Part I
Embodied Spaces

Our first section addresses the fundamental role of the human body in the definition and creation of space, and the development of spatial experience and consciousness. Embodied space is presented as a model for understanding the creation of place through the body's spatial orientation and movement, and its action in language. *Proxemics*, Edward T. Hall's study of people's use of space as an aspect of culture, proposes that individuals are surrounded by a bubble of personal space the size of which varies according to social relationship and setting. People use this distancing mechanism to regulate interaction and engage in nonverbal communication. Miles Richardson employs the body as the ground for understanding perceptual processes of "being-in-the-world" in his phenomenological analysis of distinct public spaces of market and plaza in Costa Rica. Combining elements of both to understand the individualized experience of space, Nancy Munn proposes the "mobile spatial field" to account for a culturally defined, corporeal-sensual field extending from the body at each locale, but also moving across locales. She uses this concept to explain how Australian Aborigines individually make detours to avoid encounters with dangerous topographic centers of ancestral power. Finding linguistic analysis no less spatial, Alessandro Duranti investigates the interpenetration of language, body movement, lived space, and distant homelands among Western Samoans living in southern California. His analysis suggests that their use of language and body movement establishes a particular Samoan social and cultural space in a transnational setting.

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Proxemics[1]

Edward T. Hall

Western man has conceptualized space in many ways, ranging from Bogardus' (1933, 1959) social space and Sorokin's (1943) sociocultural space to Lewin's (1948) topologies. Chapple and Coon (1942) and Hallowell (1955) treated distance technically when they described how it is measured in different cultures.[2] Jammer (1960) has dealt with the concepts of space (including their historical underpinnings) in physics. Proxemics,[3] the study of man's perception and use of space, pertains to none of these directly. It is much closer, instead, to the behavioral complex of activities and their derivatives known to the ethologists as territoriality. It deals primarily with out-of-awareness distance-setting,[4] and owes much to the work of Sapir (1927) and Whorf (1956).

Because of my communications bias, the subjects of proxemic research have generally been members of my own culture. Like Bateson (1948), I have learned to depend more on what people do than on what they say in response to a direct question, to pay close attention to that which cannot be consciously manipulated, and to look for patterns rather than content (Hall 1966). However, except in a few exceptional instances, I have never been able to be really certain of the correctness of my own interpretations of observed behavior in other cultures. In interpreting the actions of people in other cultures, the only thing about which I am reasonably certain is my own fleeting responses. Working in a detailed way on the micro-cultural level (Hall 1966:96) and only where it was possible to detect responses on the affective, as well as the behavioral, level has motivated me to concentrate on my own culture as it has been revealed against the contrasting backdrop of other cultures. In this sense, I am in agreement with Lévi-Strauss (1966b) when he speaks of the anthropology of the future as a science in which people study themselves. My approach has been to use myself and others as measuring devices (or "controls," if you like) at those times when we have been subjected to contrasting cultural environments. This last is important, for one can be no more than vaguely aware of one's own culture in the absence of face-to-face encounters with people of other cultures.[5]

I first became aware of my own interest in man's use of space when I was training Americans for service overseas and discovered that the way in which both time and

space were handled constituted a form of communication which was responded to as if it were built into people and, therefore, universally valid. In 1963a, I wrote:

> ...Americans overseas were confronted with a variety of difficulties because of cultural differences in the handling of space. People stood "too close" during conversations, and when the Americans backed away to a comfortable conversational distance, this was taken to mean that Americans were cold, aloof, withdrawn, and disinterested in the people of the country.[6] U.S.A. housewives muttered about "waste-space" in houses in the Middle East. In England, Americans who were used to neighborliness were hurt when they discovered that their neighbors were no more accessible or friendly than other people, and in Latin America, exsuburbanites, accustomed to unfenced yards, found that the high walls there made them feel "shut out." Even in Germany, where so many of my countrymen felt at home, radically different patterns in the use of space led to unexpected tensions.

It was quite obvious that these apparently inconsequential differences in spatial behavior resulted in significant misunderstanding and intensified culture shock, often to the point of illness, for some members of the American overseas colonies. Examination of the very strong and deep responses to spatial cues on the part of overseas Americans highlighted many of the patterns implicit in the United States. These observations directed my thinking to Whorf. As I have stated elsewhere (1966):

> ...only to a handful of people have the implications of Whorf's thinking become apparent. Difficult to grasp, they become somewhat frightening when given careful thought. They strike at the root of the doctrine of "free will," because they indicate that all men are captives of the language they speak.[7]

It is my thesis that the principles laid down by Whorf and his followers in relation to language apply to all culturally patterned behavior, but particularly to those aspects of culture which are most often taken for granted and operate as Sapir (1927) so aptly put it "...in accordance with an elaborate and secret code that is written nowhere, known by none, and understood by all."[8] It is this elaborate and secret code that becomes confused with what is popularly conceived of as phenomenological experience. It has long been believed that experience is what men share and that it is possible to bypass language by referring back to experience in order to reach another human being. This implicit (and often explicit) belief concerning man's relation to experience is based on the assumption that when two human beings are subjected to the same "experience," virtually the same data are being fed to the two nervous systems and the two brains respond similarly. *Proxemic research casts serious doubts on the validity of this assumption, particularly when the cultures are different*. People from different cultures inhabit different sensory worlds (see Hall 1966: chaps. 10, 11). They not only structure spaces differently, but experience it differently, because the sensorium is differently "programmed."[9] There is a selective screening or filtering that admits some types of data while rejecting others. Sometimes this is accomplished by individuals "tuning out" one or more of the senses or a portion of perception. Otherwise, it is accomplished by screening, which is one of the many important functions performed by architecture.

If the spatial experience is different by virtue of different patterning of the senses and selective attention and inattention to specific aspects of the environment, it would follow that *what crowds one people does not necessarily crowd another.* Therefore, there can be no universal index of crowding, no known way of measuring crowding for all cultures. Instead, what one must ask is, "Are the people involved being stressed, and, if so, to what degree, and what senses are involved?" To answer questions such as these requires specialists from many disciplines, including pathology, biochemistry, experimental psychology, and kinesics.[10] The work of Gibson (1950) on perception and of Kilpatrick and others (1961) in transactional psychology have provided useful leads.

In 1953, Trager and I postulated a theory of culture based on a linguistic model.[11] We maintained that with the model we were using, it must be possible ultimately to link major cultural systems (of which there were several) to the physiology of the organism; i.e., that there should be not only a prelinguistic base (Trager 1949) but a precultural base as well. In 1959, I suggested the term "infra-culture" be used to designate those behavioral manifestations "that preceded culture but later became elaborated into culture." It followed from this that it might be helpful in the analysis of a primary cultural system, such as proxemics, to examine its infra-cultural base. A look at the various manifestations of territoriality (and these are many) should help provide both a foundation and a perspective to be used in considering more complex human elaborations of space.

Much can be learned in this regard from the ethologists.[12] It is difficult to consider man with other animals, yet, in the light of what is known of ethology, it may be appropriate to consider man as an organism that has elaborated and specialized his *extensions*[13] to the point where they are rapidly replacing nature. In other words, man has created a new dimension, the cultural dimension, in relations to which he maintains a state of dynamic equilibrium. This process is one in which both man and his environment participate in molding each other. Man is now in the position of creating his own biotope. He is, therefore, in the position of determining *what kind of organism* he will be. This is a frightening thought in view of how little we know about man and his needs. It also means that in a very deep sense, man is creating different types of people in his slums, his mental hospitals, his cities, and his suburbs. What is more, the problems man is facing in trying to create one world are much more complex than was formerly assumed. Within the United States we have discovered that one group's slum is another's sensorily enriched environment (Fried and Gleicher 1961, Gans 1960, Abrams 1965).

Hediger's unique work in zoology and animal behavior is particularly important to proxemics. He has devoted himself to the study of what occurs when men and animals interact in the wild, in zoos, and in circuses as well as in experimental situations. Hediger has demonstrated the very point that anthropologists would hope to make for man, namely that if one is to interact realistically with any organism, it is essential to gain a basic mastery of that organism's communications systems. Hediger is deeply committed to the position that the most common error in interpreting animal behavior is anthropomorphizing or interpreting the animals' communications as though they were human. His studies of the domestication process not only underline the necessity of thoroughly understanding the sensory symbolic world of a species (how it marks its territory, for example, or

the components that go to make up its biotope), but also stress the importance of knowing the specific way in which the species handles distance beyond strictly territorial considerations (Hediger 1950, 1955, 1961). For example, the reduction or elimination of the flight reaction is essential for the survival of an organism in captivity. In addition, it provides us with an operational definition of domestication. Hediger distinguished between contract and non-contract species,[14] and he was the first to describe in operational terms personal and social distances. He has also demonstrated that critical distance is so precise that it can be measured in centimeters.[15]

Schäfer (1956) has written about both "critical space" and "critical situations." While he has stressed the danger of drawing analogies from non-human forms, his descriptions of social and group responses to crowding and his formulation of the concepts of the "critical densities" and "crises" are not only highly suggestive for man but appear to involve processes that embrace an extraordinarily broad spectrum of living substance.

Recent studies of spacing among animals reveal that one of the primary functions of proper spacing is to permit the completion of what Tinbergen (1952, 1958) terms "action chains." Tinbergen has demonstrated that the life of the stickleback and other species is made up of predictable behavioral sequences according to set paradigms. If a sequence is broken or interrupted, it is necessary to start over again from the beginning.[16] Both animals and man, according to Spitz (1964), require, at critical stages in life, specific amounts of space in order to act out the dialogues that lead to the consummation of most of the important acts in life.

The findings of ethologists and animal psychologists suggest that: (*a*) each organism inhabits its own subjective world,[17] which is a function of its perceptual apparatus, and the *arbitrary separation of the organism from that world alters context and in so doing distorts meaning;*[18] and (*b*) the dividing line between the organism's internal and external environment cannot be pinpointed precisely.[19] The organism-biotope relationship can only be understood if it is seen as a delicately balanced series of cybernetic mechanisms in which positive and negative feedback exert subtle but continuous control over life. *That is, the organism and its biotope constitute a single, cohesive system* (within a series of larger systems). To consider one without reference to the other is meaningless.

Two further ethological studies draw attention to the connection between territoriality and population control.[20] Christian's (1960) classic study of the James Island Sika deer advances the thesis that populations are controlled by physiological mechanisms that respond to density. In a summary made at a symposium on crowding, stress, and natural selection (Christian, Flyger, and Davis 1961), it was stated that:

> Mortality evidently resulted from shock following severe metabolic disturbance, probably as a result of prolonged adrenocortical hyperactivity, judging from the histological material. There was no evidence of infection, starvation, or other obvious cause to explain the mass mortality.

Christian's study is only one of a number of similar studies of population collapse[21] due to stress from sensory overload (crowding).[22]

Calhoun's experiments and observations are also noteworthy for their behavioral data.[23] He allowed wild Norways rats, which were amply fed, to breed freely in a quarter-acre pen. Their number stabilized at 150 and never exceeded 200 (Calhoun 1950). With a population of 150, fighting became so disruptive to normal maternal care that only a few of the young survived. The rats did not distribute themselves evenly throughout the pen, but organized into a dozen colonies averaging 12 rats each (apparently the maximum number of rats that can live harmoniously in a natural group).

The disorders of Calhoun's overcrowded rats bear a striking resemblance to those of some contemporary Americans who live in densely packed urban conditions. Although comparative studies of humans are rare, Chombart de Lauwe (1959a, b) has gathered data on French workers' families and has demonstrated a statistical relationship between crowded living conditions and physical and social pathology. In the United States a health survey of Manhattan (Srole et al. 1962) showed that only 18% of a representative sample were free of emotional disorders while 23% were seriously disturbed or incapacitated.

Research Methods and Strategies

In the Foreword to Jammer's book *Concepts of Space*, Einstein has summarized many of the methodological problems in proxemics:

> The eyes of the scientist are directed upon those phenomena which are accessible to observation, upon their appreciation and conceptual formulation. In the attempt to achieve a conceptual formulation of the confusingly immense body of observational data, the scientist makes use of a whole arsenal of concepts which he imbibed practically with his mother's milk; and seldom if ever is he aware of the eternally problematic character of his concepts. He uses this conceptual material, or, speaking more exactly, these conceptual tools of thought, as something obviously, immutably given; something having an objective value of truth which is hardly ever, and in any case not seriously, to be doubted.

In my study of proxemics, one of my objectives has been to examine a small slice of life in the United States – the experience of space – and to learn about some of the things Americans take for granted. My emphasis has not been on either the manifest or even the latent *content* but rather on the structural details, the implicit perceptual elements.

Most individuals, try as they will, can specify few if any of the elements that enter into perception.[24] They can only describe the end product. Thus, the student of proxemics is faced with the problem of developing techniques to isolate and identify the elements of space perception. What he aims to achieve is a sense-data equivalent of the morphophonemic structure of language or the chemist's periodic table of the elements. His data should be verifiable and the elements capable of being combined with predictable results. Where does one look for procedural models when exploring a new field? Descriptive linguistics, faced with similar problems, has provided methods applicable to proxemics.

Since the days of the Sanskrit grammarians, linguists have recognized that *Language is a system* with structure and regularity. All writing systems are abstracted from the building blocks or sounds of the language represented. These are identifiable and finite in number. The way to isolate them is to obtain spoken texts as raw data and then to record the details of speech as precisely as possible, using a notation system that is based on identifiable physiological processes so that any trained observer can make the same transcriptions. In linguistics, the physiological structure points of the system have been worked out. These structure points were *not* known for proxemics when I began may research. It was clear, however, that in the perception of space, something more than the visual system was involved. The questions then became: What other systems? and, How do we know that they have been correctly indentified?

During the early stages of my research, I used a wide range of methods and techniques for identifying the elements of space perception – not just because proxemics appeared to involve many different types of variables, but on the theory that what I learned in one way could be used to check what I learned in other ways. Some of the research techniques, briefly described below, are: observation, experiment, interviews (structured and unstructured), analysis of the English lexicon, and the study of space as it is recreated in literature and in art.

Observation

By observing people over a long period of time as they use and react to space, one can begin to discern definite patterns of proxemics behavior. While photography is only a supplement to other forms of observation – an extension of the visual memory, as it were – it is an absolutely indispensable aid in recording proxemic behavior. It freezes actions and allows the investigator to examine sequences over and over again. The difficulty is to photograph people without intruding or altering their behavior. Practice in using a very small camera (Minox), which I carry with me at all times, has taught me how to photograph unobtrusively, and this has made it possible to use larger cameras as well.[25] Several thousand photographs have thus far been taken of people interacting under natural conditions in the United States, France, England, Italy, Greece, and Switzerland. These photographs have provided data against which visual observations can be checked.

The camera and the photographs it produces are extraordinarily subtle and complex tools (see Collier 1967, Byers 1966, Worth 1966). For proxemics, the camera has served as a record and reminder system and a training aid for students. It has also been very useful in investigating how subjects structure their particular perceptual worlds. One of my assistants, a German, illustrated this point when asked to take an "intimate" photograph followed by a "public" photograph of a female subject. I had expected distortion in the intimate shot and great detail in the public shot. Not at all. The intimate portrait was crisp and clear and the public shot deliberately out of focus " . . . because you aren't really supposed to look at people in public" (or photograph them, either).

In our recent investigations of proxemic behavior of various ethnic groups in the United States, my students and I have discovered that it is essential to use a member of the group we are studying as the photographer. Not only does the photographer

constantly interact with his subjects (Byers 1966), but what he selects to photograph represents culture-bound choice. Photographer subjects have provided valuable insights on a number of points at which the groups involved were at odds. They also have noted serious omissions from photographic texts taken by others (not of their own group). For example, in photographing lower-class Negro, Puerto Rican, and Spanish-American subjects, our goal was to discover the specific ways in which these ethnic groups code and organize their senses in face-to-face encounters. (My experience in intercultural relations had taught me that differences in the proxemic behavior lead to what Goffman [1961] calls "alienation in encounters.") In the beginning, one of my assistants (a German photographer) photographed lower-class American Negro subjects interacting with each other. Later these sub-jects were shown slides and 8 × 10 inch prints of themselves and were asked what was happening in the photographs. They were rarely able to tell us. However, when one of the Negro subjects was given the control of a motorized drive camera and told to push the button whenever *he* saw something happening, he took frame after frame of what I, as a white, middle-class American, considered identical pictures. Interviews with the Negro photographer and the subjects demonstrated that they were acting out and recording a highly structured dialogue in which the cues were more subtle than, and quite different from, those used by the white, middle class population. It would appear that in this particular lower-class Negro group, a great deal of information is communicated by very small movements of the hands and fingers. These movements were almost imperceptible to my students and me.[26]

In addition to direct observation and photographs, another source of data is the unself-conscious comment people make as a result of some breach of spatial eti-quette. Such comments often help identify the structure points in the proxemic system under study. Examples that occur frequently are statements like these:

> I wish he would stop breathing down my neck. I can't stand that!
> Have you noticed how she is always *touching* you? She can't seem to keep her hands to herself.
> He was so close his face was all distorted.

Physical contact between people, breathing on people or directing one's breath away from people, direct eye contact or averting one's gaze, placing one's face so close to another that visual accommodation is not possible, are all examples of the kind of proxemic behavior that may be perfectly correct in one culture and absolutely taboo in another.

Experimental abstract situations

It is possible to learn a good deal about how members of a given culture structure space at various levels of abstraction by setting up simple situations in which they manipulate objects.[27] I used coins and pencils and asked my subjects to arrange them so that they were "close" and "far apart" and "side by side" and "next to each other" and then to tell me whether two objects were "together" or not. Arab subjects were unable or unwilling to make a judgment as to whether two objects were close

together or not *if the surrounding area was not specified*. In other words, Arabs saw the objects *in a context;* Americans saw the objects only *in relation to each other.*

Structured interviews

My wife and I interviewed both American and foreign subjects in depth, following a detailed interview schedule. The shortest interviews took six hours; the longest lasted six months and was still producing data when that phase of the work was terminated. In the course of these studies, it became apparent that, although the answers of different subjects to any particular question might vary, the interview schedule as a whole could teach us much about how the subjects structured and experienced space. Conclusions could be drawn from the way in which the questions were answered and from the difficulties encountered in understanding particular questions.

The protocol for the interviews began with a general question concerning the home and household, and the activities and named areas contained in the house. The home was chosen as a starting point not only because everyone has one, but also because it had been our experience that subjects can usually talk about the concrete features of the home even when they find it difficult or inappropriate to talk about other topics. Once the home picture had been recorded along with drawings and diagrams, the same material was covered in a different way by exploring such topics as privacy, boundaries, the rights of propinquity, and the place of the particular home in its social and geographic setting. Furniture arrangements in home and office provided added data on social relationships, and so did linguistic features such as words or concepts that were difficult to translate. Altogether, some 90 topics were covered.

One of the most valuable features of our protocol was that it was sufficiently culture-bound to cause foreign subjects to raise questions that revealed not only the structures of their own proxemic systems but the taken-for-granted aspects of our system as well. "Where do you go to be alone?" – a normal question for Americans – puzzled and sometimes angered Arabs. Some representative Arab replies are, "Who wants to be alone?" "Where do you go to be crazy?" "Paradise without people is Hell." Trespassing is thought of in the United States as a universally recognizable violation of the mores, yet our interviews failed to turn up anything even approaching this concept among urban Arabs. The actual structure of the interview proved to be a valuable research instrument. The point is both subtle and important. By following a standard protocol, then, we were conducting research simultaneously on two different levels: level A was the manifest content, Answers to Questions; and level B (the more important and basic) was the contrast in structure of two cultural systems, one being used in context to elicit the other. The most valuable sessions turned out to be those in which foreign subjects took issue with our spatial catagories.

One section of our questionnaire dealt with listening behavior[28] and was designed to elicit information on where subjects looked at the person being addressed for feedback. This proved to be one of the most productive sections of our questionnaire. What emerged from interviews with foreign subjects was not a direct answer to the questions but a series of complaints that Americans never listen or complaints

about what Americans communicate by the *way* in which they listen. Arabs said we are ashamed all the time. What made them think so? The fact that we withhold our breath and direct it away from the other person. Latin American subjects complained that Americans never listened or were always breaking off, a conclusion they drew from the fact that our eyes wander. The information that we sought by this line of inquiry concerned the type of perceptual involvement of the two subjects.

Analysis of the lexicon

I have long maintained (Hall and Trager 1953, Hall 1959) that *culture* is basically a communicative process. This process occurs simultaneously on many levels, some of them more explicit than others. Language is one of the explicit levels. Boas (1911) was the first anthropologist to emphasize the relationship between language and culture. He made his point in the simplest, most obvious way by analyzing lexicons of languages. Whorf (1956) went beyond Boas and suggested that language plays a prominent role in molding the perceptual world of a culture. He states,

> We dissect nature along lines laid down by our natural languages. The categories and types that we isolate from the world of phenomena we do not find there ....

Whorf observed that in Hopi, time and space are inextricably bound up in each other; to alter one is to change the other. He says,

> The Hopi thought world has no imaginary space .... In other words, the Hopi cannot, as speakers of Indo-European languages do, "imagine" such a place as Heaven or Hell. Furthermore "hollow" spaces like room, chamber, hall are not really *named* objects but are rather located ....

Sapir's and Whorf's influence, extended far beyond the confines of descriptive linguistics, caused me to review the lexicon of the pocket Oxford Dictionary and to extract from it all the terms having spatial connotations such as: "over," "under," "away from," "together," "next to," "beside," "adjacent," "congruent," "level," "upright." Altogether, some 20% of this dictionary, or approximately 5,000 lexical items, were recorded.[29]

Interpretation of art

Paralleling Whorf's thinking about language, the transactional psychologists have demonstrated that perception is not passive but is learned and in fact highly patterned. It is a true transaction in which the world and the perceiver both participate. A painting or print must therefore conform to the Weltanschauung of the culture to which it is directed and to the perceptual patterns of the artist at the time he is creating. Artists know that perception is a transaction; in fact, they take it for granted.

The artist is both a sensitive observer and a communicator. How well he succeeds depends in part on the degree to which he has been able to analyze and organize perceptual data in ways that are meaningful to his audience. The manner in which

sense impressions are employed by the artist reveals data about both the artist *and* his audience.

Gideon (1962), Dorner (1958), and Grosser (1951) have contributed to the specific understanding of the way European man has developed his perceptual organization through the ages.[30] For example, Grosser comments that the portrait is distinguished from any other kind of painting by a psychological nearness which "... depends directly on the actual interval – the distance in feet and inches between the model and painter." He sets this distance at four to eight feet and notes that it creates the characteristic "quality" of a portrait, "the peculiar sort of communication, almost a conversation, that the person who looks at the picture is able to hold with the person painted there." Grosser's discussion of the difficulties of foreshortening and of the distortions that occur when the painter or perceiver gets too close to his subject closely parallels my subjects' descriptions of their perception of others when they are "too close."

The distinction made by Gibson (1950) between the *visual field* (the image cast on the retina) and the *visual world* (the stable image created in the mind) is essential to the comprehension of the differences in the work of two artists like Hobbema and Rembrandt. Hobbema depicted the visual world perceived in the same way a scene outside a window is perceived, as a summary of hundreds, if not thousands, of visual fields. Rembrandt, in contrast, painted visual fields.[31] In effect, he made static the scene which is generally perceived in an instant.

The principal difficulty in using art as cultural data is to distinguish between the artist's technique (which alone reveals the building blocks of his creation) and his subject matter, which may be designed to be persuasive and is often controversial[32] because tastes in art differ. Despite such complexities, the data are sufficiently rich to warrant any effort that is required.

Analysis of literature

An examination of the writer's sense impressions reveals much about his perceptual world. If a writer refers to vision to build his images it is possible to examine these images to determine what kind of vision he uses. Is it foveal, macular, or peripheral vision? Which of Gibson's numerous ways of seeing perspective does he employ? What is the role of olfaction and touch?

Writers express what readers already know and would have expressed if they had possessed the requisite analytic capability, training and skills. When the writer succeeds, there is a close register between his descriptions and his reader's own sensory pattern, since writers evoke spatial images in the reader. The question I asked myself was: "What clues does the writer provide the reader that enable him to construct a spatial image?" It seemed to me that an analysis of passages that are spatially evocative would be revealing. I asked subjects to mark such passages in a sample of over a hundred representative novels. The first texts used were those which contained spatial images that subjects vividly recalled from past reading. This group of passages, elicited from those who had spontaneously commented on them, ultimately proved to be of the most value.

As in painting, the representation of space in literature changes over time, and appears to reflect rather accurately growing awareness of the nature as well as

the proxemic patterns of the culture. McLuhan (1963) notes, for example, that the first reference to three-dimensional visual perspective in literature occurs in *King Lear*, when Edgar seeks to persuade the blinded Duke of Gloucester that they indeed stand atop the cliffs of Dover. Thoreau's *Walden* is replete with spatial images. Referring to his small cabin and its influence on his conversation, he writes:

> . . . our sentences wanted *room* to unfold and form their columns in the interval. *Individuals*, like nations, *must have* suitable broad and natural *boundaries, even a neutral ground* between them . . . If we are merely loquacious and loud talkers, then we can afford to stand very near together, *cheek to jowl, and feel each other's breath*; but if we speak reservedly and thoughtfully we want to be farther apart, *that all animal heat and moisture* may have a chance to evaporate (italics mine).

Mark Twain was fascinated with spatial imagery and its distortion. He set out to create impossible spatial paradoxes in which the reader "sees" intimate details at incredible distances, or experiences spaces so vast that the mind boggles at comprehending them. Most of Mark Twain's distances are visual and auditory. Kafka, in *The Trial*, emphasizes the body and the role of kinesthetic distance perception. The vitality of St. Exupery's images is in his use of kinesthetic, tactile, olfactory, and auditory perceptions.

Concepts and Measures

Three categories of space

It has proved helpful in proxemic research to be able to refer to the degree to which cultures treat proxemic features as fixed, semi-fixed, or dynamic (Hall 1963a, 1966). In general, walls and territorial boundaries are treated as fixed features. However, territory may be a seasonal affair, as it is with the migrating Bedouin of Syria, and therefore, territory is sometimes classified as semi-fixed or dynamic. Furniture can be either fixed or semi-fixed. Interpersonal distance is usually treated informally[33] and is dynamic for most peoples of North European origin. These distinctions are important in intercultural encounters. If one person treats as moveable that which is considered fixed by someone else, it causes real anxiety. For example, a German subject (an immigrant to the United States), who treated furniture as fixed, had bolted to the floor the chair on which visitors sat in his office. This caused great consternation among American visitors. One of my Chinese subjects informed me that in China a visitor would not dream of adjusting the furniture to conform to his unwritten definition of an interaction distance unless specifically instructed to do so by his host. American students in my classes, who cover a wide spectrum of ethnic, class, and regional cultures within the United States, have been evenly divided between those who adjust the furniture to conform to an informal norm and those who do not.

Sociopetal and sociofugal space

Another type of observation to be made by proxemic fieldworkers is whether the space is organized so that it is conducive to communication between people (socio-*petal*) or whether it is organized to produce solitarity (socio*fugal*) (Osmond 1957). What is sociofugal to one culture or subculture may be sociopetal to another. An Arab colleague has noted, for instance, that his small, paneled recreation room was "sehr-gemüttlich" or "cozy" to German friends but had just the opposite effect on Arabs, who found it oppressive.

The relationship of the spoken language to proxemics

The content of conversation is linked to distance and situation as well as to the relationship of the participants, their emotions, and their activity. Joos (1962) relates linguistic analysis to distance and situation in a manner applicable to a proxemic frame of reference. His five styles – intimate, casual, consultative, formal, and frozen – can be equated roughly with the intimate, personal, social-consultative, and public zones of United States proxemic patterns. The fact that Joos treats language as a *transaction* (introducing feedback) rather than as a one-way process makes his conceptual model especially applicable to proxemics. His work is also relevant in that it introduces the situational dialect (Hall 1960b).[34]

Hockett (1958) has defined communication as any event that triggers another organism. (This definition would include the environment, although it is not clear that Hockett intended this.) Originally, he listed seven design features for language:

1. duality (units or *cenemes* that build up)
2. interchangeability ("A" can play "B's" part, and vice-versa)
3. displacement (in time or space)
4. specialization (the attachment of specific meanings to specific things)
5. arbitrariness (there is no necessary connection between the event and the symbol)
6. productivity (novel forms can be created)
7. cultural transmission (as contrasted with genetic transmission)

Later, Hockett (1960) expanded the list to 13 in an effort to sharpen or clarify his definition of language. In the process he cleared up some problems while creating others. Hockett's concept of the design features represents a breakthrough in our understanding of communication. As a culturally elaborated form of communication, proxemics satisfies all of Hockett's seven original design features, even productivity (the architect or designer striving to create new forms). In general, the evolutionary studies of language as outlined by Hockett and the infra-cultural basis for proxemics seem to parallel each other. There are some points of departure. Displacement in time and space of an incipient but recognizable form occurs with territorial marking at the level of mammals. When ungulates are frightened by a panther they release an olfactory sign from the gland in their hoofs that warns others of their kind traveling the same trail later that there is danger in the bush. By

presenting us with a well-laid-out scheme that compares communication systems across species and genera lines, Hockett not only has provided a series of specific points held up to the mirror of life but also has related them in a particular way. His points should be taken not as absolutes but as positions on a continuum. As an *absolute*, for instance, total feedback does not exist, because the speaker only hears and is aware of *part* of what he is saying. Duality of patterning, the "small arrangements of a relatively very small stock of distinguishable sounds which are in themselves wholly meaningless," would, by the substitution of a single word ("information" for "sounds"), prove to be a characteristic of all life beginning with RNA and DNA and ending with communicative forms that are present but have yet to be technically analyzed. It is with language, then, that we complete the circle, beginning and ending with species other than man.

No known universal distance-setting mechanism

Observations, interviews, analysis of art and literature, all point to the fact that there is *no* fixed distance-sensing mechanism (or mechanisms) in man that is universal for all cultures. One of the complexities of proxemic research is the fact that not only are people unable to describe how they set distances, but each ethnic group sets distances in its own way. In fact, their measuring rods are different. Some of the perceived distances expand and shrink according to circumstances. *Interpersonal distance is a constellation of sensory inputs that is coded in a particular way.* For instance, middle-class American subjects of North European extraction set many of their interpersonal distances visually (Hall 1964a, b, 1966).[35] This is accomplished to some extent by signals received from muscular feedback in the eyes, gauged by the point at which the subject begins to feel cross-eyed or has difficulty focusing, etc. Additional visual references used are the size of the retinal image, perceived detail, and peripheral movement. The visual interaction of Arabs is intense; they are directly and totally involved. The Arab stares; the American does not. The Arab's olfactory sense is actively involved in establishing and maintaining contact. Arabs tend to stay inside the olfactory bubble of their interlocutor, whereas Americans try to stay outside of it.

All the senses are ultimately involved in setting distance and bear the same relation to proxemics as the vocal apparatus (teeth, tongue, hard and soft palate, and vocal cords) does to phonetics. If man is thought of as being in a constant transaction with his environment, sometimes actively, sometimes passively, it can be seen that *selective screening* is as necessary as *patterned stimulation* of the senses. It is no wonder then that one of our subjects, a German professor, found even the solid architecture of early 20th century America unsatisfactory to him because it failed to screen out enough sound when he was working in his study. As a contrast in sensory needs, Fried and Gleicher (1961) and Fried (1963) found that West End Bostonians of Italian descent required great auditory involvement, and it is my interpretation that part of their shock at being relocated away from the Boston West Side to more modern buildings was due to an unfamiliar and uncongenial sensory mix. They felt shut off from people. American middle-class subjects working in Latin America miss *visual* involvement with their neighbors and feel shut out by the adobe walls that make every Latin-American home a private affair. Frenchmen, accustomed to a wide

assortment of pungent odors as they move along city streets, may suffer a form of sensory deprivation in the American urban setting with its uniform acrid smell.

Elsewhere (1963b), I have described a notation system based on eight different dimensions or scales for the senses (1) postural-sex; (2) sociofugal-sociopetal; (3) kinesthetic; (4) touch; (5) retinal; (6) thermal; (7) olfactory; (8) voice loudness. This system enables the fieldworker to focus his attention on specific behavioral segments that will ultimately enable him to distinguish between the behavior of one group and that of another.

> . . . in spite of their *apparent* complexity, cultural systems are so organized that their context can be learned and controlled by all normal members of the group . . . The anthropologist knows that what he is looking for are patterned distinctions that transcend individual differences and are closely integrated into the social matrix in which they occur.

[. . .]

Areas to be Investigated

Research in proxemics underscores what anthropologists know, that what is taken for granted in one culture may not even exist in another. It is therefore impossible to make up a universal list of questions for revealing the structure of proxemic systems. Our experience with the extensive protocol referred to earlier was that it was at best only a culturally biased sounding board. Although great pains had been taken to make the protocol as culture-free as possible, this turned out to be impossible. The following list of problems for proxemic research will also reflect the biases of its originator's culture, not only in its organization but also in its content.

1. How many kinds of distance do people maintain? (It would be useful to know the total range of human behavior in this respect.)
2. How are these distances differentiated?
3. What relationships, activities, and emotions are associated with each distance?
4. In general, what can be classified as fixed feature, semi-fixed feature, and dynamic space?
5. What is sociofugal and what is sociopetal?
6. Boundaries:
    a. How are boundaries conceived?
    b. How permanent are they?
    c. What constitutes a violation of a boundary?
    d. How are boundaries marked?
    e. When and how do you know you are inside a boundary?
7. Is there a hierarchy of spaces from, for example, most intimate and most sacred to most public?
8. Related to both (1) and (7), is there a hierarchy of distances between people? Who is permitted in each, and under what circumstances?
9. Who is permitted to touch, and under what circumstances?

10. Are there taboos against touching, looking, listening, and smelling? To whom do they apply?

11. What screening needs are there? For what senses and which relationships?

12. What is the nature of the sensory involvement for the different relationships in the normal course of everyday life?

13. What specific spatial needs are there?

14. What are the spatial references in the lexicon?

15. Is there a special handling of space between superordinates and subordinates?

NOTES

1   The research reported on in this paper was supported by the National Institute of Mental Health and the Wenner-Gren Foundation for Anthropological Research.

2   Hallowell's introduction to his chapter 9 (Cultural Factors in Spatial Orientation) is particularly relevant to space perception.

3   In the course of the development of proxemics, the work was spoken of as "social space as bio-communication," and "micro-space in interpersonal encounters." These were actually abbreviated technical descriptions in which the proper meanings of the terms of reference were known only to a few specialists. Further, the widespread interest in activities connected with outer space provided an incentive to distinguish between my work and that of the outer-space scientists. I decided to invent a new term that would indicate, in general, what the field was about. Among the terms I considered were human topology, chaology, the study of empty space, oriology, the study of boundaries, chorology, the study of organized space. I finally chose "proxemics" as the most suitable for that audience most likely to encounter the topic in the near future.

4   The following quote (Hall 1963) speaks to the matter of levels of awareness: "Any culture characteristically produces a simultaneous array of patterned behavior on several different levels of awareness. It is therefore important to specify which levels of awareness one is describing . . . .

    "Unlike much of the traditional subject matter of anthropological observation, proxemic patterns, once learned, are maintained largely out of conscious awareness and thus have to be investigated without resort to probing the conscious minds of one's subjects. Direct questioning will yield few if any significant variables, as it will with such topics as kinship and house type. In proxemics one is dealing with phenomena akin to tone of voice, or even stress and pitch in the English language. Since these are built into the language, they are hard for the speaker to consciously manipulate."

    Also see Hall (1959: chap. 4) for a more complete statement concerning levels of awareness relating to change.

5   The problem of self-awareness has been a stumbling-block for psychologists for years. We really do not know by what means the brain interprets the data fed to it by the senses. Recently there has been some progress in solving this problem. The solution appears to hinge on *contrasts* built into the receptors rather than simple stimulation leading to a specific response (McCulloch 1964).

6   One can never be sure initially of the true significance of this sort of behavior. One learns with time to pay attention to casual remarks engendered by the original response. Instead of saying that a particular American was cool, aloof, or distant, an Arab subject remarked: "What's the matter? Does he think I *smell* bad?" In this instance, the reference to olfaction provided an important clue to Arab distance-setting mechanisms.

7 By stressing the importance of Whorf's observations, I do not mean to imply that there is no external reality to be discovered, nor do I think that Whorf believed this. The reality can remain constant, but what different organisms perceive is determined largely by "what they intend to do about it," in the words of a colleague.

8 By "all" one assumes that Sapir meant the members of a given ethnic community.

9 The precise methods can only be surmised by which the young are taught to selectively attend to some things while disregarding others and to favor one sense channel while suppressing another. It is reasonable to assume, however, that culture provides a pattern, among other things, for a rather elaborate and extraordinarily detailed, but less contrived, Skinnerian (1953) reinforcement schedule in which individual reinforcements are of such short duration that they are not ordinarily isolated out of the context in which they occur. The work of Condon (1967) and others has demonstrated the extraordinary degree to which people are capable of responding to each other and coordinating their behavior during conversations. Frame-by-frame examination of movies taken at 24 and 48 frames per second and study of simultaneous electroencephalograms reveals organized, coherent, synchronous behavior that is not normally observable without the aid of high-speed cameras. One can put forth the suggestion, in these terms, that positive and negative reinforcement can and does occur subliminally.

10 The relationship of proxemics to kinesics (Birdwhistell 1952, Hayes 1964, and Condon 1967) has been treated elsewhere (Hall 1963b). Basically, and in the simplest possible terms, proxemics is not primarily concerned with the observation and recording of the details of gestures and body movements. Proxemics deals with architecture, furniture, and the use of space, whereas kinesics, at present, is only indirectly concerned with the setting. Proxemic notation is simpler than that employed in kinesics. Proxemics seeks to determine the how of distance-setting (a question of epistemology). It is important for the proxemicist to know as much as possible about the physiology of the eye, and the many other ways in which man perceives distance.

11 A version of this original series of postulates was published in 1959.

12 Margaret Mead (1961) has also suggested that anthropologists have much to gain from the study of the works of ethologists.

13 The term "extension" summarizes a process in which evolution accelerates when it occurs outside the body (see Hall 1959, 1966).

14 McBride does not entirely agree with Hediger's basic distinction and, instead, holds that there are times when animals may be contact and other times when they may not. A three-way friendly polemic by mail between McBride, Hediger, and me has resolved many of McBride's objections. It now appears that, like dominance in genetics, contact/non-contact behavior is a matter of degree and situation.

15 For a description of these distances, see Hall (1966).

16 The territorial concept is complex, representing a wide variety of behavior patterns. Carpenter (1958), for example, lists 32 functions associated with territoriality. In the context in which I am using the term at present, what is important is that *the sensory paradigms are not broken or interfered with*.

17 Lissman (1963) has the following to say on this subject: "Study of the ingenious adaptations displayed in the anatomy, physiology, and behavior of animals leads to the familiar conclusion that each has evolved to suit life in its particular corner of the world. Each animal also inhabits a private subjective world that is not accessible to direct observation. This world is made up of information communicated to the creature from the outside in the form of messages picked up by its sense organs."

18 Social scientists trained in the North European tradition are familiar with the trap laid by a dichotomizing of language and culture. Some of the time we make our observations in context, but often we do not. Most, if not all, of Berelson and Steiner's (1964) "findings"

separate the organism, including man, from the matrix of life both conceptually and operationally. Their interpretation of Lewin's (1935) adopted version of Zeigarnik's (1927) study is seen in terms of *drive* rather than of *social* acts. It remained for Spitz (1964) to place Zeigarnik's work in context again. Berelson and Steiner's chapter on culture is particularly fragmented. The work of the transactional psychologists is most conspicuous for its absence from their work. One is left with the impression that for many Americans one does not really "know" something *except when it is out of context*. At the risk of stating the obvious, I wish to underscore what appears to be a growing consensus among ethologists and ecologists that the organism and its environment are so inextricably intertwined that to consider either as separate is an artifact of our own particular way of looking at things.

19   See "The Biochemistry of Crowding and Exocrinology," in Hall (1966).

20   Other studies that have contributed to the formation of my thinking are: Allee (1958); Bonner (1963); Calhoun (1962a; b); Christian (1963); Christian and Davis (1964); Christian, Flyger, and Davis (1961); Deevey (1960); Eibl-Eibesfeldt (1961); Errington (1956, 1957, 1961); Frake (1960); Gilliard (1960, 1963); Goffman (1959); Hediger (1950, 1955); Hinde and Tinbergen (1958); Howard (1920); Lévi-Strauss (1966a); Lissman (1963); Lorenz (1964); McBride (1964); McCulloch (1948); McCulloch and Pitts (1947); Parks and Bruce (1961); Portmann (1959); Rosenblith (1961); Schäfer (1956); Selye (1956); Snyder (1961); Sullivan (1947); Tinbergen (1952, 1958); and Wynne-Edwards (1962).

21   Notable among these is the work of Paul Errington (1956, 1957, 1961). His studies of muskrats and their behavioral responses to the stress from crowding are most revealing. He states that *muskrats share with men* the propensity for growing savage under stress from crowding (italics mine).

22   See my 1966 summary of Christian's work.

23   It is impossible to do justice to Calhoun in any summary. The full implication of this thinking is comprehended only when virtually everything he has written has been mastered. To understand properly his experiments conducted under laboratory conditions, for example, one must be conversant with his earlier studies conducted in the open in a natural setting.

24   Subjects included English, French, German, Swiss, Dutch, Spanish, Arab, Armenian, Greek, South Asian, Indian, Japanese, and West Africans.

25   For the past three years, a motorized drive, 250-exposure bulk film 35 mm Nikon has been used. The 35 mm negative enlarges well and provides excellent detail at low cost, and the camera is somewhat less bulky than a high-quality 16 mm movie camera. The half-frame 35 mm camera has also proved to be a very convenient, compact instrument. So far, the 8 mm and super-8 movie cameras have not provided either the quality or the slow speeds essential for this work.

26   The research referred to is currently under way and will appear in a handbook of procedures and methods in proxemic research.

27   Little (1965, 1967) has established that the correlation between the way a subject perceives two other people, two silhouettes, two dolls, or two cylinders of wood is such that for all practical purposes they are interchangeable. One must observe, however, that in all these contexts, the subject is judging spatial relations *as an outsider* and not *as a participant*.

28   It long has been taken for granted that the signal, sign, or message is what the social scientist concentrates on when doing communications research. I observed some years ago that much of the slippage in intercultural communication occurs because the speaker cannot tell whether the person he is addressing is listening or not (Hall 1964b).

29   It goes without saying that unless the anthropologist is thoroughly conversant with the language as it relates to the rest of the culture, the use of the lexicon as an analytic tool is not possible. In this regard, I have received invaluable aid from my colleague Moukhtar Ani, who has devoted years to the preparation of an Arab-English dictionary. Ani's immersion in the lexicons of the two languages has made it possible for him to deal explicitly with contrasts that would not otherwise be so obvious.

30   Western art is analyzable according to the perspective categories identified by Gibson (1950). Linear perspective is only one of a great many different ways in which objects are seen in depth.

31   Like all great artists, Rembrandt painted in depth, communicating on many different levels. In some of his pictures, there are two or more visual fields, so that the eye jumps from one to the other. He undoubtedly was ahead of his time, and he certainly violated the art mores. His recording of the *instant* of perception appears to be extraordinarily accurate (for those of us who learned to see in the European tradition). It is only recently that popular culture has begun to catch up with him.

32   It is important to emphasize that the procedures used in this series of studies were not concerned with that level of analysis that deals with art styles or subject matter or content in the conventional sense. Both stylistic and content analyses represent valid points of entry into an analysis of art, but they are more suitable to intrasystemic analysis than to the comparison of *two or more different systems*.

33   The term informal, as used here, refers to one of three levels of culture. The other two levels are formal and technical. The formal level of culture is that which is integrated into the entire culture; everyone knows it and takes it for granted. The informal level is made up of those imprecise attitudes that are situational; the technical level is the fully explicated and analyzed activity (see Hall 1959).

34   The term "situational dialect" refers to the different forms of language that are used in and are characteristic of specific *situations*, such as officialese, the language of the marketplace, and the specialized dialects of different occupational, professional, and subclass groups. Mastery of the situational dialect marks the individual as a member of the group. The term situational dialect was originally suggested to me by Edmund S. Glenn in a conversation in 1960. To my knowledge no adequate inventory of the situational dialects of any language exists. Such an inventory would provide an easy measure of relative social complexity of a given culture. Leach (1966) refers to the different "brands" of English embodying "social categories" in such a way as to indicate that he is referring to situational dialects. Lantis' (1960) article also pertains to the situational dialect.

35   They are not exclusively visual, but they do have a visual bias.

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