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"If we are to make use of the diversity of human resources which we possess as a nation, we must allow all voices to be heard in determining our eventual outcomes. This holds for recreational resources as much as for any others" - Martin M. Chemers and Irwin Altman

Use and Perception of the Environment: Cultural and Developmental Processes

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ABSTRACT: This paper presents a "social systems" orientation for integrating the diverse aspects of environment, culture, and individual behavior. It suggests that a wide range of variables, including the physical environment, cultural and social processes, environmental perceptions and cognitions, behavior, and products of behavior, are connected in a complex, interacting system.

Attention is paid to cultural factors that affect the way in which the environment is perceived, used, and modified. A broad variety of topics are touched upon, including ecological factors that affect the functional adaptation of a culture to its environment, how cultural world views shape and are shaped by that adaptation, and how environmentally oriented behavior processes like privacy regulation, territoriality, and personal space operate in this milieu.

The authors stress the need for scientists to provide useful information for environmental practitioners, be they architects, urban planners, or the Forest Service. Finally, discussion is given to the role that cultural diversity in the United States must play in our environmental planning for the future.

ONE OF THE defining features of the study of environmental behavior is its eclecticism of approach and the diversity of its sources of contribution. Geographers, architects, planners, psychologists, sociologists, anthropologists, and others have made and will continue to make contributions to our understanding of this subject. While such diversity may, at times, engender confusion, it is a vibrant and healthy aspect of this multifaceted discipline. Any student of the environment will quickly be struck by the complexity of the phenomenon he seeks to investigate. The very complexity of the subject demands a similarly complex system of study. In this paper, we will point to the diversity of elements in environmental behavior and the intricacy of their actions with and upon one another. Out of this complexity we hope to discern some consistent patterns that point to directions for future research and contemporary application.

A MODEL FOR THE STUDY OF CULTURE AND ENVIRONMENT

Recently we were invited to prepare a chapter on cultural aspects of man-environment relationships for a new *Handbook of Cross-Cultural Psychology*. That chapter was intended to be 35 to 50 pages long, but eventually ran to well over 100 pages, even though we made no attempt to provide an exhaustive review of the area. While we cannot share all of that information in the present paper, some of the insights we gained are especially relevant to the concerns of this symposium.

The study of cultural variables in environment and behavior relationships affords the investigator a special vantage point. While cultural differences and similarities are interesting and useful in their own right, they also serve as cues which help us to focus on especial-

ly relevant phenomena and to probe our assumptions. Many anthropologists agree that the relationship of a society to its environment is the first and most important challenge to a culture. The way in which a culture answers that challenge often determines the overall style of the culture, with ramifications in every aspect of psychological and social adaption. The last statement is not meant to imply that these effects travel in only one direction, i.e., environmental determinism. A culture's reaction to its physical environment will in turn affect that environment. To conceptualize this complex, interactive set of relationships, we propose an initial model to handle environment, and behavior relationships. It is not a formal theory, but only a framework of relevant variables and their approximate relationships, but it serves to organize our thinking about this problem.

In general, we adopt a "social systems" orientation, which implies several things. First, it suggests that several classes of variables relate to the issue of culture and environment, such as

those in the inner ring of Figure 1: physical environment, culture, environmental orientations and representations, environmental behaviors and processes, and outcomes—products of behavior. The *physical environment* refers to features of the natural and climate, terrain and geographic features, flora and fauna. The *cultural/social environment* refers to all aspects of culture such as socialization processes, norms, customs, values. *Environmental orientations and representation* refer to how people classify the environment—the perceptual and cognitive beliefs and differentiations they make about environments. *Environmental behavior and processes* include how people use the environment in the course of social relationships. *Outcomes/products* of behavior include the results of people's actions, such as the built environment of homes, communities, and cities, and modifications of the natural environment such as farms, dams, and climate changes.

The outer ring of Figure 1 contains extensions of the inner ring; the outer-ring variables are

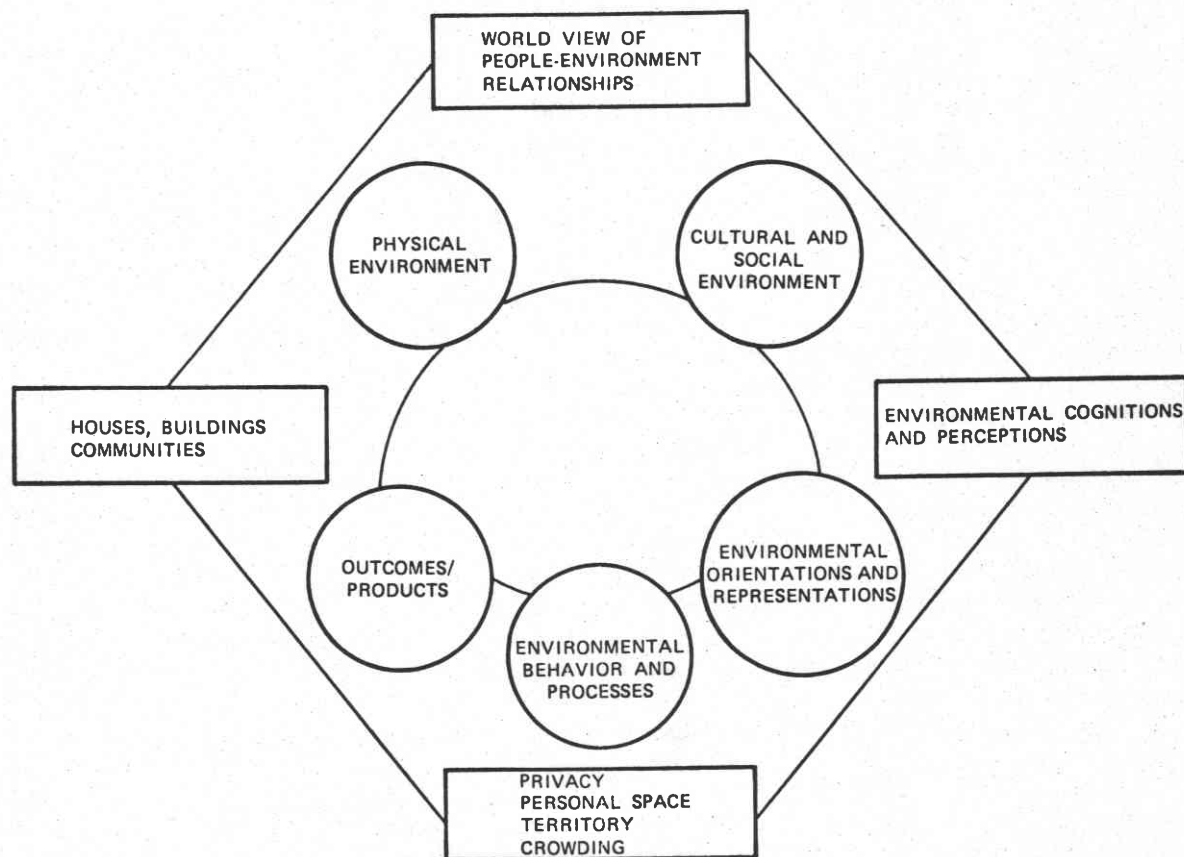


Figure 1.—A framework of culture-environment relationships.

assumed to result from the action of various combinations of inner-ring variables. Thus, physical environment, culture etc., can cumulate to affect differences in *world views* or general approaches to the physical environment. For example, several writers have contrasted philosophical and value orientations to the environment by different cultures, which derive from a complex set of variables. Another result of the operation of various combinations of inner-ring variables concerns *cognitions and perceptions about environments* in different cultures. Still another topic concerns ways in which privacy, territory, personal space, and *crowding* occur across cultures. In addition, cultures differ in *environmental products* — homes, cities, and communities — which result from complex combinations of inner- and outer-ring variables.

Another feature of a social systems approach is that simple linear cause-effect relationships are not always clearly discernible, since every variable can theoretically serve in an independent or dependent role. For example, it is often implied that the physical environment is primarily an independent variable and affects culture or other variables in a one-way, linear fashion. While it is true that environmental factors such as terrain, climate, and temperature may play an important role, it is also the case that the reverse can occur, e.g., cultural practices, establishment of cities, etc., can alter the environment drastically. So it is with almost any part of the figure, resulting in multiple directions of causation. By presenting variables in a circular format, and without arrows of directionality, we wish to suggest that antecedents and consequents can occur almost anywhere. This does not rule out tracking specific relationships between variables; that is quite necessary. But, in formulating general principles it is easy to forget that a specific directional relationship is not the universe of all

A related feature of a systems orientation is that interventions in any part can reverberate throughout the system. Thus, cultural factors can affect any other set of variables, and vice versa. Also, any factor on the circle may be an accumulation of effects from other variables. Thus, environmental behaviors and processes may be a cumulative result of perceptions and cognitions, cultural factors, environmental factors, and outcomes of earlier behaviors.

While we cannot thoroughly discuss all research for the whole model, we can provide a conceptual smorgasbord of ideas which bear directly or indirectly on questions relating to the design of recreational environments. These ideas will, we hope, point toward important areas for consideration.

WORLD VIEWS

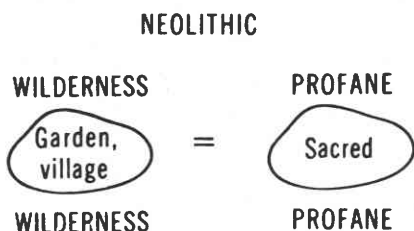
While our conceptual approach implies that one might usefully begin with any of the categories of Figure 1, an especially appropriate point of departure is *world views of the environment*. Throughout recorded history and earlier, people have been concerned with their relationship to the environment, sometimes viewing it as hostile, sometimes as nurturant, sometimes seeing it themselves as part of the environment, and sometimes believing themselves to be separate from and often above nature. These views of nature have been part and parcel of various cultures, woven directly into the fabric of the social structure, determining and being determined by the cultures' perception of and reaction to nature.

The anthropologist Kluckhohn (1953) noted that cultures can be characterized in terms of whether they see people as subjugated to nature, part of nature, or over nature, dominating the environment. Quite clearly, this basic orientation will affect the way a culture approaches its physical environment, and the ways in which members of the culture play as well as work in that environment.

Tuan (1971, 1974), a geographer and fellow participant in this symposium, has noted that people often have conflicting attitudes toward nature that exist side by side. One aspect of this phenomenon is that people often simultaneously wonder about and fear the powerful environment. A farmer might love the earth that nurtures and supports him, while at the same time fearing the powerful elements that jeopardize his well being. Tuan (1971) also pointed to the idea that at different periods in history and in different cultures people have held positive or negative attitudes toward the *wilderness*, or nature, and the city, or totally man-made part of the environment. Figure 2, (adapted from Tuan, 1971) illustrates six different sets of attitudes.

Figure 2.—Historical views of the environment (from Tuan 1971).

1. Edenic ideal



HISTORICAL EXAMPLES

- a. Eden and wilderness
- b. Monastery and wilderness
- c. The New England town and wilderness
- d. The American seminary or college and wilderness
- e. American utopian communities
(First half of 19th century)

2. Urban revolution and cosmic ideal

WILDERNESS (profane)

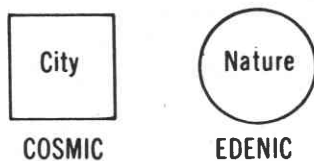


WILDERNESS (profane)

UTOPIA

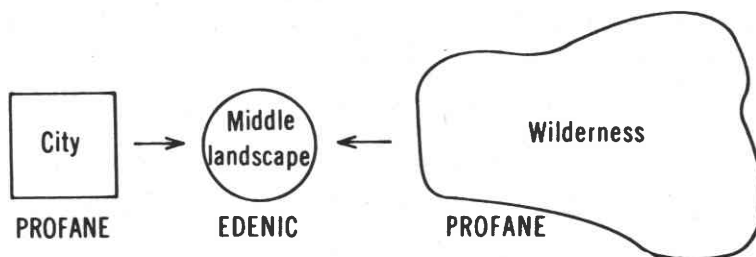
- a. Plato's Republic
- b. New Jerusalem

3. The two juxtaposed ideals

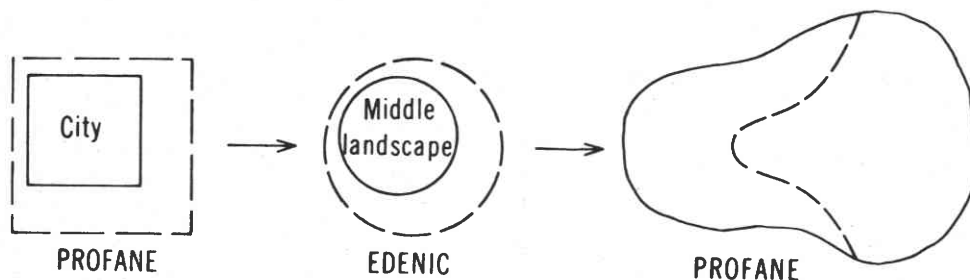


- | | | |
|-------------|---|--------------------------------|
| PASTORAL | { | a. Alexandrian Greece |
| (bucolic) | | b. Augustan Rome |
| GARDEN | { | c. T'ang-Sung China |
| COUNTRYSIDE | | d. Renaissance Europe |
| | | e. 18th - 19th century England |

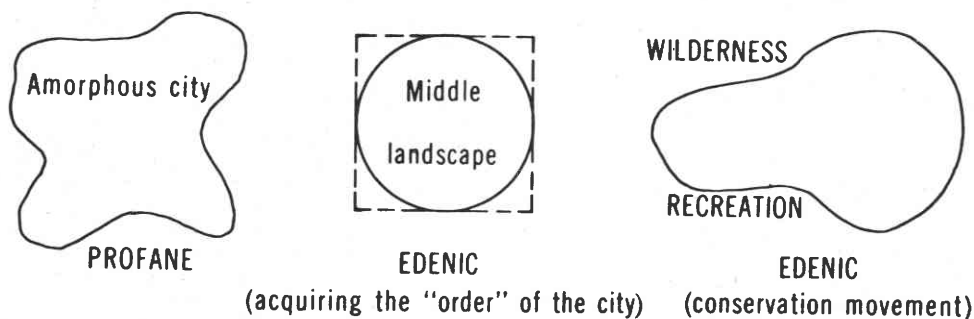
4. The ideal of the "Middle Landscape" (Jeffersonian ideal: late 18th to mid-19th century)



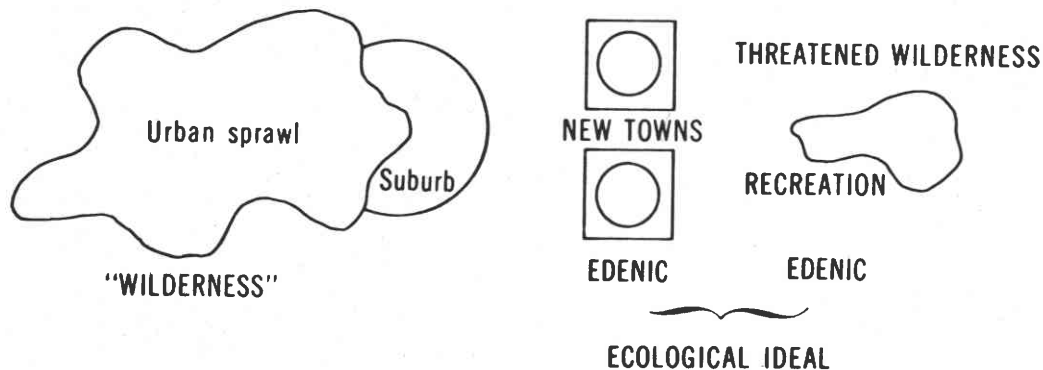
The "Middle landscape" of yeoman farmers is seen as threatened by the city on the one side and by wilderness on the other. In fact this was a time when both the city and the middle landscape were expanding at the expense of wilderness, thus:



5. Late nineteenth-century values



6. Middle and late twentieth-century values



Reproduced by permission from the Association of American Geographers Commission on College Geography Resource Paper Series, #10, Tuan, *Man and Nature*, 1971.

In these different views the city is sometimes seen as sacred, and the dangerous, foreboding wilderness profane. In recent years, with our awakening concern for the preservation of the wilderness, the values are almost completely reversed. It is quite obvious that the world view a culture holds helps to determine which parts of the environment will be seen as attractive for work and play, how children will be socialized in their perception of the environment, and even what information and knowledge about the environment will be extant.

In Peter Gould's (1974) voluminous studies of geographical preferences, English secondary-school students held a generally negative impression of large urban areas, while Zambian college students were strongly attracted to urban areas in their country. For those concerned with recreation planning, specifically the placement and distribution of recreation facilities, such cultural preference patterns are of tremendous importance.

ENVIRONMENTAL PERCEPTION

How people perceive the environment is especially relevant to the discussion of children and their development. How does environmental perception develop? Must we be concerned with cultural differences in perception? Must we be concerned with cultural differences in perception when we design for people? These questions are of central importance both to the researcher who wished to generate knowledge about environmental behavior and to the practitioner who hopes to apply that knowledge.

The perception of the environment is somewhat unlike the perception of other objects. As Ittelson (1973) pointed out, the environment surrounds the perceiver. It is multimodal and extremely complex, and even its perception requires action and movement. To these we can add another unique aspect. The accurate perception of the environment has considerable significance to the organism's survival, both immediately and in terms of evolutionary process. Kaplan (1973) for example, has argued that our ability to form rapid and highly articulated cognitive representations (also our susceptibility to error) is a result of long-term evolutionary adaptation, when a survival premium was placed on speed and accuracy of reaction.

Other research indicates that children form utilitarian perceptions of the environment at an early age. Several researchers (Hart and Moore 1973; Stea and Blaut 1973; Blaut, McCleary, and Blaut 1970) have demonstrated that the ability to understand and use aerial photographs and map-like representations begins as early as 4 or 5 years of age and appears to be fully developed by about 7 or 8 years. Further, early studies indicated no great differences in this ability across cultural or social class groupings. While these findings are still extremely tentative, they point toward a conclusion that certain cognitive tendencies, determined either biologically or by early socialization, predispose the child toward early and effective environmental perception.

Does this mean that all cultures perceive the environment in the same way? The answer is probably no. While the development of the capacity for environmental perception and learning may be roughly uniform, what is attended to and learned clearly varies across cultures. Here again the notion of world views and preferences is relevant. Those portions of the environment that are seen as attractive and useful will be known and used, while less desirable areas are likely to be ignored.

From several studies of the perception of cities and neighborhoods, many of which involved youthful subjects, some patterns emerge. Several researchers (e.g., Orleans 1971, Ladd 1970, Maurer and Baxter 1972; and others) reported dramatic differences between groups. Orleans (1971), for example, found that Los Angeles Blacks, Whites, and Mexican-Americans differed in the extent and differentiation of their knowledge about the Los Angeles area. Many of these differences can be attributed to differences between groups in their opportunity and need to travel around the area. In the same study, for example, Orleans found patterns of environmental differentiation for Jewish senior citizens to be quite illuminating. These respondents had articulated and knowledgeable perception of two portions of the Los Angeles environment: the neighborhood where they lived, and the San Fernando Valley, where most of their children and grandchildren lived.

The kinds of errors people make in environmental perception are also often attributable to cultural conditioning. In a study of

a Venezuelan city, Appleyard (1970) found that, in drawn maps of the city, people often placed streets or railroad tracks where their experience said these entities should be, not where they actually were.

In a slightly different vein Briggs (1973), using American college students as respondents, found that locations in the direction of an urban center were perceived as more distant than directions away from the city. These effects may be due to actual physical variables such as the relative traffic densities in and away from urban areas, or they may relate to more subjective forces associated with culturally influenced perceptions of urbanized locales, such as those discussed by Tuan (1971).

It is safe to say that, whether cultures use similar perceptual processes or not, the content, categories, and specific features of the environment that are attended to, encoded, and remembered will be strongly influenced by culture, class, and other aspects which are part of social development. Thus, perceptually mediated cultural influences on the attractiveness, accessibility, and knowledge of environmental features should be integrated into our environmental planning. The usefulness of parks, playgrounds, and national forests will certainly be influenced by such factors.

Although perceptual phenomena probably

represent the underpinnings of environmental processes, the individual actually interacts with the environment at the level of behavior. It is through behavior that the individual's perception of the physical environment, influenced by cultural world views and learned perceptual tendencies, is manifested and impacts back on the environment. Privacy regulation is one of the most central and pervasive phenomena of environmental behavior. It has important implications for any type of environmental design, and is an ideal place to look for cultural differences.

PRIVACY REGULATION

Our discussion of privacy-related processes will be keyed around three basic processes: privacy, personal space, and territory. Figure 3, from Altman (1975), presents some relationships between these processes.

Privacy is the central organizing concept, and refers to selective control over access to the self (Altman 1975). Thus, privacy is a process by which people and groups regulate social interaction, so that they sometimes open and sometimes close themselves to one another. We also distinguish between *desired* privacy (or what level of stimulation a person or group

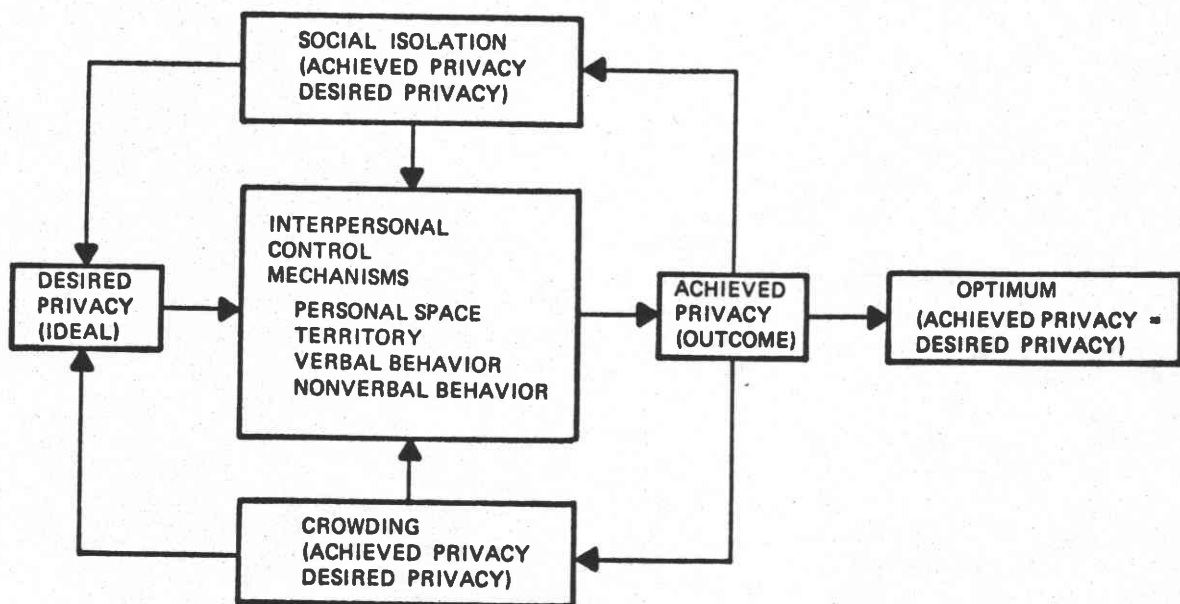


Figure 3.—Overview of relationships between privacy, personal space, territory, and crowding.

would like to have) and *achieved privacy* (the actual level of stimulation perceived). To the extent that achieved and desired privacy match one another we can speak of successful control over interaction. A privacy system is operating poorly when achieved and desired privacy do not match.

The framework also suggests that a series of mechanisms are used to help meet a momentarily desired level of privacy. These mechanisms include *verbal behavior* (telling someone to "keep out" or "come in"), *paraverbal behavior* (voice intonation, tone, interruptions and pauses etc.), *non-verbal behavior* (gestures, body postures, head positions and movements etc.) and *personal space, territorial behavior, and cultural styles* of responding. Emphasis will be placed on the latter behaviors since they bear most closely on environmental issues.

Personal Space refers to the "invisible boundary" surrounding a person or group, intrusion into which produces discomfort (Hall 1966, Sommer 1969, Altman 1975). It is commonly studied in terms of distance and/or angle of orientation between people. *Territorial behavior* refers to ownership and control of environmental areas and objects (Altman 1975). *Cultural styles* include norms, customs, and rules of interaction, such as visiting or not visiting neighbors, rules for using others' property and space, styles of probing others or avoiding intrusion. Thus, privacy is a regulatory process and various behavioral mechanisms operate in the service of a desired level of privacy. These mechanisms can function in different combinations within and between cultures, yielding a complex system of responses. That is, in one situation verbal and personal space behaviors may predominate, whereas in another situation people may rely more on territorial and nonverbal behavior. So it may be that one culture uses one set of mechanisms to regulate privacy and another may rely on a different behavioral mix.

The figure also suggests that privacy regulation may be successful and yield a good match between desired and achieved levels of privacy. Or the system may overshoot and produce more privacy than desired; i.e., a person or group may be more socially isolated than desired. Or the system may undershoot and yield less privacy than desired; i.e., a person may be crowded or intruded upon.

Psychological variables such as crowding,

privacy, etc., have a heavy perceptual component. Thus, our earlier discussion of the impact of cultural variables on perception and cognition applies here as well. Within the framework we emphasize the concepts of *privacy, personal space, and territory*, in the context of cross-cultural processes.

In a sense, the notion of an optimal level of privacy makes the concept of privacy a cultural universal. It is quite probable that all people and groups regulate their accessibility to outsiders. Cultures, of course, vary in the designation of optimal privacy level as well as in the mechanisms used to regulate privacy. For example, Roberts and Gregor (1971) report that in the Mehinacu culture, a small tribal group in Central Brazil, homes are shared by several families, noises and conversations are not blocked by housing structure, dwellings and their occupants are clearly visible to outsiders, and people are clearly seen when entering or leaving the village. In short, there appears to be very little privacy among the Mehinacu. If, however, one looks past the physical mechanisms of privacy regulation to more social mechanisms, another pattern emerges. Certain areas, e.g. the men's building, have specific rules against intrusion. Furthermore, the child-rearing process fosters seclusion, specifying periods when children or young adults live in relative isolation and learn to speak softly, conceal strong emotions, and generally restrict access to the self through social-psychological mechanisms.

Another interesting example comes from the comparison of two Indonesian cultures by Geertz (cited in Westin 1970). In Java, privacy regulation through the use of territory or physical structures is practically nonexistent. People wander freely into and through other people's homes with no more warning than a greeting to announce one's presence. Geertz points out, however, that other control mechanisms are available.

The result is that their defenses are mostly psychological. Relationships within the household are very restrained; people speak softly, hide their feelings, and even in the bosom of a Javanese family, you have the feeling that you are in the public square and must behave with appropriate decorum. Javanese shut people out with a wall of etiquette, emotional restraint, and with a general lack of candor in both speech and behavior.

However, in the neighboring culture of Bali, within extended families, individuals have loose

and open interpersonal relations with high access to one another. These families, however, live in houses surrounded by high stone walls with very limited access, so that only kinsmen or close friends generally enter a person's houseyard.

Thus, while both cultures regulate privacy, they do it with different mechanisms (physical structures vs. interpersonal styles) and in relationship to different people (everyone including members of the immediate family vs. members of the outgroup or non-kinsmen).

Interpersonal and quasiphsical features are combined in the regulatory mechanisms of personal space. The pioneer work by Edward T. Hall (1959) alerted us to the fact that individuals have spatial zones around their persons which they regard as appropriate to different activities. For example, the space from 0 to 18 inches is *intimate* distance and is usually invaded only by intimate or close associates, and not generally in public. *Personal* distance, 1.5 to 4 feet, serves as a transitional distance between intimate and nonintimate activities. *Social* distance, from 4 to 12 feet, is the distance of general public contact. Finally, *public* distance, 12 to 25 feet, is used for formal occasions and for high-status figures.

People feel most comfortable when activities and personal distances are congruent. Thus, cultural differences in the use of space point to areas of possible conflict or concern in intercultural encounters. For example, people from Western and Northern European cultures, especially Germany and England, and their cultural descendants, Americans, maintain wider personal distances than do the so-called "contact cultures" e.g., Arabs, Latin Americans, and Mediterranean peoples. Such differences have important implications for the design of facilities that will be used by people of more than one culture. The distances chosen for interaction might be quite comfortable and natural to the designer, but subtly unnatural for the user.

Several studies have compared the spatial behavior of various ethnic groups in the U.S. (Willis 1966, Baxter 1970). In early studies, it appeared that Blacks, Mexican-Americans, and Whites differed in distances maintained from others. Recent research, however, indicates that social class may be more important than ethnic background, with middle-class youngsters

maintaining greater distances than working-class youngsters (Scherer 1974). Whether culture or class is the crucial variable, the use of personal space is an important variable for consideration by designers. Evidence suggests that it is a learned process, and children demonstrate appropriate mechanisms early in life.

On a more collective level, territoriality is a widely used mechanism of privacy regulation. Altman (1975) discussed three types of territories: primary territory, which an individual or group holds for exclusive use and ownership; secondary territory, involving less central, pervasive and exclusive use; and public territory which is meant to be used by anyone. Cultures vary in the degree to which they acknowledge primary territories, but most societies have certain areas regarded as primary, either for the individual or for groups as a whole. Cultures may also vary in what areas they regard as appropriate for inclusion into the three categories of territory, which in turn may lead to conflict over their use.

Most recreational facilities, for example, are meant by designers to be public territories. We are all familiar, however, with the phenomenon of a street gang or club taking possession of a park or playground and regarding it as their primary territory. Perceptions of territoriality then, are likely to affect the use of certain areas and facilities.

Territory is an important enough regulatory mechanism that certain cultures have codified aspects of territorial usage. For example, Moslem building codes of North Africa prohibited the construction of any new opening in a wall between residences if it gave visual access to a neighbor (Prussin 1974).

Thus, there is a complex pattern by which physical structures, spacing, and psychological factors are combined to derive an optimal level of privacy. If an imbalance occurs between desired and achieved privacy levels, one can expect adjustment to occur throughout the system.

ENVIRONMENTAL OUTCOMES AND PRODUCTS

The psychological and social processes discussed thus far often contribute to environmental outcomes. Environmental outcomes or products refer to what people create in the form

of cities, communities, homes, and other modifications of the natural environment. A systems orientation reminds us that these products, themselves, can have an impact on perceptions, culture, and the environment.

Tuan (1971, 1974) and Rapoport (1969) observed how broad cultural views of nature are associated with the design of cities, communities, and individual dwellings. Cultural distinctions in orientation toward such features as earth and sky, and perceived zones of those features, will influence design. Cultures that value the concept of the center, like the Zuni Indians, or high ground, like the ancient Greeks, will design communities that reflect those values. One such interesting dimension relates to a square versus circular conception of nature. The emphasis on the circular or hoop-like qualities of nature shared by most American Indians is illustrated in a quote from *Black Elk Speaks*, a novel about Indian life.

The sky is round. . . the wind . . . whirls. Birds make their nests in circles, for theirs is the same religion as ours. The sun comes forth and goes down again in a circle. The moon does the same. Even the seasons. . . always come back again to where they were. The life of a man is a circle from childhood to childhood, and so it is in everything where power moves. Our teepees were round like the nests of birds, and these were always set in a circle, the nation's hoop, a nest of many nests, where the great spirit meant for us to hatch our children. (Neihardt, cited in Tuan 1971:24).

Rapoport (1969) showed the compatibility between culture and home and community design. Some cultures emphasize privacy in the traditional sense of reducing stimulation, perhaps because of population density or for other reasons, and this value is often represented in community design. For example, homes in certain Eastern and Middle Eastern countries (Iran, India, Japan) are often surrounded by walls.

It is true that the physical environment, in terms of topography, climate, and building materials, must also be considered. Although adaptive responses to the physical environment are widespread, they are not universal, and cultural factor can play an overriding role. For example, in India, some homes are oriented to the east for religious reasons, yet entrances often face uphill, even on steep hillsides.

The fact that cultural influences do play an important part in the design of communities and homes raises an interesting and important issue: What are the implications where a

cultural group that is going to live, work, and play in the built environment is not responsible for or consulted in the construction of that built environment? That is, of course, the situation for many subcultural minority groups in the United States. The unsatisfactory nature of many urban low-income housing projects is, in part, attributable to this situation. It has been widely conjectured that such high-rise housing projects did not take into account the lifestyles of their predominantly black residents, especially the importance of a traditionally rich street life. Thus, the residents of these buildings, cut off from the street, unable to observe their children at play, unable to monitor or control the access of outsiders to a primary territory, may rightfully feel frustrated and alienated by an uncomfortable and unsatisfying environment.

Recreational environments, which often have man-made component, must deal with these same complex issues. How large should such facilities be? What level of density should be planned for? How much privacy? Should there be a man-made component at all? It is quite likely, for example, that a Teton Sioux Indian and an urban New Yorker might disagree on the utility and aesthetic impact of the man-made portions of Yellowstone National Park with its roads, lodges, and viewing platforms.

CONCLUSION AND IMPLICATIONS

This paper has attempted to show how the physical environment, cultural world views and perceptions, environmental behavior, and environmental outcomes are tied together in a web of reciprocal relationships. What, then, are the broad implications of our theorizing for research and application?

Cross-cultural research on environmental behavior is sparse and disconnected. More research is needed in many areas. Especially fruitful avenues seem to be in the study of environmental perception and especially in developmental processes associated with perceptions. The content and organization of environmental perception and cognition will help to highlight the ways in which different cultures approach the environment.

An examination of cultural differences and

similarities in aspects of privacy regulation will teach us not only a great deal about environment but about social behavior in general. Certainly further studies of preferences for different environments will provide us with some readily applicable information for design and placement of man-made features, as well as leading to a broader understanding of our relationships to our surroundings.

The practitioner in environmental design is in a difficult position. The research evidence on which he would base his actions is limited and often contradictory. He is alerted to the complexity of the problem, but given little information with which to solve it. We believe that our focus on cross-cultural factors does offer some tentative suggestions.

It is not new or unique to say that we should preserve what natural resources we have. However, we must add our voices to those already arguing this cause. With each new piece of research, especially in cultural differences, we find new evidence that supports the positive feature of diversity. The fact that the United States is one of the most culturally heterogeneous nations in the world offers a tremendous challenge, with the potential for tremendous rewards. If we are to make use of the diversity of human resources which we possess as a nation, we must allow all voices to be heard in determining our eventual outcomes. This holds for recreational resources as much as for any others. It would be a grave error to build a network of recreational facilities which appeal to only part of the population, while in the process destroying the possibility for future accommodation.

Research should be directed at discovering how the complex set of social, cultural, and individual variables relate to the perception and use of recreational facilities. Only then will we be able to design for all the people, for the present and the future.

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