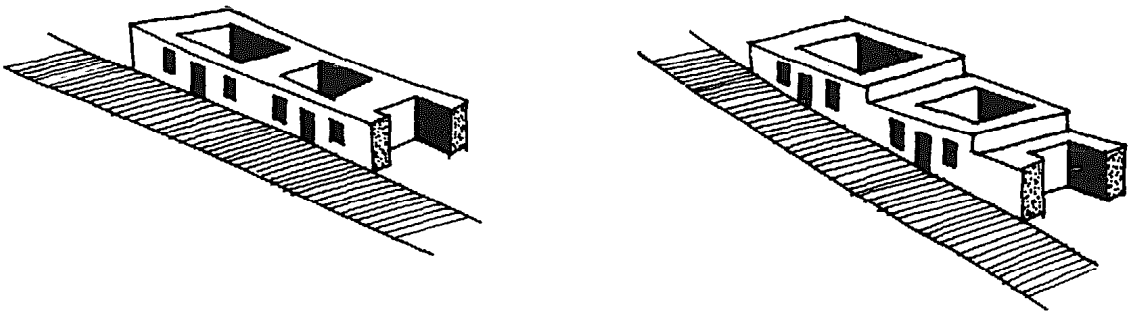


FIG. 2.7. Part of a row of courtyard houses (Latin America). Left: Flat site. Right: Hilly site.

Defense

Typically, when social explanations of house form are proposed, defense and economics—the most *material* ones—are most commonly used. Defense has been cited more to account for tight urban patterns than to explain the form of dwellings, but even in this respect it does not provide a fully adequate explanation. Prehistoric Crete provides a good instance of an area where defense could not have been the reason for the tightly clustered settlements, which must be attributed to the gregarious instincts of the people. This gregariousness, which applies to the Mediterranean as a whole, still prevails today. There are few isolated farms in Crete, although there may be some isolated huts occupied during certain periods of the year. The Cretan's house is in the village, if possible.

> The unsociable Englishman prefers to live near his work even if he has to walk miles to visit his neighbours, his pub or his chapel. The social Greek prefers to live in a crowded village among his friends and his cafe, even though he may have to walk miles to till his fields or trim his vines, and I think the prehistoric Cretan was like him.[41]

The compact towns in the Greek islands have been attributed to the needs of defense, lack of money (so that the houses themselves had to form the city wall), lack of arable land and the need to conserve it, and the need for shading for climatic reasons. Since all of these undoubtedly play a part, no single causation is possible; we need also to consider the element of choice, as exemplified by a love for crowding.

Defense certainly plays a role in deciding house form, and use of stockades, palisades, and fences has defensive implications as well as the religious ones discussed later. Defense, however, never fully accounts for form and may even be symbolic, as has been suggested for the Pueblos.[42] Even where defense is obviously of great importance, as among the Masai, the specific form of the dwelling is related to their

[41] R. W. Hutchinson, *Prehistoric Crete* (Harmondsworth, Middlesex: Penguin Books, 1962), pp. 161, 163.

[42] See J. B. Jackson, "Pueblo Architecture and Our Own," *Landscape*, III, No. 2 (Winter 1953-54), 23, where he suggests that it is not a fortress but exists to symbolically protect the sacred room.

attitude to cattle, which is a very different matter. The Masai warriors' kraal, which is also defensive, has a form very different from the "normal" kraal and no fence, while the Mousgoum farm in Tchad is also an enclosed circle for defense, a type of nomadic encampment in permanent form, but different from the Masai version.

In the Cameroons the need for defense is handled very differently because granaries rather than cattle are important, and there is a different value system. Within the same area of the Cameroons, where the danger of attack is relatively constant, the forms differ depending on whether the family is polygamous or monogamous. In each case there is concern with controlling access by use of a single entry, but the spatial arrangements vary depending on family and social organization. For example, in Douvangar Mofou and Foufou farms the entry is through the house of the head of the household, while on the Massa farm the chief is in the middle, surrounded by members of his family. The Natakan farm has defensive needs but its form is different because the family is monogamous; the woman has great authority and controls the main granaries. We therefore see marriage customs and other factors affecting the form of different dwellings, all of which have defense requirements.[43]

The communal dwelling has been linked by some to the need to form a survival unit.[44] Even if this explanation is accepted, we find that this form is not an inevitable result of the need for defense. The communal dwelling is a very different solution to the mountaintop village, or the village behind a palisade. Sparta and Athens found very different ways of handling the need for defense, as did Venice and the walled towns and even the latter can be very different in form—as are Carcassonne and Aigues Mortes. Communal dwellings themselves take on contrasting forms: the pueblo is very different from the Iroquois longhouse, which in turn differs from the Kwakiutl house. They vary in shape, size, and internal arrangement. For example, in Venezuela we can compare the round *churuata* of the Piaroa Indians in the Alto Orinoco with the rectangular collective house with curved apsidal ends of the Motilone Indians on the Venezuela-Colombia border; they also have different internal arrangements, the latter having three aisles. On the Brazilian border there is still another type in which, in addition to the three aisles, palm leaves divide the living areas.[45] We have already seen that both pile dwellings and other types coexist on Lake Maracaibo. The pile dwelling has an obvious defensive component against people, insects, animals, and snakes, yet other types seem able to solve the problem in

[43] See Beguin, Kalt *et al.*, *L'habitat au Cameroun* (Paris: Publication de l'office de la recherche scientifique outre mer, and Editions de l'Union Française, 1952) for many examples of the variations in the houses of the Cameroons.

[44] Deffontaines, *Géographie et Religions*, p. 114, relates it rather to totemic clan structure, while Lewis H. Morgan gives it a very different attribution, and comments on the great number of forms the communal dwelling in North America takes in his *Houses and House Life of the American Aborigines* (originally published 1881; republished Chicago: University of Chicago Press, Phoenix paperback, 1965). The communal dwellings of New Guinea and Oceania generally are, as we have seen, religiously motivated.

[45] Gasparini, *La Arquitectura Colonial en Venezuela*, pp. 20-21, 22, 23, 35, 36.

the same area. Access to pile dwellings varies greatly—boats or bridges are used when the houses are over water, while those on land employ ladders which can be withdrawn, or types of access ladders which animals cannot negotiate, such as notched tree trunks or the pole steps of the Congo.[46]

Some villages in Slovakia have a "defense" form while others do not.[47] Survival of an archaic form in some areas and its disappearance in others which are adjacent show the complexity of the forces operating. The inception of the fortified house, found from the Atlas Mountains to Scotland, is often not for defense in the direct sense, and the forms taken are very different. We need only compare the houses of the Atlas with those of Scotland, or the towers of San Giminiano or Bologna with the Palazzi of Florence. The towers of Bologna and San Giminiano themselves are not just a defensive form—matters of prestige are involved, and other towns in the area did not develop that form.

In summary, many factors are neglected by accepting defense as the only determinant of form. Additionally, the element of *choice* of which method of defense is to be used is of great importance.

Economics

Economics has been widely used to explain settlement and building form, and its importance is indeed great. However, it is possible to question its determining role through an argument analogous to one already used. In an economy of scarcity the need to survive and to use resources maximally is so great that these forces may be expected to wield tremendous power. If, even under those conditions, economic forces are not dominant, then the argument for economics as generally determining form becomes rather suspect.

Even in economies of scarcity there are many examples of herders living among agricultural people and not only failing to accept the economy available, but despising it and the people who practice it. The Babenga and the Pygmies exchange agricultural products and game without giving up their way of life.[48] The Masai, Bakitara, and Banyankoli in East Africa avoid the economic possibilities of the examples around them, and use their cattle unwisely in economic terms because of the

[46] Pile dwellings have been explained in terms of climate—they aid ventilation—and site—they help avoid flooding; they also help fishing, water supply, and waste disposal, and have even been given a religious explanation, once again demonstrating the complexity of the form determinants. Tree dwellings, which are used in a number of countries, such as Melanesia and Central India, seem to be primarily for defense purposes, but there may also be religious and mystical components involved.

[47] I. Puskar and I. Thurzo, "Peasant Architecture of Slovakia," *Architectural Review* (February 1967), 151-153.

[48] Febvre, *La Terre et L'évolution Humaine*, p. 302. An analogous situation with regard to housing is the action of the Anglo-Saxons, who did not live in the luxurious empty Roman villas which they found; they destroyed them and built their rather primitive wooden huts close by. See Steen Eiler Rasmussen, *London: The Unique City*, 3rd ed. (Harmondsworth, Middlesex: Penguin Books, 1960), p. 22.

social and religious importance of cattle.[49] Since the Masai also have a horror of permanent dwellings, schools had to be installed in the open air and missionaries encountered a good deal of trouble in getting the idea of a permanent church accepted.[50]

Such people hardly ever consider giving up their way of life. When it *is* given up it may be exchanged for a "lower" economic level, as when the Cheyenne, with the introduction of the horse, gave up their permanent villages of semisubterranean houses and became nomads living in tepees; they gave up agriculture for the hunt. This is a reversal of the almost biological evolution from the tent to the hut and then the house, and also a reversal in economic terms according to early evolutionist views. From this point of view the Hidatsa, mentioned earlier, are of interest because their two ways of life, one of which had at one time been regarded as more advanced than the other, coexist, as do the corresponding house forms. In fact, archaic survivals are as common in economic life as they are in house forms.

Since houses are less critical for survival than food, we would expect them to be even less affected by sheer economic necessity. In Annam, as soon as a peasant has money he builds a house, beautiful but not comfortable, and *beyond his means;* there are more rich houses there than rich families.[51] Generally, since people with similar economies may have different moral systems and world views, and since the house is an expression of the world view, economic life has no determining effect on house form. Even lack of labor specialization, so typical of primitive, and to a lesser extent vernacular, builders, may be socially and culturally rather than economically motivated, and specialized labor may be despised. Even collaborative building may be due not to economic needs or complexity of task, but be socially motivated. An example is the Cebuan dwelling in the Philippines, which would be more economical if built differently, but social cooperation, good will, and community are the dominant factors.[52]

As we have already come to expect, the same forms of economy (in agriculture, for example) may lead to widely differing forms of rural settlement, houses, and their spatial arrangement. Wine growing areas

[49] See H. Epstein, who points out many instances of noneconomic values being dominant in the domestication of animals in his "Domestication Features in Animals as a Function of Human Society," in *Readings in Cultural Geography,* eds. Philip L. Wagner and M. W. Mikesell (Chicago: University of Chicago Press, 1962), pp. 290-301. Such values are held by many other people; for example, the Toda of South India. See also Deffontaines, *Géographie et Religions,* pp. 197-198, 229 ff., and Redfield, *The Little Community,* p. 25.

[50] Deffontaines, *Géographie et Religions,* p. 77, fn. 4. The Bedouin despise city dwellers and have a "mystical hatred of the roof, a religious revulsion to the house." See also Jer. 35: 5-10, on the Rechabites who must not build houses and always live in tents.

[51] Deffontaines, *Géographie et Religions,* p. 16.

[52] D. V. Hart, *The Cebuan Filipino Dwelling in Caticuyan* (New Haven: Yale University Southeast Asian Studies, 1959), p. 24. See also Robert Redfield, *The Primitive World and Its Transformations* (Ithaca, N.Y.: Cornell University Press, 1953), p. 11, where he disagrees with V. Gordon Childe about cooperation being economic in nature and quotes Polanyi on "economy submerged in social relations" and, in fact, says that in primitive and precivilized societies economy is chiefly noneconomic.

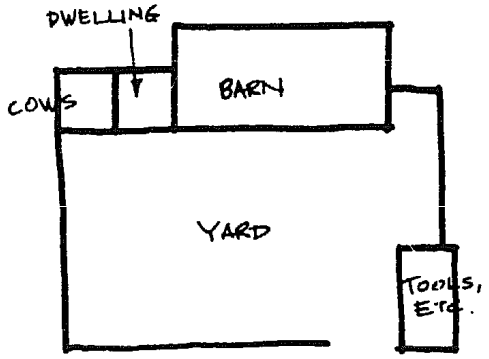


FIG. 2.8. Diagrammatic plan of a typical French farm with yard.

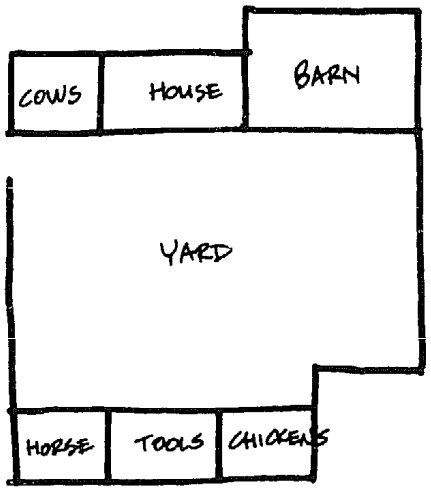


FIG. 2.9. Diagrammatic plan of a typical Italian farm with yard.

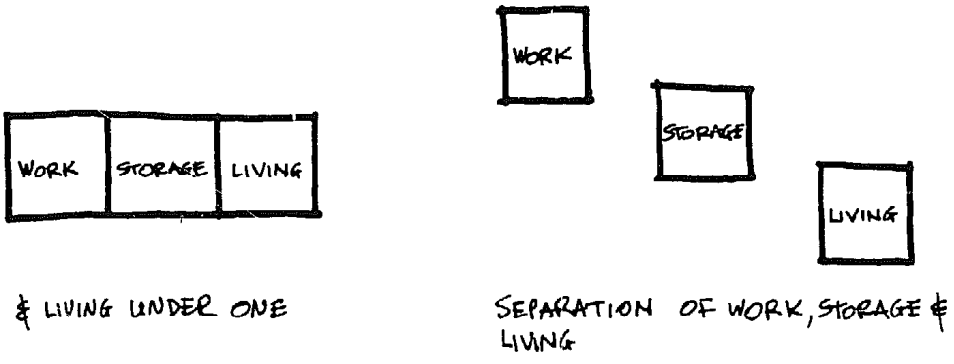


FIG. 2.10. Two basic patterns of the division of elements in farm dwellings. (Adapted from Weiss, Häuser und Landschaften der Schweiz.)

in France show both concentrated and dispersed settlement patterns, while the cave houses of the Loire Valley growers are very different from the houses of Provence.

Demangeon, who regards the French farmhouse as an economic tool and attributes its form to the need for man, his goods, and animals to be close together,[53] fails to account for the great variety of ways in which this goal is met. It is of interest to examine some farmhouses comprised of the same elements, and to see how differently they handle the requirements.

In the North of Italy, almost the same elements produce a plan very different from the French farmhouse (figs. 2.8, 2.9), while Swiss farmhouses show many arrangements of the economically required elements—house, stable, and threshing floor (Fig. 2.10) falling into two basic patterns, within which are innumerable variants. They differ from Demangeon's examples, although the elements remain the same.[54]

[53] A. Demangeon, "La maison rurale en France—essai de classification," *Annales de Géographie* (September 1920), pp. 352-375.

[54] Richard Weiss, *Die Häuser und Landschaften der Schweiz*, pp. 176-177, 179, 184-186, 189, 198, 236, 243 ff. See also Sorre, *Fondements de la Géographie Humaine*, pp. 135, 139.

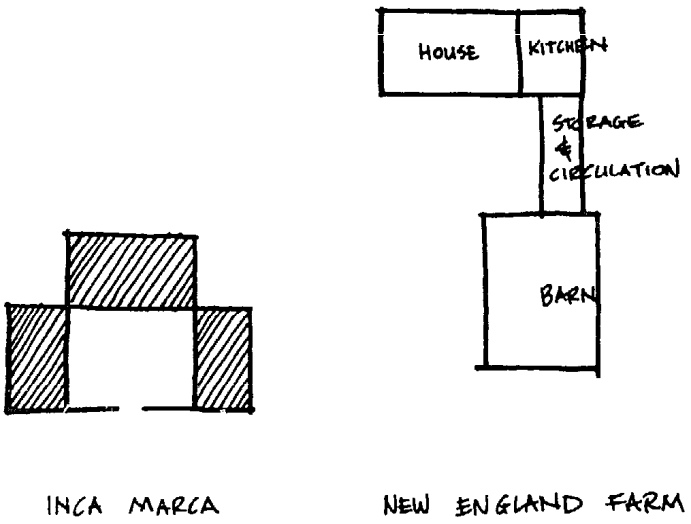


FIG. 2.11. Clustering within free outline (additive) as a method of providing space differentiation in dwellings and farms.

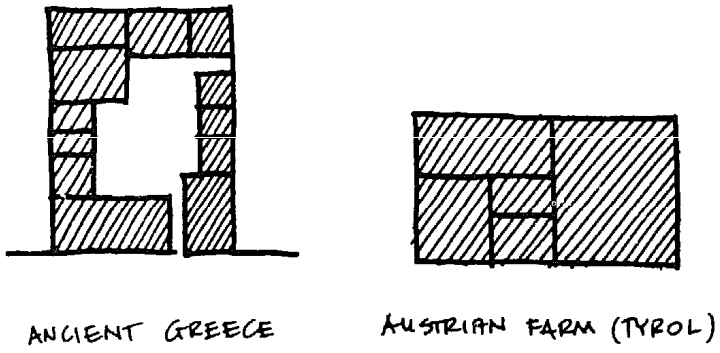


FIG. 2.12. Internal division within fixed outline (subtractive) as a method of providing space differentiation in dwellings and farms.

All of these house complexes demonstrate a general aspect of the economic need to *store*, especially in the rural house. This need affects the Inca house and the Pueblo as much as the French farmhouse, as shown by their clustering, but the *form* of that clustering differs and indicates the importance of considering the specifics of the problem rather than only its general features. If it is accepted that vernacular building is additive and adapts to changes more readily than the closed forms of high-style design, all these variations then fall into one of two ways in which additions can be made. One is by clustering, as in the pueblo, Inca *marca*, Italian and French farmhouses, and the New England farmhouse (Fig. 2.11). The other method is through inside subdivision, as in the Ancient Greek house or certain Swiss farms where growth was by subdivision within the wall rather than by addition (Fig. 2.12).

One factor which might be involved in all these variations is some aspect of social organization which differs among societies with otherwise similar economic bases. Once again, however, this does not fully account for the differences. For example, the extended family may account for the occurrence of grouping, but not for the form that it takes. The collective group of the Slavic countries, the *Zadruga*, is very different from the Kabylie collectivity and the Arab form generally; the Southwest Pomo Indian groupings of California are very different from those of the Pueblos, and both of these are very different from the Iroquois of the longhouse.

Even nomads, for whom the economic base affects house form by imposing the need for *mobility*, use widely varying forms. The Yurt of the Mongols, the hexagonal tent of the Tibetans, the numerous forms of the Arab tent, and the tepee and substantial, yet mobile, wooden houses of the Indians of the Pacific Northwest are all very different. Apparently even so critical an aspect of economic life as mobility does not suffice to account for house *form*, although it exerts great constraints.

The houses of the seminomadic slash and burn (swidden type) agriculturalists of the tropical forests, who have to move periodically because of rapid soil exhaustion, vary from very large communal houses of various kinds to small individual houses. Since these are all people of similar economic activity, their differing house forms reflect the different ways in which they visualize the setting for life. Figures 2.13-2.20 compare seminomadic dwellings and settlements. The settlement patterns are not drawn to scale, and they are based mostly on verbal descriptions. The houses are drawn to a common scale, and they, too, are based mostly on verbal descriptions.

Even in the case of modern American buildings, where the economic aspects would seem to be dominant, it has been pointed out that the

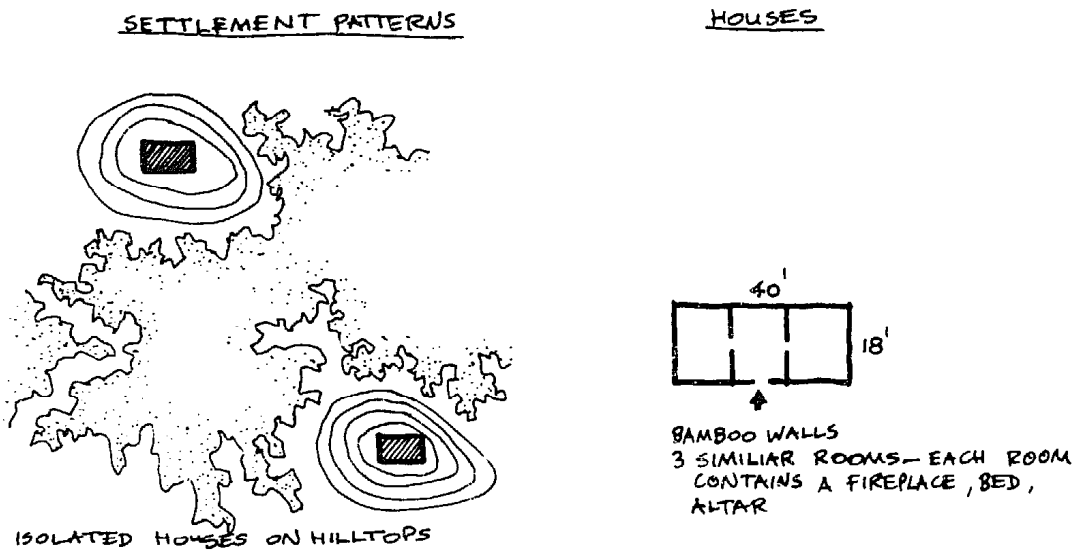


FIG. 2.13. Meo (Southeast Asia).

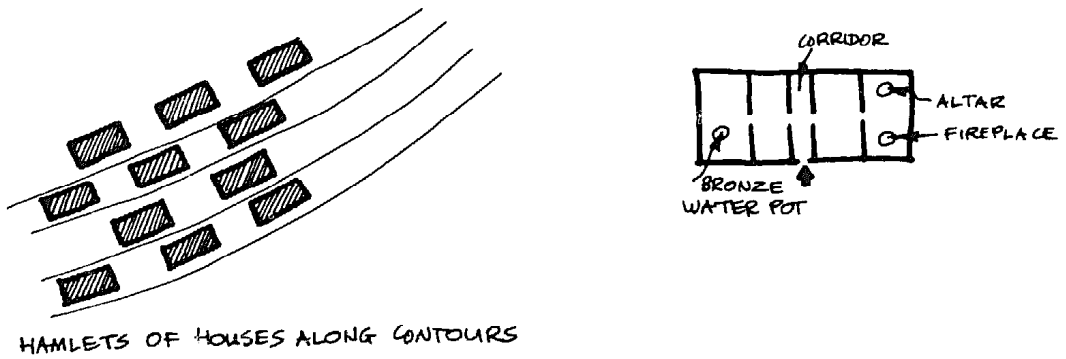


FIG. 2.14. Man (Southeast Asia).

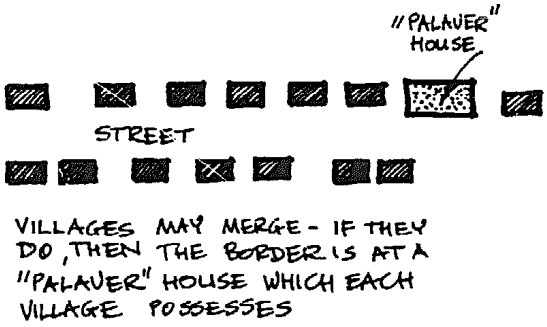
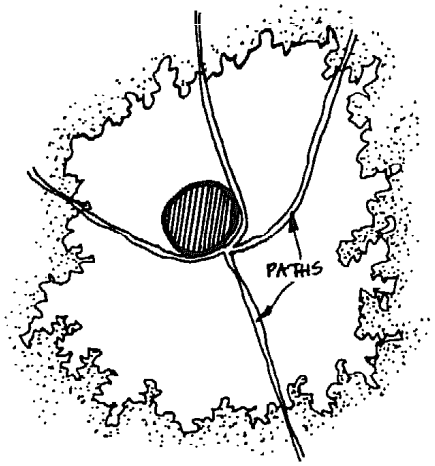


FIG. 2.15. Fang (Africa).



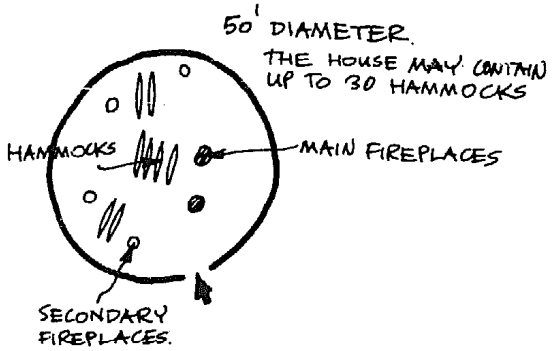


FIG. 2.16. Piaroa (South America).

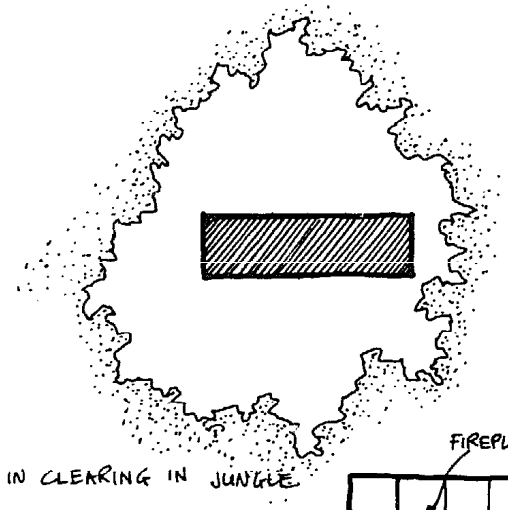
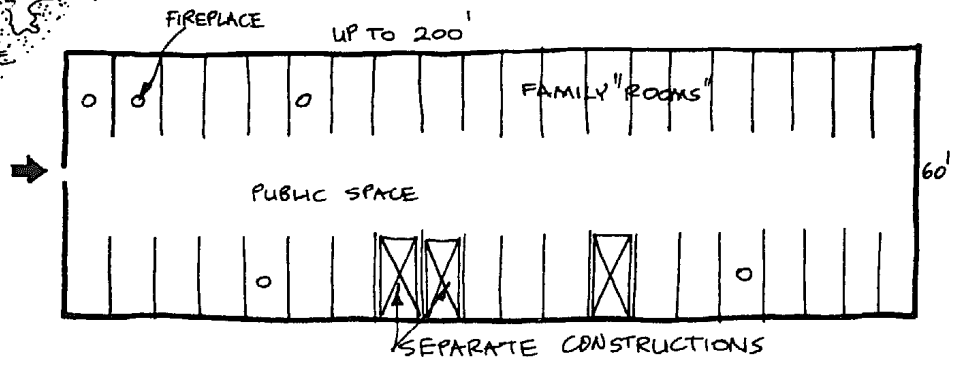


FIG. 2.17. Jamadi (South America).



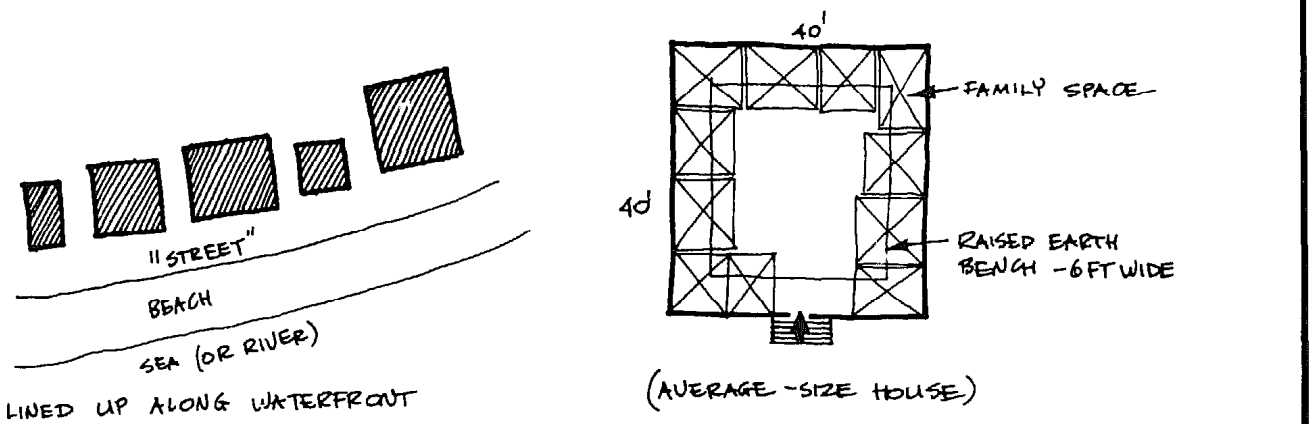


FIG. 2.18. Kwakiutl (northwest North America).

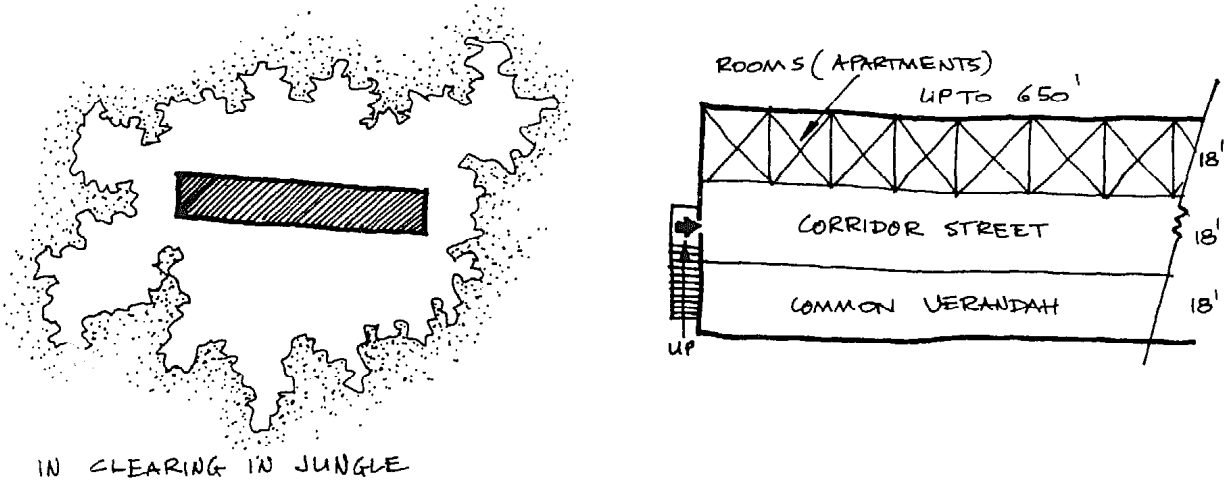


FIG. 2.19. Dyaks (Borneo).

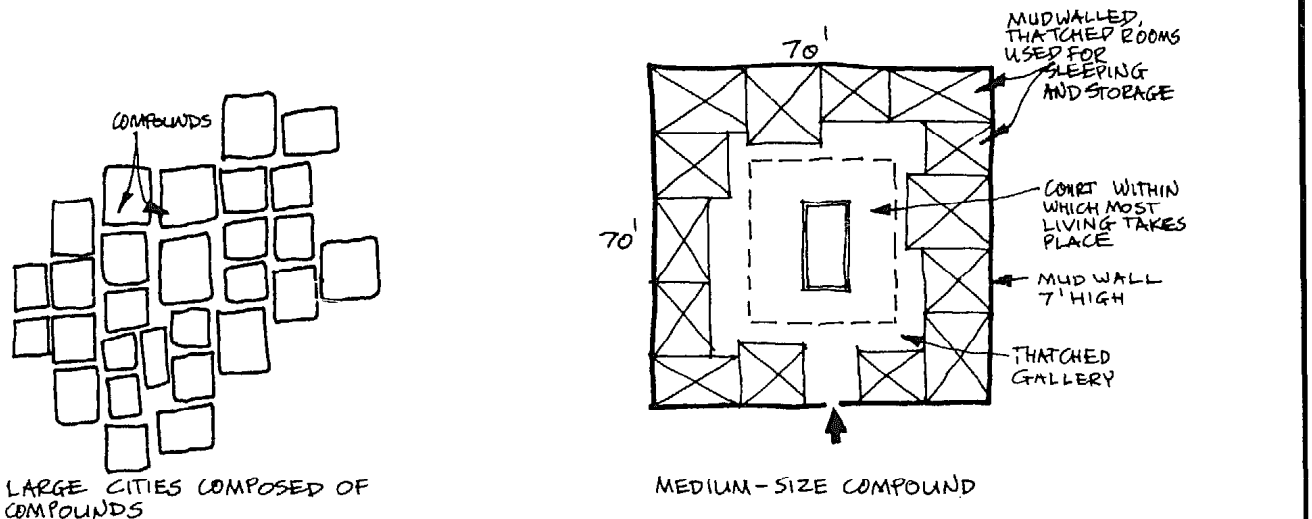


FIG. 2.20. Yoruba (Africa).

rise of the skyscraper in nineteenth century Chicago had no economic justification at the time, because of foundation problems and other factors.[55] The fact that every town wants a tall building is also a matter of prestige, and such aspects may still affect housing in many areas.

Religion

Possibly as a reaction to the physical determinism so common in writings on the subject, there is also an antiphysical determinism, which neglects a whole set of important material factors and attributes the form of houses to religion. This view has been expressed best by Deffontaines and Raglan.[56]

The latter takes the more extreme position which he sums up as "the sacredness of the house" [57] and succeeds in demonstrating that the house is much more than shelter. It becomes clear that this alternate view explains many aspects of the house at least as well as the physically oriented view of the house as shelter. However, the religious view is oversimple in trying to attribute everything to a single cause. It is one thing to say that the dwelling has symbolic and cosmological aspects, that it is more than a device for "maintaining the equilibrium of the metabolism," and another to say that it has been erected for ritual purposes and is neither shelter nor dwelling but a temple.

Once again the general point, even if accepted, fails to account for form, and the specifics need to be considered. If we accept that the house belongs to the woman and is primarily related to her, and that man therefore visits the woman and her bed,[58] the actual forms and devices used are very different indeed. Religion alone cannot account for this, so there must be other forces involved—a view strengthened by the fact that even today there are differences in the men's and women's domains in the American and English house.[59] Similarly, the sacredness of the threshold and portal, and hence the separation of the sacred and profane realms, can be achieved through the use of numerous and varied forms.

Deffontaines does refer briefly to the action of material forces, and is therefore more balanced than Raglan. However, because he concentrates on the religious aspect alone, and brings an overwhelming amount of material to support his view that religion is the determinant of form in landscapes, settlement patterns, cities, houses, demography, cultivation, and circulation, he presents a rather distorted view.

[55] Martin Meyerson, "National Character and Urban Form," *Public Policy* (Harvard) XII, 1963.
[56] Deffontaines, *Géographie et Religions*, who also deals with the impact of religion on all aspects of geography; Raglan, *The Temple and the House*. See also Mircea Eliade, *The Sacred and the Profane* (New York: Harper & Row, 1961).
[57] Raglan, *The Temple and the House*, Chap. 1 and p. 86.
[58] *Ibid.*, p. 35 ff.
[59] E. T. Hall, *The Hidden Dimension* (Garden City, N.Y.: Doubleday & Co., 1966), p. 133.

His view that while both man and animals seek shelter, a place to store things, and a micro-climate, only man has a spiritual aspect which is uniquely human and which distinguishes his constructions from nests, beehives, and beaver dams, is very convincing.[60] Many examples can be found of this sacred function of the house. In some cultures a man exiled from his house was separated from his religion, and for many peoples—in ancient Rome, New Caledonia, Cambodia, Annam, and China—the house was the only temple. Not only was the house the sole temple for daily (as opposed to official) religion for the ancient Chinese, but everything about it was sacred—roof, walls, door, fire, and well. There are areas such as Cambodia where allowing strangers into the house would be sacrilege; in Africa the house is primarily spiritual, a link among man, his ancestors, and the earth, and the principal inhabitants of many houses are the invisible, extranatural and supernatural beings. For nomads the tent is the dwelling of the divinity (which may explain the horror of houses noted before), and it is usually surrounded by a fence which delimits semisacred ground (such as the *Zeriba* of the Berbers); the fence may be as much for the separation of sacred and profane as for defense.[61]

Religion affects the form, plan, spatial arrangements, and orientation of the house, and may be the influence which leads to the existence of round and rectangular houses. The reason for a culture never having had round houses may well be due to the needs of cosmic orientation—a round house cannot easily be oriented. In Africa the distribution of round and rectangular houses is related to the distribution of religion, and many examples can be found, like the Zulu, where orientation is unimportant, round houses are used, and there may not be any straight lines. An extreme contrast is the *Trano* of Madagascar, which is oriented through strict axes and astronomical rules.

Many other aspects of the house—whether it is on stilts or underground, whether it needs special provision for keeping out or controlling evil spirits—can be attributed to religion. Similarly, the impact can be shown of religious considerations on settlement patterns and their changes in a given area. The Chinese village, the existence of ritual villages—as in the New Hebrides or the Sunday villages of Brazil and Guatemala—can be much better understood if the religious factor is considered. It is the only factor which would explain the special underground houses for menstruating women, as, for example, among the Nez Perce Indians.

It would be wrong, however, to say that all these aspects of dwellings have been determined by this single variable. This oversimple, almost determinist, approach is the greatest weakness of a view which provides insights which seem more significant than those of physical determinism. We begin to see that everything, including the house, can assume sym-

[60] *Ibid.*, pp. 12, 15-16.

[61] Deffontaines, *Géographie et Religions*, pp. 16-17. See also *Aspects de la Maison dans le Monde*, p. 14; the common practice of excluding menstruating women from the house also suggests its sacred nature.

bolic significance—that the whole Cosmos is a potential symbol.[62] Since there is a choice of symbols, religion as an explanation of house form is more possibilist, and less determinist, than the physical explanations of form.

General Criticism of the Physical Determinist View

The preceding section suggests that, before proposing an alternative way of looking at house form, a discussion of the determinist position in general, and the physical determinist view in particular, may be in order. This discussion seems called for in view of the great variety of consequences that can result from seemingly similar causes, and the similar results that seem to flow from totally different causes.

Cultural geography in general has seen a movement away from physical determinism. Deffontaines's book as a whole can be taken as questioning the determinist position, in that he points out that most primitive and even preindustrial peoples stress religion, in the broadest sense, more than they do material considerations or even comfort. This is a useful reaction against a view which says that "primitive architecture can be explained wholly in these material factors," being strictly utilitarian.[63]

Sorre points out that a meaningful civilization arose on the Northwest Coast of North America, but not in Tasmania or on the west coast of South America, which provided the same physical milieu.[64] The possibilities were the same, but since possibilities have to be used *there can be no physical determinism.* In fact, the school of geography represented by de la Blache, Febvre, Sorre, and Brunhes has been called "possibilist" because of its stress on the fact that the physical setting only provides possibilities, not imperatives, and it is man—not site or climate—that decides. This applies to many aspects of cultural geography and economic life, as well as to the dwelling and settlement. The great variety of forms strongly suggests that it is not site, climate, or materials that determine either the way of life or the habitat. Many examples from almost all areas of the world could be adduced to show that dwellings and settlements are not the result of physical forces, particularly since the form often changes in areas where physical aspects have not changed.

A good starting point in any general questioning of the physical determinist view is Mumford's argument that man was a symbol-making animal before he was a tool-making animal, that he reached specialization in myth, religion, and ritual before he did in material aspects of culture, and that ritual exactitude came before exactitude in work; man put his energy into symbolic rather than utilitarian forms even when he was barely starting. Possibly a nonphysical position needs to be taken

[62] Carl Jung, *Man and His Symbols* (Garden City, N.Y.: Doubleday & Co., 1964), p. 232.
[63] Sir Herbert Read, *The Origins of Form in Art* (New York: Horizon Press, 1965), p. 99.
[64] Sorre, *Fondements de la Géographie Humaine,* Vol. 3, p. 11.

regarding primitive house forms, since song, dance, and ritual were more advanced than tools.[65]

From this point of view, man's achievements have been due more to the need to utilize his internal resources than to his needs for control of the physical environment or more food. Mumford posits the primacy of the symbol—the primacy of the poetic and mythic function of symbols rather than their rational or practical use. This may explain the great variety of languages in such primitive areas as Aboriginal Australia or New Guinea. The primacy of this mythic function becomes clear from a comparison of the art of Lascaux and Altamira with the technology of the time—something which must have struck every visitor to these places.[66]

A similar contrast of approaches occurs if we compare Redfield's view of prehistory with Gordon Childe's. Redfield stresses the primacy of what he calls the moral order over the technical order in primitive societies, and questions Childe's rather materialistic approach, which stresses technique. Early societies, Redfield points out, are largely ethical, and their moral order is stronger than their technical one.[67]

I have already commented on the highly developed ceremonial life among people with poor material cultures. It might be interesting to determine how much time primitive people actually spend on ceremonial activities and ritual.[68] Of course, primitive and peasant people regard *most* activities as ceremonial in nature. In many cases, what distinguishes these people from each other is not their material life—which tends to vary little—but their ceremonial, and this is inevitably reflected in their buildings, as I will try to show in Chapter 3. For example, in New Guinea the *Kona* tribe, stone age and very primitive, has such a complex religious and ritual life that special villages needed for the ritual dances are built according to a specific plan (Fig. 2.21).[69]

The South Seas, the poverty of which has often been stressed, displays great stress on ceremonial avenues in the villages, and the vast men's houses with their dance grounds. These houses built for major rituals are very large and elaborate, often more than 300 feet long, with

[65] Lewis Mumford, *Art and Technics* (New York: Columbia University Press, 1952), and "Technics and the Nature of Man," in *Knowledge Among Men*, ed. S. Dillon Ripley (New York: Simon and Schuster, 1966). E. R. Service, *The Hunters* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1966), p. 2, contrasts the simplicity of hunting cultures with respect to technology with their complexity with respect to etiquette, religion, art, family, friendship, and kinship rules, which may be more complex than the corresponding institutions in our culture.

[66] As far back as excavations go, evidence of religious activity is found, and houses and tents show evidence of foundation sacrifices and other rituals. Many peoples will not enter a house or tent until it has been consecrated. See, for example, *Archeologia* (Paris), No. 4 (May-June 1965), pp. 18 ff., describing a dwelling at the cave of Salpêtrière, 20,000 years old, where ceremonies took place both at the erection and taking down of the tent. The excavators speak rather touchingly of the people staying out longer in the blinding storm while the consecration went on.

[67] See Redfield, *The Primitive World and Its Transformations*, and V. Gordon Childe, *What Happened in History* (Harmondsworth, Middlesex: Penguin Books, 1961).

[68] In fact E. R. Service, *The Hunters*, p. 13, remarks on how little time primitive people spend on food-gathering and related activities, and also on their complex and ritual food-sharing system.

[69] *Aspects de la Maison dans le Monde*, pp. 58-59, 65-66.

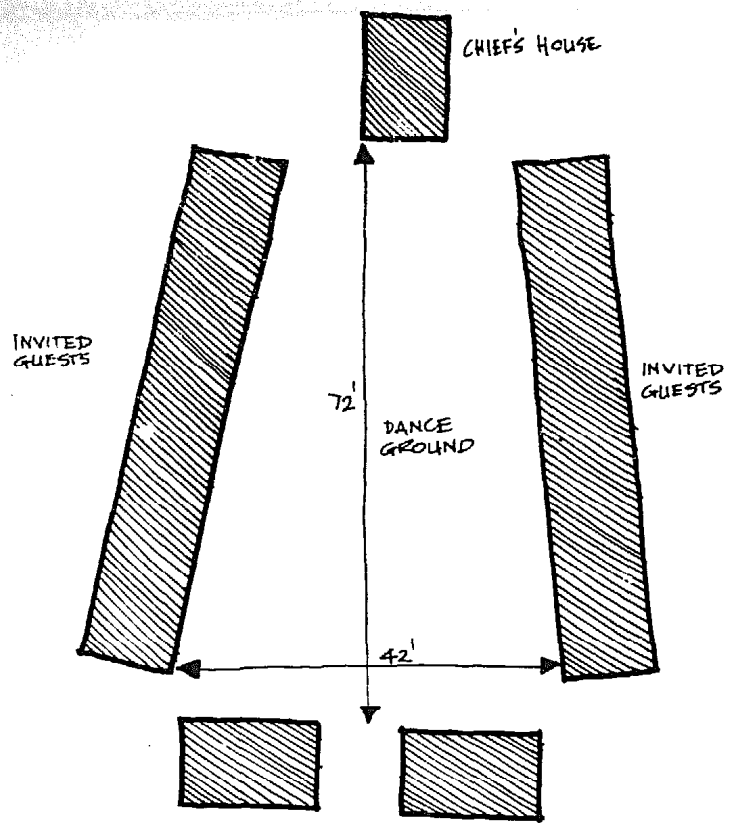


FIG. 2.21. Diagrammatic plan of special village for dance rituals, Ronpila, New Guinea. (Adapted from Aspects de la Maison dans le Monde, *p. 66.)*

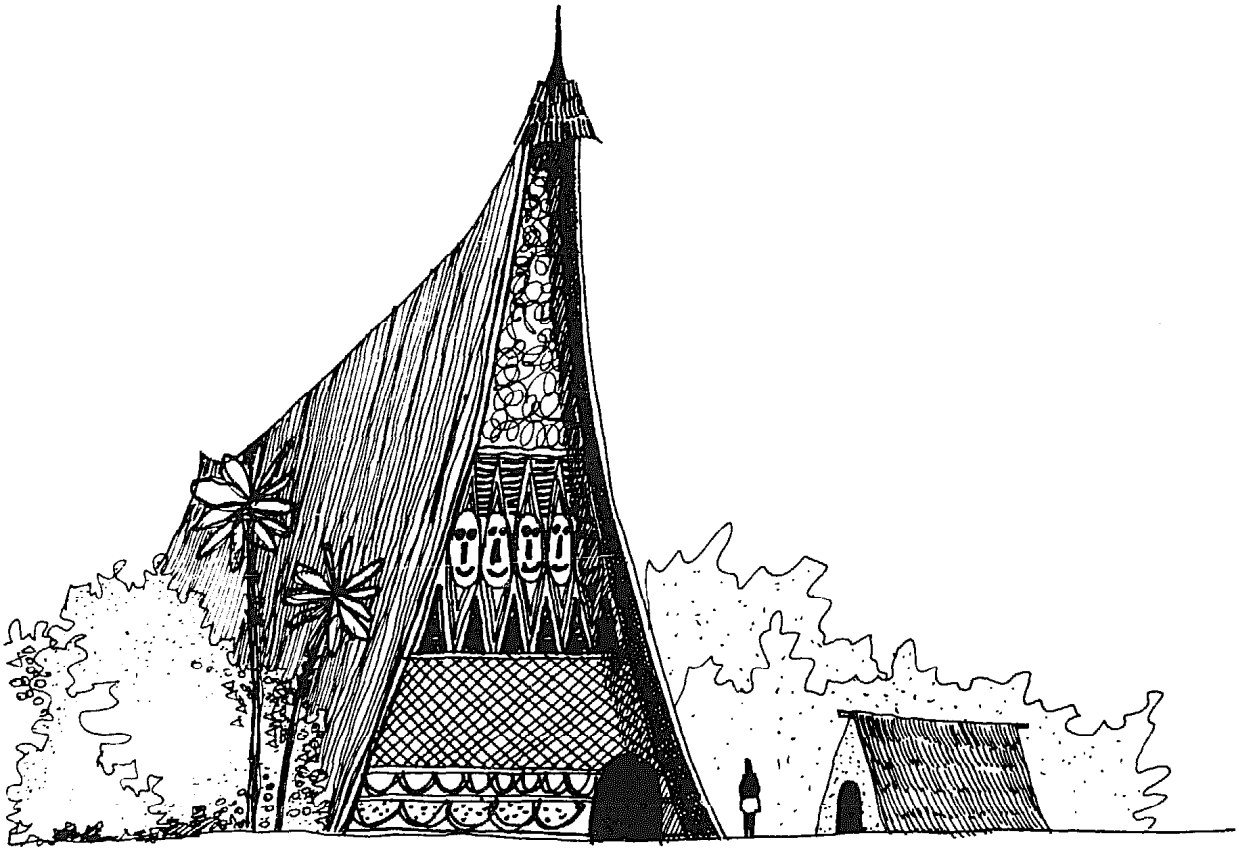


FIG. 2.22. Men's ceremonial greathouse and woman's dwelling, Kalaba tribe, New Guinea. Each area has a different type of greathouse—all are different but equally grand.
(Adapted from photograph in Guiart, Arts of the South Pacific, *p. 42.)*

different roof forms and details and elaborate entry porches (Fig. 2.22). Inside there may be two sides accommodating two intermarrying groups, each side having its own hearth and as many compartments as there are patrilineal groups in the community, and different grades of members may also have different compartments.[70] Each compartment stores the cult objects of the group, and at the far end is a walled-off area in which particularly sacred objects are stored, and is accessible only to the leading men of the village.

The fact of more stress on the symbolic than the utilitarian in these areas of low, almost subsistence, economy suggests that when there is an economy of abundance and surplus this emphasis becomes even more possible—but there is no inevitability, merely possibility. The exclusive, or inevitable, action of cultural factors is equally as untenable as any other single determinant and we need to recognize a valid middle ground. The need to consider many factors is, in the final analysis, the main argument against any determinist view. Societies of wealth may be able to devote their surplus to symbolic objectives, but may not wish to, as their value scales change and symbolic values become less important than they were in poorer societies. In the latter, however, striking instances of the value attached to symbols may be found, as in the case of the Eskimo woman who, in 1772, was trying to survive as a castaway all by herself. When found, she had produced art objects, decorated her clothing, and so on; while the Eskimo has had to reduce life to the barest essentials, art and poetry are an essential part of that life.[71]

[70] Guiart, *Arts of the South Pacific*, pp. 35-36, 38, 132.
[71] See E. Carpenter in G. Kepes, ed., *Sign, Image, Symbol*, p. 206.