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THE BUILT ENVIRONMENT AND SPATIAL FORM

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INTRODUCTION

The current fascination with what people term postmodern architecture has focused attention to the design of buildings in which we live and work, but the appeal is not limited to examples from our own familiar surroundings. During the last several decades anthropologists have been increasingly joined by others in taking a more careful look at the built environments of nonliterate societies, and especially the shelters they construct and occupy. The questions posed are broad: Why are there differences in built forms? What is the nature of these differences and what kinds of social and cultural factors might be responsible for the variation? Design practitioners, including architects, landscape architects, and planners, have become involved in debating these questions, as have behavioral and social scientists concerned with human interactions with the environment. At the same time, recent social theory has begun to focus anew on spatial as well as temporal dimensions of human behavior. These developments suggest that attention to the topic of this review is timely. Our purposes in reviewing the relevant literature include defining the major areas of research in the field in terms of issues and

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theoretical approach, critically evaluating some of the major contributions, and suggesting directions for future research.

Anthropological concern with the built environment is at least as old as the first formalization of theories of cultural evolution during the 19th century. Although material remains of earlier cultural constructions, and shelters housing living cultures, were taken as evidence of evolutionary status, the underlying question about the exact nature of the relationships between society and culture and the built environment persisted. Such relationships are interactive, in that people both create, and find their behavior influenced by, the built environment. A variety of formulations have been used to conceptualize this relationship: accommodation, adaptation, expression, representation and, most recently, production and reproduction. Each of these conceptualizations represents a different theoretical perspective; each implies a different set of questions and distinct (although at times overlapping) sets of data corresponding to aspects of the built environment and human behavior.

The *built environment* is an abstract concept employed here and in some of the literature to describe the products of human building activity. It refers in the broadest sense to any physical alteration of the natural environment, from hearths to cities, through construction by humans. Generally speaking, it includes *built forms,* which are defined as building types (such as dwellings, temples, or meeting houses) created by humans to shelter, define, and protect activity. Built forms also include, however, spaces that are defined and bounded, but not necessarily enclosed, such as the uncovered areas in a compound, a plaza, or a street. Further, they may include landmarks or *sites,* such as shrines, which do not necessarily shelter or enclose activity. Built forms may also refer to specific elements of buildings (such as doors, windows, roofs, walls, floors, and chimneys) or to spatial subdivisions of buildings (such as rooms—their sizes and function, arrangement and connections), which are often referred to in terms of their *plans.* Site plans consist of clusters of built forms in a particular arrangement that includes enclosed and open spaces. One terminological discussion avoided in this review is the distinction between architecture, on the one hand, and primitive, vernacular, folk, or traditional structures on the other. Architecture is typically defined to encompass the built forms, often monumental, characteristic of civilizations, and self-consciously designed and built by specialists. The current typological debate among architects, architectural historians, and folklorists (45, 220, 311) seems only tangential to our concerns here, since we believe any anthropological theory of the built environment should be able to accommodate and explain all "types."

We are not able here to direct our examination to human relations with the natural environment and landscape, or to large-scale settlement patterns. Although we review some of the work in ethnoarchaeology, archaeological

research in the area deserves its own consideration and review. The literature on physical dimensions of previous civilizations and the tempting materials on archaeoastronomy are too vast to do justice to here. Further, considerations of material culture, currently stimulating an enthusiastic revival of interest in the anthropological literature, and studies of artistic styles and patterns must also be deferred to other reviewers. Partly because of their moveable nature, material culture and traditional arts qualify as a separate category for consideration. Finally, a substantial literature in applied anthropology, primarily addressing housing issues in developing countries, requires separate treatment. The social, economic, and political issues raised in these studies and their policy implications surely command special consideration.

Our primary purpose here is to contribute to the development of a field of research that not only is interdisciplinary but also touches on essential issues at the center of current anthropological debate. In the last several decades, design professionals have become increasingly interested in cross-cultural examples and anthropological understandings of the built environment. During the same period, a collaboration of design professionals and behavioral and social scientists has formed around research aimed at improving our own built environments. These "environment-behavior" researchers include social, environmental, and developmental psychologists, sociologists, geographers, and anthropologists, plus research-oriented architects, landscape architects, and planners. While much of their work has focused on contemporary urban and largely Western societies, interest in topics and approaches traditionally researched by anthropologists is increasing. Some anthropologists have had an opportunity to work in design or environment-behavior fields in the capacity of teachers, researchers, and practitioners. The applicability of this research to current theoretical directions in anthropology that take account of the spatial and temporal characteristics of human behavior may be the ultimate test of relevance of the literature in this field.

Here we consider a limited number of theoretical approaches. These may be organized around four sets of specific questions:

1. In what ways do built forms accommodate human behavior and adapt to human needs? How does the social group "fit" the form it occupies?
2. What is the meaning of the form? How do built forms express and represent aspects of culture?
3. How is the built form an extension of the individual? How is the spatial dimension of human behavior related to mental processes and conceptions of the self?
4. How does society produce forms and the forms reproduce society? What roles do history and social institutions play in generating the built environment? What is the relationship between space and power?

Major differences exist in the conceptualization and development of theory. With regard to the first set of questions for example, theoretical development

seems somewhat more tacit than in other approaches, although there is focused consideration on model building. Regarding the last set, however, theoretical development is elaborate while concrete data are often missing. To each set of questions we have allocated a separate section below.

EARLY THEORIES

Consideration of the built environment in anthropological research can be traced to the earliest endeavors in social and cultural theory, and in ethnography. The idea that built forms and collective human behavior accommodate, express, and reinforce each other originated in the early evolutionary and functional theories of Morgan and Durkheim. As a manifestation of culture, the built environment was seen as integrated into the complex of traits that allowed a group to adapt and maintain itself successfully within their natural environment. In addition to providing shelter against the elements, the particular forms themselves were seen to mirror the cultures that produced them.

These early approaches sought to explain the purposiveness of built forms by referring to what they contributed to the maintenance of the society as a whole by accommodating and/or expressing social organization, social structure, cosmology, and the like. In *Houses and House-Life of the American Aborigine* (258), Lewis Henry Morgan observed that aboriginal house forms were designed to accommodate the collective endeavors of several coresident families. These dwellings, which made it possible for large numbers of household members to produce and consume food jointly, were taken as evidence for the practice that Morgan called "primitive communism."

Focusing on the broader issue of spatial organization, Durkheim (87) and Durkheim & Mauss (88) similarly saw the built environment as an integral part of social life. They drew attention to the classificatory processes by which meaning was attributed to spatial phenomena. The spatial order, including the built environment, is not only the product of classificatory collective representations based on social forms but also a model for reproducing the social forms themselves. While Morgan emphasized social organizational features in addressing the issues of the built environment, Durkheim & Mauss stressed cognitive aspects.

In a classic volume on the Eskimo, however, Mauss (248) provided the classic ethnographic demonstration of the role of the built environment at several levels of social adaptation and integration—ecological, social, and symbolic. Mauss described the seasonal variations in house form as essential to the adaptation of Eskimo society to annual climatic changes. Houses vary in terms of materials, technology, and form, but more importantly in terms of size and social organization. While the adaptation to the environment is important, Mauss's essential interest was in why winter homes are larger. He rejected as explanations the conservation of heat, diffusion of technology,

and requirements of collective hunting activities, arguing instead that the larger dwellings are required to accommodate collective ritual intensification during the winter months.

Ethnographic Traditions

Without explicit theorizing about the built environment, two general ethnographic approaches to indigenous architecture appeared around the 1920s in Britain and North America. These descriptions of the form, use, and meaning of the built environment often provided later theorists with sufficient material for constructing explanations. The British structural-functionalist tradition continued with the ideas of Durkheim & Mauss, viewing the built environment as an integral part of the social and symbolic orders. Descriptions of house forms and settlement plans were included as obligatory introductory or background elements, although some authors demonstrated more than a passive role for the built environment by illustrating its integration into social life (111, 245).

Perhaps the most extensive and systematic documentation of built forms themselves was produced by North American ethnographers, including Franz Boas and his students. "Salvage ethnography" efforts often included not only descriptions of use and meaning, but also details of construction techniques and processes, materials, and structural systems (see, for example, 33, 350). Influenced by German geography and the Kulturkreise School, American ethnographers described formal variations in material culture, including built forms, which provided the basis for the culture-area concept linking trait patterns and locale (79, 207). Attempts to explain the variation and distribution of house forms, however, often led to simplistic diffusionist arguments (371).

For cultural and social anthropology, the built environment continued in a relatively passive role in ethnography with three patterns emerging. One approach continued the analysis of household organization in relation to dwelling form (173, 388). Another began to examine built forms as metaphors for complex social and symbolic relationships: the Irish countrymen's "west room" (21) or the French peasant "parlour" (393). Both approaches stimulated further development and exploration of the built environment in social and cultural anthropology. A third was to publish separately from the larger ethnography an account of built forms and methods of construction with some notes on uses and meanings (27, 166, 209, 251, 315). These material culture descriptions put little effort into explanation, although an exception can be found in C. Daryll Forde's comparative analysis of material culture's role, including dwelling forms, in mediating the adaptation of society, through its socioeconomic system, to the natural environment (114).

Architectural Interest

Disappointment with modern architectural solutions prompted a number of
architects and architectural researchers to search for design principles and
inspiration among so-called "primitive" societies. Beginning after World War
II, and continuing into the present, a wide range of publications have explored
indigenous architectural forms through drawings, photographs, and text.
While some accounts tend toward the romantic with sometimes impressionis-
tic cultural descriptions (126, 253, 332, 333, 367), others include extensive
documentation and insight from sources in anthropology, geography, history,
and folklore. Some implicit theories of culture have been employed by
architectural researchers to interpret built forms. A few have argued that built
form is primarily determined by design and construction technology, which
indigenous builders adapt to material and climatic conditions in order to
maximize comfort (105, 112, 201). Others have emphasized how built forms
accommodate social groups and are integrated into the cultural whole (120,
268). Architect Christopher Alexander draws explicitly on anthropology's
structural-functionalism to interpret unself-conscious design processes of "na-
tive" builders and to articulate a theory of good design. "The rightness of the
form depends . . . on the degree to which it fits the rest of the ensemble" (5).

   In 1969 three major publications by architects set the stage for serious
future research developments along anthropological lines. These works are
primarily concerned with explaining cross-cultural or regional variability in
built forms, are broadly functionalist, and tend to focus on the integration of
some combination of ecological (construction materials and methods, and
climate), social organizational (household and community), and symbolic
(cosmology and meaning) factors. Labelle Prussin's now classic regional
study of dwellings in six villages in Ghana outlines the contributions of
historical, economic, technological, and social organizational factors to each
of the morphological patterns observed (295). Paul Oliver has been editing a
series of volumes (75, 268–270) that invite architects with field experience to
write about vernacular architecture. Oliver calls for the rewriting of
architectural history to include vernacular forms, and for the documentation
and preservation of such forms.

   Perhaps the most widely known work is Amos Rapoport's *House Form and
Culture,* a concise but broadly comparative work that rejects single-factor
deterministic explanations in favor of a multicausal, holistic "cultural"
approach (304). According to Rapoport, built forms are primarily influenced
by sociocultural factors modified by architectural responses both to climatic
conditions and to limitations of materials and methods. The importance of
cultural over ecological factors is demonstrated in his comparison of contrast-
ing Pueblo and Navajo house forms located in the same geographic area
(305). Rapoport argues that group life-style, defined as the integration of all

cultural, material, spiritual, and social aspects, best explains variations in form (305:47). In later works, which include comprehensive and encyclopedic reviews of the literature, Rapoport elaborates a framework for understanding how culture generates built form (306, 307) and explores how meaning is transmitted as nonverbal communication through the built environment (306, 308, 309).

Much of the recent research has been conducted by architects, geographers, and others with an interest in traditional architecture. They continue to explore the broad relationships between culture and the built environment by describing the variation and distribution of built forms within a particular culture or region (16, 20, 31, 71, 180, 199) or across cultures (102, 149, 271). Most of these studies seek to explain physical features of the built environment, including exterior form, interior plan, decoration, specific building elements (doors, windows, roofs), siting, and the like, by demonstrating the influence of multiple social and cultural factors within particular cultures. Some architects have also reported experiments with innovative design processes in traditional cultures (6, 104) or have laid out an entire program of architectural practice based on anthropologically informed perspective (76). More detailed and integrated interpretations of the variety of built forms, however, can be found in two recent works that provide context through complex interweavings and critical analysis of historical and cultural materials—one among native North Americans (261), the other in Africa (295).

Architects continue to be fascinated with finding and describing parallels between symbolic structures and architectural forms. Often, these descriptions focus on cosmology and cosmological structures as orienting and determining devices for the organization of the built environment (20, 283, 357). In some cultures the cosmology and the normative structure that supports it make explicit demands on the organization of physical spaces; for example, *feng shui,* the Chinese geomantic art of placement (60, 229, 331). In other cases, spatial principles are explicitly coded in language; these principles may constitute highly developed aesthetic theories, as in Japan (34, 244). Architectural research often provides many excellent descriptions, graphic representations, and observations that anthropologists frequently miss; the use of "axonometrics," a drawing technique for rendering three-dimensional spaces, could contribute greatly to anthropological research (36).

Explanation of the variability and distribution of built forms has also been the continuing concern of some geographers, folklorists, and historians of vernacular architecture, some of whom have critically applied the concept of diffusion by focusing on sociocultural interactions. Their studies also contribute methodologically because they attend to documenting formal variations or typologies of built forms. Kniffen's seminal article examining the geographic

spread of types of American folk housing explains variability in terms of cultural origins, continuities, and cultural change within varying environmental conditions (200). Otterbein's historical study of rural housing in the Bahamas links dwelling forms to changing patterns of family life (275). He shows that changes in house style (exterior image), related to upward mobility and prestige, occur through diffusion or the importation of what are perceived as more sophisticated urban house styles, while changes in form (interior plan), which provide conveniences and accommodate social organization, occur through adaptation and evolution. Prussin (295) accounts for the distribution of rectangular and round built forms in the Western Sudan by exploring the complex interaction of Islam with new building technologies spread by travelling craft specialists.

SOCIAL ORGANIZATION

Although theoretically fragmented and somewhat dispersed, a significant body of literature has examined a consistent set of questions regarding the interactions of the built environment with social organization and spatial behavior. Some authors take their charter from Morgan's assertion that the form of the primitive dwelling is a direct expression of the organization of the cooperating kin group that occupied it. This research takes a closer look at the nature of that relationship in terms of "fit" or congruence, such that particular forms (or aspects of forms) are typically associated with specific features of social organization. This correspondence may appear in the form of sizes, numbers, and types of rooms in association with the size and composition of the resident group. Underlying these asserted relations of fit is an assumption derived from an ecosystem model that postulates a measure of equilibrium between the inhabitants of a building and the form of the building (190). It suggests that human groups seek to adapt their buildings to their behavioral needs or functional requirements; when the built environment ceases to accommodate behavioral requirements, people seek to correct the problem through construction, renovation, or moving to a different building. Conversely, people also change their behavior to fit the physical environment, especially when it presents limitations. Although this model forms the basis of work in ecological psychology (24) and environment-behavior relations (309), and has been employed as an essential principle in some architectural design theory (5), it has not become a central organizing concept in anthropological research in this area.

A number of social anthropologists and ethnoarchaeologists have, however, implicitly used the fit model to guide their investigations. Their research focuses on identifying possible universal characteristics and describing culturally specific patterns of built-form/social-organization relations. The research

has examined relationships primarily in the domestic sphere, including house-hold and neighborhood, and has concerned itself largely with issues of dwelling plan, rather than "style," construction materials, and technology.

Household Studies

A focused exploration of Morgan's hypothesis about built form by social and cultural anthropologists begins with the critical examination of the composi-tion of the domestic group and the criteria of coresidence in defining the household unit. Sharing the same residence is argued to be important in encouraging or determining the social and economic cooperation among members of domestic groups, the basic unit of society (265). Two related issues are at stake, each having implications for relations of fit between social organization and dwelling form. One issue concerns how domestic group composition varies and the extent to which it is represented in dwelling form. The other questions the extent to which economic and social cooperation coincides with the coresiding unit.

Goody's edited volume, *The Developmental Cycle in Domestic Groups* (140), brought critical attention to the inherent variability in household com-position. Variability, in the form of shifting sizes and relationships as people experience life-cycle changes, provides a potential and continuing stimulus for altering the spatial configuration of the dwelling. In making inferences about the composition of the Lodagaba household group from dwelling form, Goody notes that "the fit is much closer in a society where the houses are built from mud as opposed to more permanent materials such as stone" (140:80). Goody argues that annual rebuilding activities give people the opportunity to make adjustments to accommodate changes in household organization. Although the studies on the developmental cycle do not, as a rule, explicitly address issues of the built environment, they do identify and define the most important source of potential lack of fit between domestic group composition and dwelling form.

The assumption that occupation of the same dwelling (coresidence) is a necessary condition for the formation of a cooperating household unit has also been questioned extensively (121, 155, 213, 385). These studies reveal that composition of the coresident group can vary independently with the organi-zation of the social units that carry out domestic functions, production, consumption, reproduction, and socialization. On the one hand, cooperating socioeconomic household units may occupy separate dwellings (347, 381), while on the other, coresident members of a dwelling may not all cooperate in domestic functions, or may not cooperate consistently in all domestic func-tions (213). Thus, these studies indicate that the social boundaries of house-hold units do not necessarily coincide with the physical boundaries of the dwelling itself.

Ethnoarchaeological Studies

While social anthropologists have paid relatively scant attention to the actual physical form of the dwelling in relation to social organization, a number of researchers, primarily ethnoarchaeologists, have addressed physical attributes of dwellings more directly. Archaeologists focus largely on the accuracy with which inferences about social organization can be made from the remains of dwellings. Although ethnoarchaeologists study living groups as analogs of the past (340), their explorations contribute to the general understanding of fit between built forms and social organization. In particular they ask how specific physical attributes of dwelling (size, number, and function of rooms, for example) correspond to features of social organization (size and composition of the domestic group). How can cross-cultural differences in built forms be explained in terms of variation in social organization, especially as it is related to sociocultural evolution? To what factors can variations in built form within a particular society be attributed?

Activity area research links patterns of social behavior to spatial organization and constitutes an important theoretical orientation (22, 187, 189, 312). When applied to the built environment, activity areas include bounded, or partitioned, spaces associated with particular social groups and their patterns of behavior (22). In theorizing about these relations, Kent argues that the use of space, as a matter of cultural organization, determines architectural form (189:5). Like Rapoport (304, 305, 307), Kent emphasizes behavior in her conceptualization of environment-behavior interactions; but she further argues that increasing social complexity in the form of specialization and stratification is expressed in the increased partitioning and monofunctional uses of spaces in built forms. Kent supports her hypothesis with observations of general patterns established in ethnographic research and cross-cultural comparisons (187, 189).

Broadly comparative research has also established a number of associations between dwelling form and social organization. Dwelling size may be an indicator of population size [with a proposed universal of 10 m^2/person (262)] or of postmarital residence practices (73, 99). Dwelling shape may also be linked to forms of social organization. Rectangular forms, which tend to be more permanent than round ones, have been found associated with sedentary societies (379), although nomadic societies may have round or rectangular forms. Rectangular buildings are easier to add on to than round ones (113, 304, 305); because they are more permanent, they are occupied over longer periods and are added on to more (250). Rectangular buildings are better predictors of large groupings of independently producing and consuming households (113, 379), and clusters of them may indicate the presence of nucleated settlements that provide an adaptive advantage through both defense and production capabilities (113).

The specific nature and degree of fit between social organization and built form in particular societies have been explored in recent ethnographic field studies conducted by archaeologists. David argues that the definition of fit is specific to each culture and must be discovered by the ethnographer (68). This includes identifying both the basic spatial elements associated with domestic functions (e.g. sleeping and cooking) and the social units to which they are linked. Among the polygynous Fulani, a sleeping hut and kitchen are associated with a wife and her children, but a number of "optional" built forms are also found that house men, guests, or animals (68). Because the mud huts are adapted to other purposes and recycled, they reveal a hierarchy of functions based on a cycle of reuse.

Where construction is more permanent, a lack of fit is repeatedly introduced into the dwelling by changes due to the developmental cycle (161, 178, 274). In village Iran the *compound* may include several related nuclear families, each (ideally) with its own living room and hearth (206, 374). Household wealth, however, determines whether changes in social organization find expression in built form (205). In these and many societies, the houses of the wealthy are larger, not only because they consume more space per person but also because the domestic groups are larger (205, 264). In addition, the dwelling as a physical unit may not neatly correspond to a bounded social unit such as households consisting of people who cooperate in a number of activities (22, 274, 381). Household units may be split into more than one dwelling because of ecological requirements; in nucleated settlements, inheritance patterns may divide the cooperating socioeconomic units (170); on the other hand, a coresidential group may include nonhousehold members such as renters, servants, or others (135).

In a theory of architectural design, McGuire & Schiffer synthesize a number of these points by treating built form as the product of a social process (250). Built forms serve utilitarian ends, mediating human relations with the natural environment and accommodating behavioral requirements; they have symbolic purposes such as expressing status differences. Contrasting architectural forms found in simple and complex societies can be explained rationally in terms of costs of construction versus maintenance. Round, temporary structures have low construction but high maintenance costs which conform to the use-life expectancies of more mobile peoples. As societies become more sedentary, and wealth accumulates, permanent rectangular buildings are built, reversing construction and maintenance cost relations. With increased wealth and social inequality, architecture becomes a vehicle for the representation of status differences.

McGuire & Schiffer's theory comes closest to providing a framework for the examination of cross-cultural regularities in social organization and built form. Their approach resembles others that emphasize rational-choice theory

in examining the design process (307) or housing satisfaction (259). One particularly promising direction is the examination of residents' housing choices as economically conditioned "consumer" decisions (383). In fact, simply providing a complete description of natural decision processes (see 132) involved in housing construction, renovation, and moves would probably take this research quite far in ordering known variables, thus facilitating cross-cultural comparison. As Schiffer has noted (340), much of the ethnoarchaeological work is still too fragmented theoretically; a more systematic approach to describing cultural processes would greatly strengthen it.

Social Organization and Dwelling Form

A number of ethnographic studies examine how aspects of the larger social system affect dwelling forms through household processes. In focusing on kinship, on the developmental cycle, and on economic and gender relations, these studies seek to explain household relations with the built environment as embedded in larger social processes that cut across individual domestic units. These analyses concentrate on how and why people manipulate the built environment to suit specific social needs and desires, and on how built form in turn enhances or inhibits behavior. Linkages to normative structures, ideological processes, and symbolic meanings are drawn into analyses but are generally viewed as secondary or derived from social organizational phenomena.

Keying on the influence of kinship relations, Rodman argues that the domicile itself is the focus of the formation of domestic groups in Vanuatu (325). Because of the impermanence of housing materials in tropical climates, the people of Vanuatu must constantly rebuild their houses, adapting them to changes brought about by the developmental cycle of the household. In rebuilding, however, they often move the houses to a new site. Rodman argues that this action reaffirms patrilocal residence in a matrilineal society and helps to strengthen claims and access of offspring to land held by the father's matriline. A number of other studies also examine what happens to house form, as influenced by kinship and property relations, either at marriage (167, 329, 347) or, through inheritance processes, at death (29, 170).

Using kinship diagrams and house plans, Schwertdfeger tracks changes in domestic group composition and built forms over time and across three Muslim cities in Africa (341). He develops a six-stage model of the developmental cycle in order to compare domestic group composition and fissioning. In the youngest, least urbanized city of Zaria he finds most dwelling construction stemming from generational changes in size and composition of the resident kin group (341). In the two older cities where land and housing are scarce, he finds most new construction is to accommodate renters who make up close to half of the household populations. Domestic groups in

these two cities, however, fission earlier than they do in Zaria. Schwertdfeger concludes that larger socioeconomic forces beyond the domestic group condition the choices and abilities of households in altering dwelling forms to conform to familial needs.

The examination of gender in relation to the built environment ranges from consideration of how women's life-cycle changes are represented in dwelling form (358) to discussion of how the use of domestic space becomes specialized by sex (19, 187). The most extreme example of spatial segregation is found in Near Eastern Muslim societies observing purdah. A number of studies concentrate on how built forms accommodate privacy and enhance the separation required by purdah (74, 285, 341, 389). The ideology of purdah, however, may not be similarly observed in spatial organization by all Muslim societies (341), and it seems subject to dilution through history (285).

Change in the relations of households within the larger social and economic systems can also have an important impact on dwelling form and behavior. Layne (227) examines Bedouins who become sedentary as a result of their increasing integration into the capitalist system. While they construct houses using organizational principles found in traditional tent plans, they create more spaces and use them in a more specialized manner. Increasing participation in the capitalist system has also affected Greek housing (279), and the modernization of urban Japanese apartment plans has distanced neighborhood social relations (252). In rural Portugal, increased affluence has added more specialized interior spaces, employment outside the local community has encouraged men to stay home, and suburban-style houses have reduced neighborhood interaction (216). However, not every change in built form causes or is caused by a corresponding change in social behavior (49, 326).

Ethnographic studies of social organization and the built environment have contributed to our understanding of how the larger social and economic systems influence dwelling forms through household processes. While these studies detail residents' social interactions in relation to their houses, they lack the theoretical development of approaches in symbolic processes and social production described below. They are important for their detail, however, and their potential complementarity with these directions.

This eclectic collection of research in the area of social organization and behavior indicates a number of directions for further exploration. In particular, the systematic documentation and analysis of the physical attributes of the built environment will benefit from better systematic analyses of household cultural processes, perhaps employing a decision-making approach. Research findings will be useful in ordering variables for theoretical development and evaluation of existing explanations. Current explanations of social organization and dwelling form that draw on larger sociocultural systems will find greater theoretical support in symbolic approaches and social production theories discussed below.

SYMBOLIC APPROACHES

Symbolic approaches interpret the built environment as an expression of culturally shared mental structures and processes. What do built forms mean and how do they express meaning? Concern with the built environment focuses on the identification of salient aspects of form, often in terms of native categories. A system of relationships among the physical attributes is often shown to imitate or represent—by their configuration, content, and associations—conscious and unconscious aspects of social life. Many symbolic theorists view built forms as tangible evidence for describing and explaining the often intangible features of expressive cultural processes. By implication this approach assumes the expressive cultural processes are the primary determinant of forms. As expressions of culture, built forms may be seen to play a communicative role embodying and conveying meaning between groups, or individuals within groups, at a variety of levels. The built environment may also act to reaffirm the system of meaning and the values a group finds embodied in the cosmos. Symbolic explanations often rest on demonstrating how the built environment corresponds to ideal conceptions of social, political, and religious life.

Symbolic studies take several forms: 1. social symbolic accounts emphasizing how built forms communicate social or political status; 2. structuralist approaches heavily influenced by linguistic theory; 3. examinations of the metaphoric and mnemonic functions of built form; 4. explorations of how meaning in the built environment is activated through ritual; and 5. phenomenological considerations. Overall, symbolic approaches include both the domestic sphere and nondomestic built forms, and occasionally site and settlement plans.

Social Symbolic Accounts

A substantial body of literature has treated the built environment as a direct expression of social or political structures. Built forms and site plans act as communicative or mnemonic devices expressing or reaffirming through symbolic associations relations between groups, or positions held by individuals within a culture's framework. The clearest exposition of this approach is Hilda Kuper's seminal argument that specific locations symbolize dimensions of Swazi political and social structure (210). As symbols, sites condense powerful meanings and values; they comprise key elements in a system of communication used to articulate social relations. The complex levels of meaning associated with sites are manipulated by political actors for a variety of purposes in different situations. The arrangement of sites and the organization of their meanings thus ultimately correspond to the social structure. Vogt similarly argues that in Zinacantan, structural and conceptual replications act

to integrate social relations on many levels from family to municipio to the ancestral gods (368), while Gilmore suggests that class relations constitute a mental map inhabitants project or introject onto the spatial organization of their southern Spanish town (131).

Another key area of research has focused on the relationship between individual or group identity and housing. Working primarily in contemporary urban societies, investigators find that class differences are expressed in and communicated through the manipulation of a range of settings, from dwellings and their landscapes (18, 81, 183) to interior decor (214, 375). The most developed thesis on housing and identity relations is Duncan's (83), who argues from studies in the United States and India that different domestic forms and their landscapes express institutionalized strategies for presenting the self as a member of a particular social group (81, 82). As developing countries modernize or become more westernized, collectivistic social relations and values that are represented in house styles shift to individualistic forms (83). Duncan further argues that collectivistic images are associated with closed social groups and a segregated sexual division of labor; these houses are seen as containers of women. Individualism is characterized by open social groups, high mobility, and less sexual segregation; these houses are seen as status symbols (83).

Duncan and others (242, 290) find plentiful evidence among more and less upwardly mobile groups in class and caste societies to support these hypotheses. Rodman, however, finds conflicting support for Duncan's thesis in Vanuatu (326). While observing that the more residential forms change, the more the men's house stays the same, Rodman identifies both collective and individualistic identities which together, in dynamic interaction, create for the built environment in Vanuatu a whole meaning complex.

In sum, these approaches identify immediate and direct expressions of social and political structures in the built environment. They focus on how the meanings associated with built forms are manipulated in communicating values and identities in relation to social and political change. Such investigations indicate the extent to which built forms are integral elements of the larger social structures, a strategy that lays important groundwork for expanded theories of symbolism and social production.

Structuralism

By far the most consistently developed theoretical approach in the symbolic analysis of built form is that of structuralism. Structuralist approaches postulate an underlying unconscious mental structure that is realized in myriad sociocultural manifestations. The major proponent of this approach is Claude Lévi-Strauss, whose commitment to Durkheimian synchronic, holistic analyses is heavily infused with linguistic theory. Borrowing from Saussure and

Jakobson, Lévi-Strauss postulates the existence of (*a*) a structured collective unconscious capable of generating patterned cultural behaviors, including built forms; and (*b*) unconscious mental structures comprised of binary oppositions that represent universal characteristics of human thought (231). Applying this approach to spatial organization, Lévi-Strauss reanalyzes ethnographic descriptions provided by earlier anthropologists of the built environment in societies with dual organizations. He postulates, for example, an underlying structure of interrelated homologous binary oppositions—periphery/center, married/unmarried, cooked/raw—to explain the similarities among Trobriand settlement plans, kinship relations, and food categories.

A third aspect of Lévi-Strauss's structuralist approach argues that things are not what they seem. He seeks to resolve contradictions and mysteries encountered when the institutionalized social-symbolic structures from the same society are compared. Among the Winnebago, with their moiety organization and their highly elaborated cosmological symbol system, Lévi-Strauss attempts to resolve contradictions in native descriptions of village organization. Members of one moiety describe the village as dichotomized space, while members of the other stress a conceptual model with two concentric rings. Although relations between the opposing intermarrying groups are expressed spatially, Lévi-Strauss argues they are resolved socially and symbolically through the introduction of a ternary structure incorporating the two opposing structures and mediating the contradictions between them (231).

Other structuralist applications postulate underlying structures that tend toward binary opposition, but not all find mysteries to solve with mediating structures. Ortiz critically applies Lévi-Strauss's dual-organization approach to Tewa spatial and social structures but rejects the concept of the ternary structure (273). Ortiz argues that the dynamic mediation of the binary structure never does away with the inherent asymmetry in the system. Other applications include discussions of the mediation of tensions found in Atoni social relations that parallel the classification of house parts and are expressed through house rituals (65); the identification of homologous structures of classification and social distance applied to humans, animals, and houses among the Thai (354); and the replication of cosmological, temporal, and spatial features in changing Maya culture (141). In a structuralist account based on the work of Mary Douglas, Ohnuki-Tierney explores the spatial structure of the Ainu universe through linguistic categories and detects sacred and polluting aspects in binary oppositions underlying the system (267).

Perhaps the most thoroughly integrated application of a structuralist approach to spatial relations is that of Hugh-Jones (175), who finds homologous structures in every part of Pira Parana life from kinship to food categories, from longhouse organization to the body and womb. She seeks to demonstrate the integration of the entire system through a series of symbolic

transformations of parallel structural meanings found in evidence from every-day and ritual practices. As in other structuralist analyses, cosmology de-termines the form of the built environment which is, in turn, used as a metaphor for the universe; in her account, cosmological meanings of every symbolic structure are activated through ritual acts.

Structuralist approaches have been widely criticized by those inside and outside anthropology. Critics claim that its static, synchronic view of culture fails to take account of social historical change, and that its focus on human cognitive practices excludes action or praxis (39, 130, 225, 257). Others have objected that analyses of oppositions and contradictory social practices, while claiming to reveal cultural meaning, may in fact impose their own order on the ethnographic material (77, 355). Further, structuralism in general and Lévi-Strauss in particular have been faulted for lack of clarity in explicating the actual theory by which isomorphisms, transformations, and inversions operate; the logic of the connections and operations is never made clear (208:531).

The most important advance beyond the structuralist approach can be found in the works of Pierre Bourdieu (39) who, like Giddens (see the discussion below), formalizes the role of action, or praxis, in the production and reproduction of meaning and structures in sociospatial orders. Bourdieu worries that the cultural rules that make up symbolic structures never appear in the native's head as they do in the ethnologist's analysis; he complains that structuralism "masks" this contradiction by locating the rules in the uncon-scious. Bourdieu further rejects structuralism's reliance on largely static, synchronic analyses and its reification of structure. In its place, Bourdieu proposes a theory based on practice. His key concept is *habitus,* a generative and structuring principle of both collective strategies and social practices; natives use habitus to reproduce existing structures without being fully aware of how structures are in turn affected. Habitus is a *system of dispositions* that includes not only "a way of being—a predisposition or inclination" but also the "result of an organizing action" (39:214). In generating practices, the habitus reproduces the conditions that gave rise to it initially; thus, habitus is both product and producer of history.

Bourdieu locates a principal mechanism for inculcating habitus in the objectification of symbolic oppositions found inside the house. In the house, everyone learns not by assimilating mental structures but by imitating the actions of others. A structuralist analysis of the Kabyle house revealing homologous structures of physical and symbolic oppositions provides the setting in which Bourdieu is able to trace out how actions, in relation to spatial configurations and objects, socialize. In the Kabyle example, the home is a metaphor for the organization of the universe structured on gender principles; it is the setting in which body space and cosmic space are integrated through

practice. By focusing on the spatial dimension of action, Bourdieu makes his most significant theoretical contribution to the understanding of human interactions with the built environment; he reconnects social theory not only with space but also with time. Like Giddens, he has made it increasingly difficult to use traditional synchronic structuralist approaches, which tend to consider spatial organization as "reflection."

Applications of Bourdieu's approach can be found in Yates (394) and in Moore, who adds the notion that space is a text that can be read (257). Drawing on Geertz and Ricoeur to develop an interpretive approach to understanding the built environment, Moore's exegesis of the spatial text of Kenya's Marakwet reveals how physical activities in and movement through space reveal its meaning and reinforce gender ideologies. Roderick Lawrence also draws on Bourdieu, as well as Douglas, to interpret a wealth of historical materials describing Australian and English workers' housing estates (218, 219, 221, 222–224). In comparing the historical development of house form and interior spatial organization, Lawrence discovers that the organization of domestic spaces can be explained by an underlying structure of functional attributes and symbolic meanings expressed in binary oppositions (clean/dirty, day/night, public/private). Lawrence is able to explain the changes in house form between the originating and colonial cultures, as well as evolutionary changes within each. In a study of Swiss urban housing he carries out a similar analysis on the historical development of public and private spaces (226).

Also historical in basic approach, but structuralist in Chomsky's sense of a generative grammar, is Henry Glassie's classic *Folk Housing in Middle Virginia* (133). Glassie can account for the variation in dwelling forms, for which he includes a complete survey, by developing a series of recursive rules that focus on the syntax of combining geometries of spaces. His systematic analysis of spatial organization reveals shifts in forms and plan over time that enable him to analyze the underlying structure of symbolic oppositions and changes in values and life styles. His inferences from particular household architectural configurations lead him to conclude that formal geometries rather than environmental or behavioral needs guided design and development of folk housing styles. Glassie's approach has been used by Sutro & Downing, who identify seven categories of syntactic rules responsible for spatial organization in Zapotec villages (133). In a recent ethnography of Irish farm culture, Glassie weaves a complex picture of the use and meaning of the farmhouse, focusing on a rich experiential and interpretive descriptive account; analysis is largely left to the endnotes (133).

A similar focus on the formal properties of spatial configurations can be found in the works of Hillier et al (157, 163, 164). Although not explicitly cognitive or symbolic in its approach, *The Social Logic of Space* addresses the

relationship between built form and social organization, employing methods similar to those of other structuralist approaches reviewed here. Hillier & Hanson offer a descriptive syntax of the built environment but do not postulate an underlying structure that produces built forms; rather, the spatial and social orders "generate" each other. Their method for discovering and describing physical patterns in built forms and settlement plans focuses on oppositions between symmetrical and asymmetrical distributions of space and inclusionary and additive arrangements of space. Built forms not only express but direct and shape social processes concerned with sociability and controlling behavior in host-guest or insider-outsider relations. Whether or not outsiders understand the built environment can determine their degree of access, and form can impede or assist in this process. Further, the configuration of the built environment can also encourage or discourage sociability. Although the only field application of this research is in English housing estates, the authors compare examples of the built environment from nonliterate societies to modern built forms, concluding that differences in social organization and solidarity are expressed in the essential organization of space. In a critique by Leach (228), however, issues are raised about the extent to which any built form can be used to make inferences about social organization in the absence of corroborating facts.

A final area of research that can only be mentioned here is the field of architectural semiotics. Semiotic approaches liken the built environment to a language; the formal characteristics constitute sign systems or codes. While similar to structuralism in their attempt to make implicit meanings explicit, semiotic approaches may seem superficial by comparison because they make little systematic use of culturally elaborated cognitive or symbolic structures to interpret the architectonic code. Although exceptions exist (211), this failure to provide these descriptions may stem from the fact that in many cases the researcher is a member of the culture being analyzed and is able to draw examples selectively to support an argument (42, 43, 91–93, 142) or because, in the case of archaeology, the cultures no longer exist as living communities (294, 338). Eco is the best known semiotician to develop a complete theory and apply it to architectural phenomena. He argues, however, that because architectural elements also have nonlinguistic functions, they may not be analogous to linguistic signs and are more complex and difficult to interpret (91). Although its promise has not been fully realized, this research is important because it focuses attention on the formal characteristics of architectural design as key elements in a system of signification.

Approaches to Metaphor

Anthropological theories of metaphor as applied to the built environment are best represented by the work of James Fernandez (109), who argues for the

primacy of metaphor as a cultural expression. It is through metaphors that humans argue over the appropriateness of rules, plans, and world views and thus create order in the universe (109:vii). Fernandez is particularly concerned with the use of metaphor to construct "identities through argument of images and the play of tropes" (109:ix), that is, cultural identities are negotiated through the interplay of contrasting and/or similar metaphors in language and built environment. Metaphors allow one to move from the abstract and inchoate to the concrete, ostensive, and easily graspable.

Fernandez has developed his version of metaphor theory to decode and understand the meaning expressed by the built and natural environment. His well-known work *Fang Architectonics* (107) begins with a study of the Fang and how their culture is represented in space. His monograph is an elaborate and detailed exegesis that links cosmology, myth, social structure, and village architecture through cultural meaning systems. In his work, he develops his notion of quality space composed of axes of continuum between bipolar oppositions of meaning and demonstrates how metaphor is both interpretive and strategic.

Fernandez's later work on built form, spatial relations, and meaning further develops his ideas in a comparative study that asks (108:31) "what is the culture's 'architectonic', that is, how is architecture evocative?" Humans predicate space upon themselves and obtain qualities that they, in turn, project upon space. These predications and projections transform spaces into place. He demonstrates how these metaphors of space and culture work by comparing the centrifugal forest of the Fang, the centripetal treeless environment of the Zulu, and the constructed space of the coastal villages of the Mina.

In a more recent essay Fernandez (110) explores the presentation of place in the regional literature of Spain. He identifies a metaphorical way of speaking about a place as being transformed into a set of attitudes and practices taken towards a place and its inhabitants. According to Fernandez, "We come to understand a place in those terms and consequently develop feelings of solidarity or divisiveness toward that place and its peoples. Metaphor becomes transformed into metonym" (110:31)—that is, a poetic way of speaking about a place becomes transformed into a part of that place.

Theories of metaphor have been used by a number of anthropologists to explore architecture and the built environment as a symbolically encoded cultural meaning system. The most complete example of its application traces the metaphoric symbolism of architect-built houses and village structures from their cosmological and social structural to their bodily meanings (32). The built environment for the Batammaliban represents every facet of personal, social, and cultural life, and is isomorphic with life itself. Metaphor in this cultural example provides a means for ordering experience, and architecture is a metaphor writ large. It is almost a meta-communication, so polyvalent is it in Blier's analysis.

A similar but less complete example of the metaphoric power of architecture links architectural form to social structure (254); for the Cuna, traditional architecture expresses in metaphoric progression the structural replication of all Cuna political and domestic social structure arrayed in multiple, serial, and rank orders. The study traces the building of a syncretic congress meeting house and the decision to build a traditional one after the new one is inaugurated. Moore interplays the metaphoric importance of the existence and placement of the king-posts, yet the congress house itself represents new symbols and modern ideas not expressed by the traditional house.

Marcel Griaule's (147, 148) work on the Dogon is an earlier exploration of how the built environment is metaphorically expressive of basic cultural myth and cosmology. He describes how territorial organization represents the form of the seed, a central symbol in Dogon mythology. Village structure, on the other hand, is anthropomorphic, as are the house and the arrangement of living areas within the house. According to Griaule, "the plan of the house . . . represents a man lying on his right side and procreating" (147:97). Thus the same pattern, repeated in house form, village structure, and territorial organization, links in ever-expanding scale cultural ideas of procreation, gestation, and germination.

A number of anthropologists also draw upon elements of metaphor analysis in order to link myth and cosmology with the human body. Some combine structuralist interpretations of house form and culture with the metaphor of the human body (38, 175, 354), studies not unlike the elaborated example of Blier (32). Others use the metaphor of the body to show cross-cultural correspondence between temple architecture and the outline of the human body (181), focus on body alignment in space as having religious and cosmological importance (28), and examine the ideological nature of architecture both as a cosmological and body metaphor (263).

Another group of anthropologists have developed a metaphorical correspondence between the human body and the landscape. Although these studies do not explicitly address the built environment, they explore the body as isomorphic with the landscape, where the landscape provides a metaphor that is an expressive, evocative device transmitting memory, morality, and emotion (25, 260). Other anthropologists explore body-landscape correspondence in which the combined metaphor of the landscape-body is understood as a symbolic message about basic cultural concepts. The metaphor of the landscape is used to understand the body, and conversely, the body is used to understand the landscape (26, 366).

The use of metaphor in symbolic analysis of the built environment is one of the most powerful and successful approaches to date. It merges the strength of cultural meanings and interpretation with concrete architecture. The built form thus becomes a vehicle for expressing and communicating cultural meaning—that is, a meaning system in itself that is interpreted within the

context of isomorphic meanings of body, personhood, and social structure. The approach appeals to designers who think and create metaphorically, so that in metaphor theory the imagination of the creator and the imaginations of the viewer (or cultural participant) and anthropologist are analytically brought together.

Theories of Ritual

Theories focusing on ritual emphasize the importance of the built environment to ritual efficacy and how the built environment acquires meaning through ritual performances. Ritual practices were held by Durkheim and Mauss to enact and reaffirm the social structure by renewing social ties and reiterating normative and symbolic meanings. Because rituals occur in space, the spatial dimension acquires meaning through its association with symbols. Rather than simply expressing these structures, however, the ritual view of the meaning of the built environment is dynamic, interactive, and performative.

The most developed anthropological theory of ritual is that of Victor Turner, who expands the concept of liminality adapted from Van Gennep's theory of the rites of passage (362). The liminal stage, initially conceived as a spatial metaphor from limen or threshold, identifies the critical transition stage in a universal theory of rituals marking status changes. Victor Turner develops liminality as an indeterminant and ambiguous stage in ritual processes, rich with multivocal ritual symbols that link physical elements to emotional states by condensing, unifying, and polarizing meanings (362). Both temporary and permanent features of the built environment act as critical symbolic elements during ritual performances by providing setting and markers for the participants' collective transcendence of ordinary reality and passage into communitas, a temporary collective state of total unity (363, 364).

Turner's argument is best illustrated in the analysis of pilgrimages and the collective passage of pilgrims to the shrine center where they participate in heightened communion with one another (254, 364). While linear path becomes a liminal space, the shrine itself becomes a key ritual symbol standing for and evoking deeply felt sentiments among the pilgrims, who experience collective transcendence. Sometimes the sensation of unity through communitas may be so intense that participants feel they are merging with their social and physical environment, losing the sense of the individual bounded self (64, 216, 339, 365). In a critique of structuralist approaches to the built environment, Doxtater argues that Turner's ritual-process view provides a superior mode of understanding the nondiscursive meanings of architectural spaces (77).

A number of studies emphasize how performative aspects of ritual and social drama imbue elements of the built environment with social and

symbolic significance, some becoming metaphors embodying complex mean-ings. Artists' performances in a New York park transform neutral spaces into meaningful places by creating "territories" that last long after the performance is over (158). The built environment may act as a key ritual symbol providing a marker for and a concrete manifestation of symbolic relations activated during ritual performances (62, 368). When the sensation of unity achieved through communitas is based on ritually inverting the social structure and creating anti-structure in an urban public celebration, the street may act as a lasting mnemonic of this relationship (67, 215). In an historical study of the structure-anti-structure tensions embodied in a 19th century Philadelphia workingmen's parade, Susan Davis argues that the street acts as a theater of contested space where different interest groups express themselves in public celebratory performances, compete for legitimacy, and negotiate relations of power (69).

Ritual performances may also be viewed as the principal mechanism by which meaning in the built environment is activated (175) or as the key to investing domestic spaces with meaning and transforming their meaning (280, 303). Saile argues that pueblo house-building ceremonies are necessary to convert the inert materials of construction into a home, a living place (334, 335). Prussin (298) likewise argues that it is the repetitive rebuilding of the nomadic shelter each time the group moves that renews the connectedness of the builders to their cosmology and their society. Other studies have focused on how ritual activities can create or recreate community boundaries (50).

The application of ritual analysis to the built environment explores the mechanisms by which powerful meanings connected with physical forms are created and activated. While some of these interpretations build on a structur-alist base, they emphasize how prescribed symbolic activity, by acting out complex meanings, infuses both animate and inanimate features of culture with meaning. Indeed, without ritual activity, many built forms and spatial phenomena are seen by their users as unable to take their rightful place and play their proper role in cultural life.

Phenomenological Perspectives

The application of phenomenological approaches to the study of meaning in the built environment emphasizes the importance of multiple subjective sen-sory experiences that link physical features with personal identity. This research has been primarily developed outside anthropology (204, 314, 343, 344, 345, 360, 23, 48). Perhaps the best known anthropological work in this area is Miles Richardson's continuing research on Latin America. While his first studies focused on the built environment and housing as direct material expressions of the culture of Cartago, Costa Rica, later investigations employ the work of Goffman to analyze the city as a kind of urban theater and to

discuss the contrasting roles of plaza and market (319). In Richardson's perspective, space is the experience of being-in-the-world—that is, the existential or phenomenological reality of the place: its smell, feel, color, etc. He uses ethnographic description to conclude that the experience of being-in-the-plaza is about the Costa Rican concept of "cultura," the appropriate and right behavior, which contrasts with "vivo," the experience of being-in-the-market, which denotes smart, quick, and clever behavior (317). For Richardson, the essential way spatial realities are experienced communicates the basic dynamics of culture (318).

Conclusion

To date, symbolic theories constitute the most developed avenues of systematic investigation of the built environment in anthropology. In addressing the issue of meaning, these approaches range from models of the built environment as simple representations of the social order or integrated features of complex symbolic structures to metaphors of the cosmos and critical elements in ritual performances. These directions explored by symbolic theories continue to provide many suggestions for future research on the interactions of culture with the built environment, an area that has not yet been fully explored. Perhaps the most powerful contribution deriving from this research is that of Bourdieu and followers, who attempt to unite their studies of meaning with a concern with action; they set the stage for the theoretical focus on the processes and products of cultural production and reproduction.

SOME PSYCHOLOGIES

A somewhat loose collection of what might be called "psychological" interpretations of human interactions with the built environment have focused on concepts of the self, spatial dimensions of nonverbal behavior, and cognition and language. Although much of the work is tangential to the mainstream of anthropological studies, and has largely been explored by psychologists, some issues have interested anthropologists. These approaches tend to emphasize individual rather than collective levels of analysis and focus largely on mental processes and mechanisms. In examining concepts of the self in relation to the built environment several broadly psychoanalytic and developmental approaches have explored the meaning of forms. Psychocultural approaches, developed primarily by environmental psychologists, have integrated the concept of culture into explorations of the spatial dimensions of human behavior and human interactions with the built environment. Cognitive and linguistic approaches consider the built environment in terms of systems of knowledge and understanding.

Psychosymbolic Approaches

According to Freud (122), symbols are inherently sexual and are used for the disguised representation of latent thoughts. Many symbols are habitually or almost habitually employed to express the same thing, though symbols may also derive their meaning from private memories and employ idiosyncratic referents. Some early work in this area focuses on cross-cultural differences in how sexual tensions and anxieties have influence on, or find expression in, the built environment (198, 379). Recent uses of Freudian theory have shifted to symbolic interpretations of built forms in particular cultures. Stefania Pandolfo's (277) analysis of the spatial relations of a map uses Freudian symbolic interpretation of space to understand the mapmaker's intent. Robert Paul (278), although he does not use a strictly Freudian approach, draws upon psycholoanalytic theory in his study of the Sherpa temple as a reflection of the inner psyche, in this case the inner life of the Buddhist world.

Jungian psychology emphasizes universal symbols of the collective unconscious (185), archetypes and primordial images (184), and psychological types (186). Jung's notion of the archetype defines a concentration of psychic energy made manifest in time and space. The best known application of this perspective to the built environment is found in Cooper's (58) classic exploration of the house as a fundamental symbol, as well as protector, of the self. In her analysis, houses take on the personae of their inhabitants while, at the same time, linking them to their primordial collective past. The expression of a universal collective unconscious in the built environment is also addressed by Eliade (97, 98), who uses "archetype" to mean paradigm or model. Eliade argues that the built forms in nonliterate societies are models of sacred space, representing the cosmological center of the world, achieving unification through the central pole or *axis mundi* (98).

In *The Non-Human Environment,* Harold Searles (346) offers a psychoanalytic theory of human development that includes the spatial environment as integral to the psychological concept of the self. He emphasizes how the infant responds to and introjects the environment. Erik Erikson, on the other hand, views symbols as expressions of interpsychic developmental processes. In *Childhood and Society* (101), he presents case histories of how children playing with blocks structure the space in relation to their genital modes. Boys construct high structures with downfalls, and girls construct static interiors and enclosed spaces suggesting the interpenetration of the biological, cultural, and psychological aspects of development expressed in a spatial symbolism.

Psychocultural Approaches

Psychocultural theories of spatial relations include the study of spatial perception and orientation as genetic/cultural traits. Cross-cultural variation in the

susceptibility to geometric optical illusions, first observed in the early 1900s by W. H. R. Rivers, was tested in a major comparative study by a multi-disciplinary team of anthropologists and psychologists (348, 349). The researchers argued that the perception of space stems from learning conditioned by different ecological and cultural environments. The finding that Westerners, more often than non-Westerners, were susceptible to certain optical illusions was explained as a result of their living in a more rectangularly shaped, "carpentered" world (348). Other areas of investigation have focused on cross-cultural differences in perceiving pictorial depth (174, 179). These and related issues of cross-cultural differences in spatial perception have been pursued primarily outside anthropology (see reviews in 72, 288).

Other approaches to the issue of spatial perception look to basic human needs and learning processes. Irving Hallowell (154) argues that spatial schema are basic to human orientation and that spatial orientation constitutes a universal psychological need. In describing Ojibwa knowledge of the environment, both cosmic and physical, Hallowell claims that cultural and environmental processes condition the socialization process. E. T. Hall (153), on the other hand, argues that spatial perception and orientation are an "out of awareness" context, basic to mental health, and cites distortions of spatial perception and the concept of self among schizophrenics. His example is the schizophrenic who thinks that his body boundaries are the same as the room's—a breakdown in the spatial experience of self.

PROXEMICS   Hall's best-known work on the influence of culture on spatial perception and behavior is in the field of proxemics, the study of people's use of space as an aspect of culture (152). Hall postulates that humans may have an innate distancing mechanism, modified by culture, that helps to regulate contact in social situations. Conceptualized as a bubble surrounding each individual, personal space varies in size according to the type of social relationships and situation. Hall proposes four general kinds of personal space ranging from intimate (which permits very close contact) to public. Because these spatial aspects of behavior are tacit, actors usually become aware of the boundaries only when they are violated, often in culture contact situations. Appropriate spatial variations in social relations are learned as a feature of culture, and patterns vary by culture. Hall argues that cultural expressions of personal space are found in the built environment and in semi-fixed feature space, such as furniture, window coverings, temporary partitions, etc. Ultimately, the spatial dimension of behavior has communicative features: "Space speaks" (150). Hall suggests that people manipulate spatial behavior as a form of nonverbal communication, an idea also developed by Goffman (see below).

Despite its potential, proxemic research in anthropology has been limited (151, 372, 373). It has been more significantly explored, much of it in

cross-cultural, subcultural, and class-differentiated settings, by environmental psychologists (see reviews in 3, 4). Psychologists have found empirical evidence both for and against Hall's notion of culturally conditioned patterns in personal space (3).

SPATIAL DIMENSIONS OF BEHAVIOR   A number of psychologists, and some anthropologists, have been concerned with a triad of interrelated issues: reactions to density and crowding, privacy and territoriality, and their manifestations across cultures. The studies explore how the built environment may both enable and constrain certain types of behaviors. Reacting to inferences about a human "behavioral sink" from early crowding experiments with laboratory rats, Anderson (17) and Draper (78), among others (9, 152, 307), argued that culture enables human societies to survive high densities. People of certain cultures may even seek high-density settings. In doing so, they develop elaborate rules and practices that ostensibly reduce density-related stresses. As a result of such insights, environmental psychologists have formalized the role of culture, giving it equal footing with the environment and psychological processes (9).

Psychologists have broadly defined privacy as "selective control of access to the self or to one's group" (7, 10). Such boundary maintenance may or may not be supported by the built environment and/or props. Focusing on the lack of privacy among the Mehinacu, Gregor (145) observes that flimsy house construction, typical of many nonliterate societies, creates tensions about public exposure from which people must periodically escape (324); one way is through institutionalized periodic seclusion (144). Gregor suggests that in a society where people expect not to have privacy, the construction of solid housing or the separation of residences would increase suspicions and hostility (144).

In a cross-cultural study, Altman (8) concludes that expression of a desire for privacy varies greatly. In fact, he finds privacy is achieved more often through rules regulating interpersonal behavior rather than by direct manipulation of the environment. Although behaviors regulating access are found in every culture, the value of securing privacy by structuring the environment or social relations is not the same everywhere, nor have all societies managed to develop mechanisms for securing desired levels of privacy (255). As Howell & Tentokali (172) discover in a comparison of domestic relations in Greece, Japan, and the United States, the concept of privacy used in the psychological literature implies a locus of control resting with the individual; as a Western concept it may have only limited application in accounting for behavior in other cultures. Perhaps of more interest to anthropologists is the current exploration of the meaning of privacy as a cultural construct of Western society (56).

Although a number of anthropologists have employed the concept of

territoriality to describe and analyze the relations between cultures (especially hunter-gatherers) and the natural environment (51, 90, 136, 229), only a few ethnographies have explored its utility in relation to the built environment (168, 353). This may be due to the variety of ways territoriality is defined. Some, for example, emphasize control over an area, while others stress organizational, effective, or symbolic connections with a place (see 44, 95, 96). When territoriality is expressed in the environment through a hierarchy of recognized spaces or symbolic markers, behavior may be regulated and control enhanced (266). An exploration of housing in Upper Volta (37) suggests that surveillance within compounds is enhanced and behavior automatically regulated by the careful configuration of dwelling forms.

DRAMATURGICAL APPROACH   Erving Goffman has probably made the best theoretical use of the concept of territoriality in interpersonal relations in his dramaturgical approaches to understanding the self. Goffman identifies qualities of territoriality in spaces, situations, and in the self (138), and forcefully demonstrates how all three combine in actors' presentations and representations aimed at convincing others of who they are. The dramatic performance becomes more than just a metaphor in his conceptualization of front stage/ back stage, where acting and preparing for acting contrast; as settings these areas become major factors in explaining differences in social behavior (137). Goffman's work has been successfully incorporated by numerous anthropologists. For example, Gregor demonstrates in his Mehinacu study how, lacking privacy, people become masters of information control and stagecraft (146). Goffman has been criticized for his almost exclusive focus on the microlevel of individual behavior and his neglect of macrolevel connections (130).

ENVIRONMENTAL PSYCHOLOGY REVISITED   Some environmental psychologists have adopted a transactional perspective that shifts emphasis from psychological mechanisms and behavior to contextual issues and meaning (376). The transactional approach takes a holistic view of the changing relations among psychological and environmental factors; the principal unit of analysis is the "person in environment" (13). A cross-cultural comparison of the home reveals how the linkage of psychological and physical features serves expressive ends and aids in the regulation of behavior through the dialectical oppositions of identity/community and openness/closedness (11).

Transactional approaches have also influenced traditional psychological concepts such as territoriality. Recent reformulations such as "place attachment" draw on some of the phenomenological work linking identity to place and shift the focus of attention to context and meaning. An alternative concept, "appropriation of space," has also been used by some European

researchers. This Marx-inspired term emphasizes the actualization of self and identity in the taking of control of a particular place (202).

In general, environmental psychological approaches have become increasingly aware of the cultural dimensions affecting the interaction of human behavior with the physical environment. Although still largely focused on individual behavior, recent formulations examine more closely the influence on behavior of shared ideas, values, and meanings.

Ethnosemantic Approaches

Ethnosemantic approaches employ techniques from cognitive psychology and linguistics to understand the structure of cultural knowledge of the physical environment. A good portion of the anthropological literature in this area has considered aspects of the natural environment in terms of classification and orientation (57). Although there has been interest outside of anthropology in cognitive aspects of the built environment (42, 43, 243, 256), little has been done within. This is somewhat surprising since one of the earliest discussions in the field, a paper by Whorf, focused on Hopi architectural terms (380). Linguistic categories are extensively used in some ethnographies to describe built forms and explore their meanings (234, 241, 337), and, of course, structuralist interpretations have consistently attended to language (267, 354).

Frake (119) describes the rules of etiquette for entering a Yakan house, which require attention to verbal and nonverbal cues in relation to parts of the house and categories of social relationships. Pinxten (289) combines ethnosemantics and natural philosophy to explore Navajo knowledge of the physical environment. He develops his own methodology, called "universal frames of reference" (UFOR), for systematically identifying a variety of spatial dimensions in linguistic terminology. Pinxten's main contribution consists of insights into cross-cultural communication problems in educational settings involving spatial and math concepts.

Conclusion

In spite of occasional forays into psychological treatments of human interactions with the built environment, anthropological interest has been mild. Some of the early anthropological inquiries into perception and language have not been pursued by later researchers, nor has the development of proxemic research been fully explored. It is encouraging to note, however, that while psychologists, and in particular environmental psychologists, have been more involved in examining the spatial aspects of human behavior, some of their theoretical interests incorporate concepts of culture, context, and meaning. These recent developments may stimulate more anthropologists to join in the exploration of behavior and meaning in relation to the built environment.

SOCIAL PRODUCTION OF BUILT FORM

Theories of the social production of built form focus on the social, political, and economic forces that produce the built environment, and conversely, the impact of the socially produced built environment on social action. The basic question addressed by this literature is what social processes give rise to built form? Specifically, how have the history and evolution of our designed world resulted in some kinds of built forms and not others? The emphasis is primarily on urban phenomena and institutional forces, and the changing historical and sociocultural contexts within which built form exists. Most important works have come from geography (Marxist and cultural), sociology (urban and social theory), political economy, and social history. This research has been important in breaking down conceptual boundaries between traditional disciplinary approaches to the built environment.

Dominant concepts in the field include notions of social production and reproduction rather than culture. Particularly useful is the concept of secondary reproduction—that is, the reproduction of the social and economic order in such a way as to ensure either its continued existence as a definite social formation or its propitious transformation. Culture is usually referred to in terms of cultural plurality and/or culture as a category, or in terms of ethnicity as a socially relevant category.

Here we trace various theoretical approaches including 1. classical studies of urban redevelopment and resettlement; 2. social history; 3. analyses of the political economy of space expressed in urban planning and colonial settlement patterns; 4. structuration studies that relate social structural patterns of power and space with the social actions of individuals; and 5. integrative studies and future directions.

Studies of Urban Redevelopment and Resettlement

Although social production theory in the social sciences did not emerge until the 1970s, a tradition of city planning and housing studies in sociology and anthropology formed the early empirical basis for its development. These studies were generated out of a concern for the massive destruction of neighborhoods and communities caused by urban renewal projects of the 1950s and 1960s, and by the social problems and pathologies of new town planning. During the 1950s and 1960s a handful of sociologists and anthropologists, including Lisa Peattie (281), Herbert Gans (124, 125), Peter Marris (247), William Mangin (246), and Michael Young and R. Wilmott (395), worked as members of interdisciplinary architecture and urban planning teams that produced classic studies of the social and cultural impact of community relocation and resettlement.

David Epstein's *Brasilia, Plan and Reality: a Study of Planned and*

Spontaneous Settlement (100) best represents the theoretical work in this area. Epstein's analysis of squatter settlements in Brasilia as an expression of the existing underclass created by structural inequalities in Brazilian society challenges the individual-agency arguments of previous squatter housing studies. All these studies show housing and planning to be politically charged processes and argue that squatter housing, urban renewal, urban redevelopment, and new town planning have little to do with the needs and desires of users or the actions of individual architects and planners. These works foreshadow studies of the social production of built form because they emphasize social, economic, and political forces that contribute to restructuring and/or creating these communities. More contemporary anthropological works (47, 182, 235, 236, 238, 285, 286, 313) draw upon this tradition of community studies of ethnicity, class, and urban space to explain sources of social interaction and conflict as well as the physical form of urban neighborhoods.

The anthropological and sociological literature that can be identified with the beginnings of this perspective draw upon empirical studies of urban redevelopment and renewal in which the individual residents of local communities and their social and physical needs are subjected to macrolevel planning and decision-making that in turn destroy the local community and in many cases the fabric of social life. These studies do not necessarily discuss the social production of built form but demonstrate how the power and influence of external sociopolitical and administrative processes determine the design and planning of local housing and neighborhoods.

Social History

According to Anthony D. King, the major proponent of the social history of built forms, "buildings, indeed, the entire built environment, are essentially social and cultural products. Buildings result from social needs and accommodate a variety of functions—economic, social, political, religious and cultural. Their size, appearance, location and form are governed not simply by physical factors (climate, materials or topography) but by a society's ideas, its forms of economic and social organization, its distribution of resources and authority, its activities and the beliefs and values which prevail at any one period of time" (192:1). King (192) goes on to note that as society changes new buildings emerge and others become obsolete. Society produces buildings that maintain and/or reinforce its social forms.

King's seminal *Buildings and Society: Essays on the Social Development of the Built Environment* (192) analyzes built form through the social history of particular building types, such as the asylum (342), hospital (115), prison (359), Hindu temple (232), apartment house (156), vacation house (192), restaurant (356), and office building (80). Drawing upon plans, diagrams, and drawings, as well as photographs and observations of existing buildings, the

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contributors reconstruct the social history of these institutions as they evolve within specific sociocultural contexts and express particular ideological positions within a historical period.

Particular kinds of places and building types have also been the focus of many social historical analyses written as critiques or clarifications of the meaning of the current physical form. These include a social history of housing in America (389), a history of the politics of park design (63), a sociopolitical history of the city square (203), a history of women's colleges (171), and an architectural history of the French hotel (70). Each traces the evolution of physical form in relation to sociohistorical periods and ideological meanings. Other studies have emphasized the historical development of institutional patterns and their design implications for the control and limitation of human behavior. These include studies of children's institutional settings (320), New Deal architecture (66, 127), and a feminist critique of American housing (162, 163).

Within anthropology, ethnohistorical and sociohistorical studies have dominated the literature. The recent work of Carol Jopling (183) documents the social history of housing in Puerto Rico; Ruth Behar's (29) history of house form and changing social relations in a Spanish village, Margaret Rodman's (325) study of residential mobility in Vanuatu, and Donna Gabaccia's (123) study of housing of Italian immigrants in Sicily and New York represent anthropological works that trace the evolution of physical form in relation to culture. Deborah Winslow's (386) study of the political geography of Sinhalese Buddhist deities and her reanalysis of this spatial patterning based on a revised understanding of Sri Lankan history (387) illustrate how different concepts of cultural history transform the analysis of the relationships among physical form, spatial distribution, and political and cultural systems.

Another set of historical studies published in 1979 in the *Radical History Review* broadens the analysis of the social development of built form by examining how spatial organization contributes to the power of some groups over others, and "how space itself functions as an object of social struggle" (15:5). The contributors of this special issue, theoretically influenced by Marxist geographers, focus on how particular geographic arrangements support social relations of different modes of production and the historical process of spatial transformation. Particularly noteworthy are studies on the struggle over recreational space in Worcester parks (328), the relationship of the automobile to the reorganization of rural American space (176), the changing use of space in charity hospitals (330), and the American department store (30).

Michael Foucault's (116–18, 391) approach to the history of spatial relations and architecture also explores the relationship of power and space, but

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from the perspective of architecture as a political "technology" much like other disciplinary technologies that provide a new set of procedures for joining knowledge and power. The aim of such technologies is to create a "docile body that may be subjected, used, transformed and improved" (117:198). The control of space through enclosure and the organization of individuals in space are ways that this occurs.

In *Discipline and Punish: The Birth of the Prison,* Foucault uses the model of Jeremy Bentham's 1787 plan for the panopticon to represent an architectural mechanism of control in its ideal form. The panopticon was designed as an arrangement of cell-like spaces, each of which could be seen only by the supervisor and without the knowledge of the individual being observed. The inmate must behave as if under surveillance at all times, thus becoming his/her own guardian. The panopticon brings together hierarchical spatial ordering and the control of the individual body in one effective architectural diagram. In his synthesis of space, power and knowledge, Foucault gives other examples of what he calls a "structural" organization of space serving disciplinary ends, such as the military hospital at Rochefort, and factories, hospitals, and planned towns such as Richelieu.

Foucault was interested more in the space than in the walls or "architecture" of an institution. For him, architecture exists to "insure a certain allocation of people in space, a *canalization* of their circulation" (118). Foucault comments in an interview with Rabinow that "Space is fundamental in any form of communal life; space is fundamental in any exercise of power" (Foucault, quoted in 300:252). In other words, architecture is analyzed as a political technology that links the issues of government—that is, control and power over individuals through spatial *canalization* of everyday life. In some specific cases, architecture actually reproduces social relations, as in the plan of a military camp; but Foucault argues that this expression of military hierarchy is an exception. He thus successfully illustrates how architecture as an institution contributes to the maintenance of power of one group over another and functions as a mechanism for coding their reciprocal relationships at a level that includes the movement of the body in space as well as its surveillance.

While historical studies of social production of built form vary from straightforward accounts of the emergence or decline of a particular institution or design to analyses of the forces of production, they introduce a necessary diachronic perspective. They critically analyze not only the evolution and "production" of the form, but also the impact of designed form both on individual behavior and on power and social relations. Most studies of social history, however, do not link the history of the built form with the theoretical working out of the mechanisms of political and social control that are addressed by Foucault and by researchers interested more centrally in the political economy of space.

The Political Economy of Space

Studies of the political economy of space analyze how class, gender, race, and culture relations are reproduced in the built environment. The object of study moves from the nature of the relationship between social form and physical form to how these "physical surroundings" are produced in the first place. Research focuses on urban and colonial planning as tangible evidence of the emergence of a global system of production (193, 194) and of the impact of capital accumulation (195) on culture-specific (or class-specific) built form.

The study of the emergence of a global system of production with culture-specific forms has best been worked out by King in the arena of colonialism (190, 193, 196, 197). According to King (196) the architecture of colonialism provides insights into the developmental processes of the modern world system. Much of the contemporary global urban system is contained in, symbolized by, and integrated with a variety of building and urban forms introduced as part of Spanish, Portuguese, British, French, Dutch, and American colonialism. In this sense, the built environment of colonialism functions as both a product and a producer; it helps to define new spaces, create work, represent changing social structures, and maintain new economic, social, political, and cultural practices. In his review article, King (196) evaluates some of the many new contributions that trace the evolution of colonial building types (106, 177, 316) and concludes that there is tremendous potential for the exploration of issues of culture relations in the social production of built form.

Other studies of colonial cities address the role of the Latin American city in controlling the populace (369) through the centralization and design of plazas. Abu-Lughod (1) suggests that in order to understand the built form of the Arab colonial city one needs to know the development of the built environment and the cultural "software" that has developed with its particular mode of production. Jon Lang (212) approaches the architectural style and planning of Indian cities as typologies of colonial policies and ideological change. Lewandowski (233) approaches the colonial city as a symbolic system signifying political domination, while John Western's (377, 378) studies of South Africa illustrate how political and racial domination are spatially expressed. Douglas Goodfriend (139), on the other hand, describes how Patrick Geddes's culturally sensitive town planning in India enhanced local identity.

The most important anthropological work on colonial urban planning is that of Paul Rabinow (299, 301, 302), who discusses modern French colonial planning as a laboratory for the political effectiveness of new, large-scale planning concepts (299). Rabinow links the growth of modern forms of political power with the evolution of aesthetic theories and shows how the

colonialists sought to use architecture and city planning to demonstrate the cultural superiority of the French, both to the indigenous populations and to the French themselves. His larger concern, however, is with the "emergence of modern urbanism" (299:267) as a turning point in the evolution of aesthetic theories, social science, modern forms of political power, and techniques for relating these forms of knowledge (299:276). Following Foucault, he focuses on the ordering of space implemented through urban planning as a way to understand "the historically variable links between spatial relations, aesthetics, social science, economics and politics" (299:267).

In his discussion of Nantes, Rabinow (299) notes an evolution of planning in which there is no longer a direct relationship between the operation of political power and its spatial representation. In fact, in Nantes not the state but individual capitalists are responsible for planning space. Economy and society begin to set the guidelines for urban development; commercial flow, rather than governmental power, regulates the use of space thereafter.

Rabinow's discussion of colonial planning in Morocco under the leadership of Hubert Lyautey, head of the Protectorat in Morocco from 1912 to 1925 and a "modern French hero," analyzes France's first comprehensive experiments in urban planning (301, 302). For Lyautey, the problem of social hierarchy, which he linked with colonial reform and control, revolved around three issues: "the identification of an elite, the problem of form, and the valorization of social difference" (301:282). Lyautey's solution was to create a new society by finding French agents who could direct the modernization of the Moroccan nobility. The form of this program was to build *villes nouvelles,* modern French settlements, next to but separate from Morocco's existing cities. In this way urban planning and design would produce an environment that maintained the social hierarchy and provided "a constant social and moral stage to the French" (301:286). These "new cities" were to be distinguished from unhealthy and unplanned European cities; they were to represent modern French norms based on science and art, while at the same time reorganizing power relations among social groups. In Lyautey's view "social transformation could only be achieved through large-scale planning, in which city planning played a central role" (301:288). Rabinow's research on historical French planning and colonial urban planning is the basis of his recent book, *French Modern,* in which he explores the relationships among space, society, power, and knowledge identified by Foucault and traces the development of French modernism as expressed in urban planning and the reorganization of space for urban life.

Urban planning as a mode of social reproduction important to the dominant classes' political, economic, and social control has been the focus of political-economy-of-space studies in cultural and political geography (103, 143). In the early 1970s city-forming processes were linked to the larger historical

movement of industrial capital (52, 159). Harvey emphasizes the physical form of the city as an expression of this distribution of power. His analyses focus on the reproduction of class relations in space allocation through urban planning (159, 160). Harvey's early work (159) portrays individuals as essentially passive agents acting out class roles. In his more recent work, places are understood as a set of complex meanings derived from various classes and often conflicting group histories. His ambition is "to progress toward a definitive Marxian interpretation of the urban process under capitalism" (160:xi).

Manuel Castells (52) argues that architecture and planning serve unacknowledged ideological ends in reproducing a structure of sociopolitical organization that itself lies at the root of urban problems. But Castells (53) adds the critical dimension of social resistance and conflict in determining urban organization and form. Rather than perceiving an urban form as given, and planning as the sole agent of social control, Castells's historical and contemporary studies document the role of social movements and local people in determining the allocation, quality, and control of neighborhood space. According to Castells:

> Space is not, contrary to what others may say, a reflection of society but one of society's fundamental material dimensions. . . . Therefore spatial forms . . . will be produced by human action, as are all other objects, and will express and perform the interests of the dominant class according to a given mode of production and to a specific mode of development. . . . At the same time, spatial forms will also be marked by resistance from exploited classes, oppressed subjects, and abused women. . . . Finally from time to time social movements will arise, challenging the meaning of a spatial structure and therefore attempting new functions and new forms (54:312).

In Castells work, the local population is seen as having a role through social movements that resist the control of the dominant classes and planning elite. The agency of the individual actor, however, is not worked out, nor are the details of how spatial structures influence human behavior and, conversely, how behavior influences the experience, utilization, and allocation of space.

Within anthropology, studies touching upon issues of power, conflict, and social movements include a study of planning politics in Barcelona (249), an examination of the rebuilding of an Andean town destroyed by an earthquake (272), and a critique of the planning of Ciudad Guyana (282). Holston's (169) critique of the design and plan for implementation of Brasilia as a created symbol intended to transform Brazilian society and be an instrument for social change is the most recent example of a critical ethnography that explores the unintended processes of social and urban planning. These researchers differentiate the architects', the governments', and the residents' intentions and reactions to a planned city's design.

Another fruitful area for the study of the social production of built form draws upon work on the colonial city and analyses of urban planning with relation to self-built housing in Third World cities. These studies include both architects' calls for community action to provide low-cost housing through incorporating residents' labor in its production (361) and critiques of this position. The critiques analyze the political economy of the Third World (323) and the role of housing as a symbolic scheme for dealing with political and economic inequality rather than as a method for restructuring the social inequities (48, 89, 322, 370).

Political economy studies focus on space as both product of material conditions and mechanism of sociopolitical control. While most studies are critiques of urban and colonial planning and emphasize how space is an active agent in controlling local populations, Castells, and in some ways Harvey, have focused on the significance of social movements in resisting planning and spatial allocation control. Rabinow, and to some extent Holston and McDonogh, incorporate the knowledge and aesthetic bases of planning, as well as the actions and ideology of the planners, into a comprehensive analysis of how spatial forms are produced.

Structuration

Anthony Gidden's (128–130) theory of structuration argues that space must be incorporated into social theory, not as an environment, but as integral to the occurrence of social behavior. Any pattern of interaction occurs in space and time. The significance of spatial elements for social analysis is represented by the concept of "locale" (129:206). In Gidden's model the individual elements of the interaction transform the social system at the level of social action as the individual behaviors and movements actually make-up the social world. The importance of this theoretical innovation is that social action at the level of the individual (microanalysis) is successfully linked to the level of social structure and system (macroanalysis) through human agency, and social practice becomes the basis for social structural change.

For Giddens, social reproduction is a process based on the performance of everyday activities and behaviors. These practices are learned through socialization, during which time the rules of appropriate behavior become incorporated as part of an individual's taken-for-granted life. Socialization continues throughout adulthood as a person enters into new activities and settings. In this sense, then, socialization and social reproduction become one another through the reciprocal shaping of the individual and society. This process, which he calls structuration, is expressed both in social structural properties and in routine daily practices.

Pred (291), like Giddens and Bourdieu, is concerned with inserting human agency into discussions of history and place. In his reanalysis of Braudel's

(40, 41) concept of *longue duree* he uses the basic tenants of structuration to link the material culture of Braudel to the concept of social structure. He argues that the duration of social hierarchies depended "upon an uninterrupted dialectic between practice itself and the social reproduction of rules and power relations, and upon the parallel emergence of a socially produced 'spatial structure' " (291:254).

Pred (292, 293) also applies Giddens's ideas to the study of the transformation of the southern Swedish landscape 1780–1850. Since place is a human product, "it always involves an appropriation and transformation of space and nature that is inseparable from the reproduction and transformation of society in time and space" (292:337). Changes in local practice, the utilization of fields, the dialectics of individual daily and life paths, and institutional projects are shown to have transformed Swedish social structure (293).

Duncan (84) adds Geertz's notion of ideology to Giddens's concept of structuration in order to understand the authority of multiple landscape texts of the city of Kandy, Sri Lanka. Robben (321), who also draws upon structuration theory and Bourdieu, argues that people are unaware of the practices closest to their cultural being. "Spatial structure itself is hegemonic," but its appropriation and social definition in domestic practice are not (321:2). In his example of the Brazilian house, the relationship between personal use and meaning is articulated with the broader social system. Pader (276) also is concerned within the relationship of the broader social structural system to individual behaviors that both create and respond to that system. In these studies integration of both the individual and social levels of the relationship of space and society is achieved through the application of structuration theory to studies of the built environment.

Giddens, Pred, Bourdieu, and Foucault consciously work out the interdependencies of social structure (often expressed in power and authority) and human behavior and action. Each of these theorists also clarifies otherwise vague notions of social reproduction by identifying how social relations are reproduced in daily life and ordinary activities. These approaches have generated a number of new studies of the built environment (276, 301, 302, 321) and most certainly will stimulate more. However, these approaches have privileged the historical study of the built environment, particularly sociohistorical studies of social institutions, spatial structure, and designed form, and—with some exceptions (85, 301, 302, 321)—have not integrated the insights of symbolic and psychological studies. This final section on social production therefore focuses on works that bring together social practice and other new theoretical approaches.

Integrative Approaches and New Directions

Studies within the area of the social production of built form have been combined with other theoretical approaches that suggest new directions for

research and theory. The classic study *Everything in its Place: Social Order and Land Use in America* (287) not only presents the social structure of land use, specifically the different perceptions of home owners and apartment renters in America, but also elaborates the symbolic significance of this system in the everyday discourse about renting and buying property in Houston and Philadelphia. *The City in Cultural Context* (2) deals with "city form as a signifying system that has symbolic meaning which is conveyed to city dwellers and rural visitors, and is absorbed by and acted upon by them" (2:284); while Murray Edelman (94) is concerned with the legitimizing function of specific architectural features as symbolic markers of class and social status in public and private buildings.

The interdisciplinary volume of Low & Chambers (240) presents a broad range of approaches to the social production of built form; it attempts to define the field as combining, or at least considering, diverse points of view and definitions of culture. The special issue of *Architecture and Behavior* (237) on the cultural aspects of design includes four case studies (181, 216, 276, 285) that draw upon historical, social, and symbolic approaches to study the built environment. Low's study of the plaza (239) also integrates historical, political economy, and symbolic analyses of the evolution of two Costa Rican plazas in order to explain their contemporary meanings and user behavior. The ongoing study of Toronto cooperative housing by Margaret Rodman and Matt Cooper has generated a series of articles that explore the social construction of urban space through the history of the building and occupancy of a handicapped-accessible housing cooperative (327) and combine use-value theory with an understanding of the social, cultural, and personal dimension of the uses of space (59). Mark Leone (230) brings together a social use-value and aesthetic perspective in his study of landscape architecture in the Chesapeake region of Maryland. These integrative approaches include a basic concern with the broader social forces of built environment production and social reproduction, but expand this understanding to include other aspects of built form function and meaning.

CONCLUSION

Social and cultural studies of human interactions with the built environment in anthropology have certainly grown significantly within the last decade and are likely to receive new and more intense attention in the years to come. Although we could not cover here all the important related areas of investigation, we sought to portray the emergence of a coherent body of work around some central topics. We found theoretical development and empirical work across these areas uneven, but we note progress in some major research areas.

The most promising new direction for anthropologists lies in the area of social production theories. These approaches seek to place their understand-

ing of built forms within the larger context of society's institutions and its history. As we continue to conduct more research in contemporary urban settings, or as the "traditional" cultures we once studied become increasingly incorporated into the global political economy, we cannot ignore the complex forces and large-scale institutional forms that penetrate from every angle. Buildings constitute substantial investments for any society, and in many societies their usefulness outlives the original builder. Because they are often able to span more than one generation, built forms become important repositories of cultural information. The conditions of their original construction, and each successive layer of renovation, are integral parts of the cultures that create them. Further, King, Castells, and Harvey have expanded the political economy vocabulary to include space as a dominant component, and have developed global systems theory such that building analyses must consider these macroeconomic and global forces as well. As an object of study, the building becomes a point of spatial articulation for the intersection of multiple forces of economy, society, and culture.

Much research in social production has focused primarily on theoretical development, or, when it has focused on empirical details, deals with them at an abstract level. Perhaps the most exciting work within this broad category is that of Bourdieu, Foucault, and Giddens; and numerous anthropologists have begun to apply these approaches in the study of traditional and changing cultures. The contributions of these three theorists, however, cannot be overemphasized. By clearly reintegrating a spatial as well as a temporal dimension into social theory, they have provided a means by which to integrate the analysis of the built environment, its role, and its meaning in society. Further, they have reduced many of the conceptual obstacles confronting researchers in this field.

Buildings, especially dwellings, serve human needs as well as being the focal point of personal and social identities in the cultures we study. How people fulfill housing needs with built forms is still somewhat unclear. The processes by which decisions are made to build, remodel, or move are neither well documented nor understood in most of the societies where anthropologists have worked. Further, the meaning of the built environment as revealed through its metaphorical connections and ritual practices constitutes an important but still incompletely explored dimension. These two areas of investigation, seemingly unencumbered by a strong structuralist bias, suggest fruitful ways of examining the meaning of the built environment. None of these approaches, however, is perfectly adequate on its own. The analysis and interpretation of building decisions cannot be understood apart from social and economic institutional forces that continuously influence actors, nor can the interpretation of symbolic meaning be divorced from these forces or history. We believe that continued research in the areas of social organization

and symbolism is essential, but their ultimate utility may rest on providing a base of support or a new integrative framework for better theoretical development in the area of social production.

Whether these approaches to the built environment stand on their own or are used to provide a firmer foundation for the growing research areas of social production theory, anthropologists would do well to examine more carefully some of the ways architectural researchers have documented and described built forms. Their attention to detail through techniques such as axonometric drawing, in addition to photography and traditional drawings of plan and elevation, provide anthropologists some exciting new ways to view, recall, and analyze the built environment in the cultures we study. And, finally, exploring the theories focusing on the physical environment found in studies of metaphor or the new examinations of designed architectural forms and urban plans provides a fruitful starting place for collaboration between anthropologists and design professionals by bringing together mutual concerns with aesthetics, form, and production.

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