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Proxemics [and Comments and Replies]

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Proxemics¹

by 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 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

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Educated at the University of Denver (A.B.) and Columbia University (Ph.D.), Hall has taught at the University of Denver, Bennington College, Harvard Business School, and Illinois Institute of Technology. He has done field work in Micronesia. His most recent research deals with the question of how space is perceived in the United States and abroad. His publications include *The Silent Language*, *The Hidden Dimension*, and numerous articles in professional journals.

The present article, solicited by the Editor of CURRENT ANTHROPOLOGY, was submitted on 6 x 67, and was sent for CA★ treatment to 40 scholars. The following responded with written comments: Ray Birdwhistell, Bernhard Bock, Paul Bohannon, Richard Diebold, Marshall Durbin, Munro S. Edmondson, J. L. Fischer, Dell Hymes, Solon T. Kimball, Frank Lynch, Weston La Barre, Donald Marshall, J. E. McClellan, G. B. Milner, Harvey B. Sarles, George L. Trager, and Andrew P. Vayda. Their comments are printed in full after the author's text and are followed by a reply from the author.

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 wide spread 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.

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, ex-suburbanites, 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 is 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 *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.

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 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.

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.

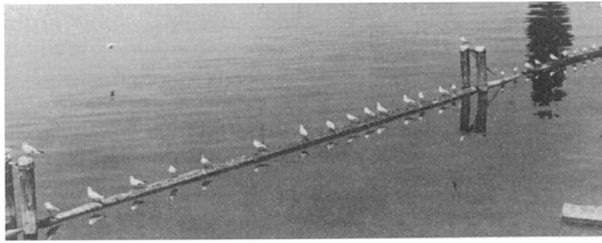


FIG. 1. Photo by H. Hediger, illustrating individual distance in the blackheaded gull. Hediger (1955, p. 66) was the first to systematically describe the various distances employed by animals and introduced the concept of individual distance 26 years ago.

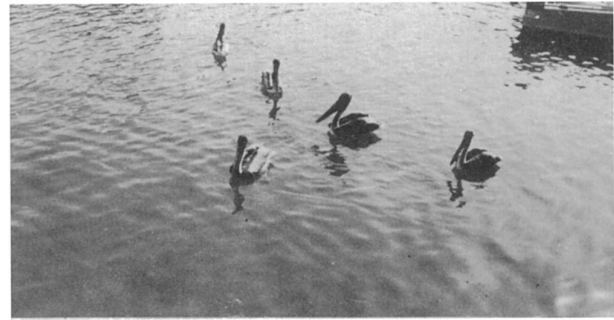


FIG. 2. Personal distance in pelicans. [Photo by Edward T. Hall.]

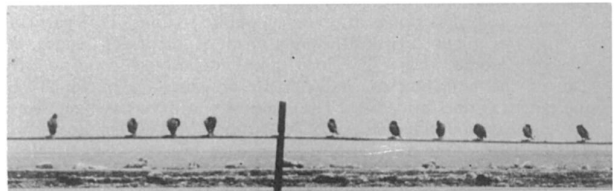


FIG. 3. Pelicans on a rail. The maintenance of uniform distances between individuals of the species can be observed on the water (Fig. 2), on land, and while flying in the air. [Photo by Edward T. Hall.]

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 relation 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).

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).

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 contact and non-contact species,¹⁴ and he was the first to describe in operational terms personal and social distances (see Figures 1, 2, 3). He has also demon-

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.



FIG. 4. One of a series of photographs taken over a two year period to record personal distances in public settings. This particular setting was a streetcar loading platform of sufficient length that two cars would arrive and load simultaneously—a condition that reduced the bunching so characteristic of situations in which only one car at a time is loading. The loading platform was bounded on one side by streetcar tracks and the other by a street dense with traffic. This made it possible to observe spacing comparable to Hediger's gulls on a rail (see Fig. 1). [Photographs by Edward T. Hall.]

strated 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

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

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 collapse²¹ due to stress from sensory overload (crowding).²²

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.

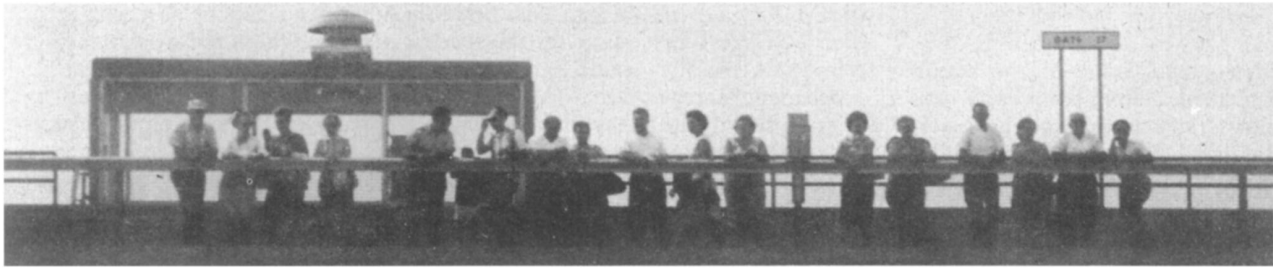


FIG. 5 Individual distances between Italians on a walkway overlooking the Rome Airport. Photograph was taken in early morning on a warm summer day. [Photo by Edward T. Hall.]

Calhoun's experiments and observations are also noteworthy for their behavioral data.²³ He allowed wild Norway 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

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.

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 my 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 identified?

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

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

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 re-created 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 (see Figures 4 and 5, pp. 86-87). 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

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.

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 subjects were shown slides and 8 x 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 self-conscious comment people make as a result of some breach of spatial etiquette. 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

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*.

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 categories.

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One section of our questionnaire dealt with listening behavior²⁸ 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 dic-

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).

tionary, 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

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.

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 controversial³² 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

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*.

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 informally³³ 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.

SOCIOFUGAL 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 (*sociopetal*) or whether it is organized to produce solitariness (*sociofugal*) (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-gemütlich" or "cozy" to German friends but had just the opposite effect on Arabs, who found it oppressive.

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).

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:

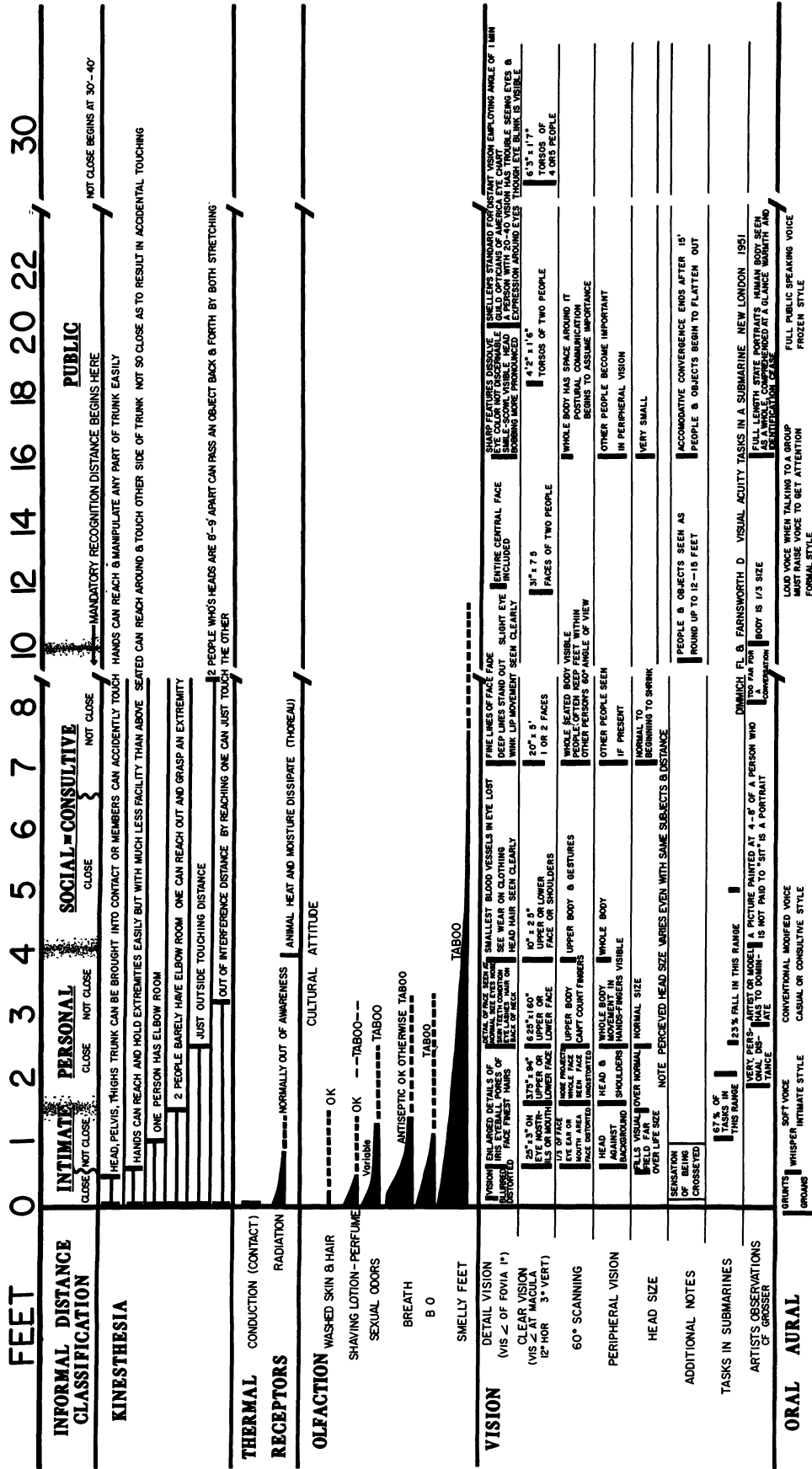
- 1) duality (units or *cenemes* that build up)
- 2) interchangeability ("A" can play "B's" part, and vice-versa)
- 3) displacement (in time or space)
- 4) specialization (the attachment of specific meanings to specific things)
- 5) arbitrariness (there is no necessary connection between the event and 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

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.

TABLE 1

CHART SHOWING INTERPLAY OF THE DISTANT & IMMEDIATE RECEPTORS IN PROXEMIC PERCEPTION

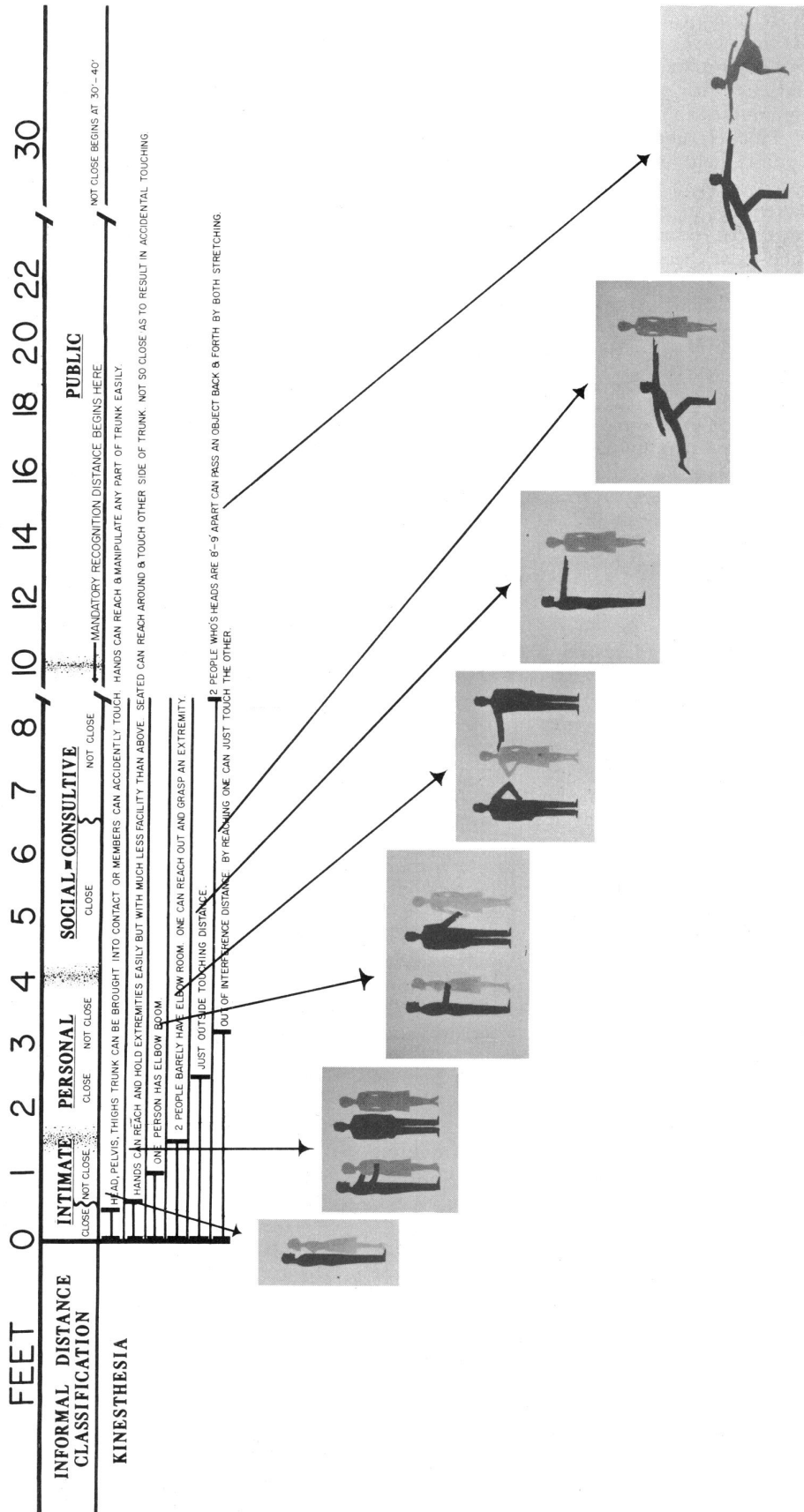


NOTE THE BOUNDARIES ASSOCIATED WITH THE TRANSITION FROM ONE VOICE LEVEL TO THE NEXT HAVE NOT BEEN PRECISELY DETERMINED

The above chart makes it possible to see at a glance how middle class Americans of North European heritage are sensorially involved at different distances. It should be stressed that other cultures use different sensory mixes and often have a different set of sanctions.

TABLE II

CHART SHOWING INTERPLAY OF THE DISTANT & IMMEDIATE RECEPTORS IN PROXEMIC PERCEPTION



In this chart the kinesthetic portion has been illustrated with sketches to indicate visually how these distances are set.

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 analysed. 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

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

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.

Table 1 (see p. 92) shows the relationship of varying distances as experienced by Americans of North European heritage in relation to the different senses.

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?

ABSTRACT

Virtually everything that man is and does is associated with space. Man's sense of space is a synthesis of many sensory inputs: visual, auditory, kinesthetic, olfactory, and thermal. Not only does each of these constitute a complex system (as for example, the dozen or more different ways of experiencing depth visually), but each is molded and patterned by culture. Hence people reared in different cultures live in different sensory worlds. What is more, they are generally unaware of the degree to which the worlds may differ.

From the study of culture we learn that the patterning of perceptual worlds is a function not only of the specific *culture* but of the *relationship*, *activity*, and *emotions*

present in a given situation. Therefore, when two people of different cultures interact, each uses different criteria to interpret the other's behavior, and each may easily misinterpret the relationship, the activity, or the emotions involved.

The study of culture in the proxemic sense is the study of peoples' use of their perceptual apparatus in different emotional states during different activities, in different relationships, settings, and contexts. No single research technique is sufficient in scope to investigate this complex, multi-dimensional subject. The research technique is, therefore, a function of the particular facet under examination at the time and many call for the involvement of many disciplines.³⁶

Like all basic studies of the communicative process, proxemics, as I think of it, is more concerned with *how* than *why*, and more concerned with *structure* than *content*. The work is admittedly detailed and is apt to be routine. It addresses itself to basic human situations in an area of culture that is ordinarily hidden from conscious awareness. For this reason, proxemics frequently leads to new insights about specific cultures, as well as to insights into the generalized concept of *culture* itself. In formulating my thinking concerning proxemics, I have maintained that culture is an extension of basic biological processes. While man's extensions as they evolve may mask the underlying relationships which maintain the equilibrium of biological systems, the relationships and systems are no less real by virtue of being hidden. In the words of Ian McHarg (1963):

... no species can exist without an environment, no species can exist in an environment of its exclusive creation, no species can survive, save as a nondisruptive member of an ecological community. Every member must adjust to other members of the community and to the environment in order to survive. Man is not excluded from this test.

³⁶ Although the study of proxemics is new, the points made in the basic documents have stimulated research in anthropology (Watson and Graves 1966), architecture (Adams; Thiel 1961), psychology (Little 1966; Hellersberg 1966), and photography (Byers 1966).

Comments

by RAY L. BIRDWHISTELL

Philadelphia, Pa., U.S.A. 22 VI 67

Hall's earlier writings, his programmatic articles in the *American Anthropologist*, and his two books, *The Silent Language* and *The Hidden Dimension*, have stimulated considerable interest among students from various behavioral sciences. His sensitivity and perceptivity about human space utilization and, in particular, the cultural variability of space conception and utilization as illustrated in culture contact situations have contributed to the awakening of an interest in the

social perception of space which has been semi-dormant since the first decades following the impact of non-Euclidean geometry and, later, of relativity theory. As one who had carefully followed Hall's writings, it was my vain hope that in this discussion, especially prepared for an international and professional audience, he would present us with a systematic and orderly discourse on his postulates, methodology, and theoretical organization. From the notes he has presented here instead, it is difficult to assess aspects of his position without doing damage to implicit contexts.

At its broadest, proxemics would seem to be concerned with the investigation of all behavior which is direct-

ly or indirectly related to customary human (and non-human) positioning as evidenced in direct behavior, "art and artifact." As such, it is reminiscent of the work Malinowski (excepting the emphasis of Malinowski upon the intensive analysis of particular cultures). Hall fully appreciates the importance of culture contact situations as contexts for the provision of critical data and in his discussion underscores lessons learned almost two generations ago in the comparative studies of Zuni, for example, and a generation ago in the studies of "culture at a distance" (Benedict, Mead, Metraux, *et al.*). In his presentation of data, Hall is a sensitive culturologist, abstracting points as patterns and making use of

the comparative import of these points to arrive at generalizations about human variability and malleability. His conclusion that not only does man behave differently from one cultural context to another, but that, by and large, he behaves differently because he has internalized his surround in the special and ordered ways of his particular culture reinforces a perspective all too often absent from "culture and personality" studies, which tend to see culture as external and coercive to its membership. It is from such work as Hall's that anthropologists are reminded that "psychic unity" does not mean that man is one and only society or culture or environment varies.

When we turn from this over-all appraisal of his work to the examination of theoretical particulars, Hall becomes somewhat less manageable. He locates proxemics as being "much closer" to the orders of behavior "and their derivatives known to the ethologists as territoriality." He acknowledges his debt to Hediger, Tinbergen, and others (particularly Calhoun) without specifically establishing the relevance of these studies to his own work. I conclude from the fact that he explicitly turns from Sorokin, Lewin, Hallowell, and Chapple and Coon and reiterates his concern with "out-of-awareness" behavior that his interest in the ethologists is in the psychological rather than the sociological implications of their work. I have not been able to gain clues as to this orientation from his references to "biology" and "physiology." I may do him an injustice when I conclude that he uses these terms interchangeably. It is this loose treatment of the diachronic and synchronic views of data that makes it at times inconvenient to organize his data into comparable orders of materials.

Part of the difficulty in circumscribing or criticizing the postulates, the methodology, or, even, the subject matter of Hall's discussions lies in his concept of "infra-cultural." On the one hand, he uses the term in a diachronic sense, to refer to "those behavioral manifestations that preceded culture but later became elaborated into culture." ("Culture," incidentally, is seen by Hall as "basically a communicative process.") On the other hand, he seems to use "infra-culture" in a synchronic sense, to refer to an underlying biological or physiological or psychological need system or raw-material (in Linton's sense) sub-stratum to cultural behavior. It is in this area of his theory that his dismissal or, perhaps, heuristic avoidance of the sociological implications of his subject or object matter becomes most critical. His references to "situational" rubrics do not in my mind resolve this uncertainty. His 15 questions for future in-

vestigation can become comprehensible only when he straightens out the epistemology here; decisions at this level determine research design.

Of equal import is Hall's statement that he uses a "communicational" emphasis. His report that he has been influenced by the writings of Whorf and Sapir and by at least certain aspects of those of Bateson does not make it clear what he means by "communication." Larger acquaintance with Hall's writings leaves the reader with the feeling that Hall's view of communication lies somewhere within a field demarcated by Harry Stack Sullivan's transactionalism, certain aspects of information theory, and George L. Trager's global incorporation of all culture as communication. These are all perfectly valid positions, but an amalgam of these varisized assumption systems requires a definitive and delineating lexicon for the reader who would follow Hall's discussion. Again, we are confronted with the difficulty of proceeding from a fuzzy conception of infra-cultural. Man by any definition (except one which by exclusion defines man as the only culture-bearing animal and the only communicator) is a specialized communicator. Ethology and behavioral biology have provided us with vast quantities of still only partially analyzed data that suggest that both communication and social organization are immanent for animal species at least as primitive as the fishes (and perhaps as far back in evolutionary history as live birth and bisexuality). It would seem tenable that both social organization and communication (the latter the dynamic aspect of the former) appear adaptively with specialization and interdependent multi-individual activity. Such a position does not deny the role of physiological or psychological processes in the accomplishment of the interactive task (short term or in extension) but does in a sense trivialize them for the analysis of anthropological or communicational problems. From this point of view, the sociological analysis of the context from which one takes data for the analysis of communicational behavior, structure, or evolution is the *sine qua non* of the research procedure.

Hall's ingenious surprise that small movements of the hand and body were of relevance to the comprehension of the "lower class Negro" group which he studied is revealing as to his conception of communication. Albert Scheflen and I have been repeatedly impressed with the variation and surrogate functioning of modality utilization in the analysis of ongoing interactional scenes recorded on sound film. The relative positions of communicants (interactants) varies systematically with increase or decrease in vol-

ume or intensity on the part of speakers. Comparably, increase in number of kinesic signals or in their extent or intensity is accompanied by variation in paralinguistic and proxemic behavior. In the same way, the presence or absence of touching or its gestural surrogates was accompanied or followed by adaptations in the proxemic, the paralinguistic, and the kinesic modalities. This interdependence of communicative modalities at the social interactional level mirrors, and probably in evolution is interinfluential with, the non-distinctiveness of sensory processes in the central nervous system of man and other animals. I cannot see how Hall, without reference to the other interdependent modalities, can study communication by the analysis of the arrangement of bodies in space or by interviewing actors as to what they think they were doing or by analysis (however perceptive) of their views of their modes of interaction or by the counting of items in a lexicon. These are elegant and well-tested ethnographic techniques, yet at this stage of the reported work they provide little more than interesting esoterica for the student of communication or social organization. Data becomes evidence only in the context of theory.

by BERNHARD BOCK★

Braunschweig, Germany 8 VII 67

Hall's survey of proxemics calls attention to a number of problems of great importance for the sciences of man. Additional proxematic points of view might be:

- 1) "rhythms" of density (rush hours, night hours) in city life.
- 2) varying wishes (of Western individuals) for solitude, company, crowds.
- 3) the differences in atmosphere between a crowded and a poorly attended theatrical performance and the different proxematic attitudes of audiences at the cinema, the opera, a football game.
- 4) the effects of the geographical and the social environment on proxematic phenomena; changes of attitude on moving to a new place; chances of human adaptability.
- 5) alterations in proxematic patterns due to childhood neglect, puberty difficulties, or personal misfortune; the possibility that children, regardless of culture patterns, are more ready for social contacts or are in general better able to bear population density, than adults.
- 6) further problems of sociability: possible differences in proxematic development between only children and children with siblings; social class differences; rural-urban differences; the demand for company in cases of dan-

ger and distress; saluting habits from close up and from afar.

7) the contrast between formal patterns of attitude and the real feelings and possibly deviant behaviour of individuals and groups.

8) the "I-You" relation at various stages (acquaintance, friendship, love, kinship).

9) the quick and easy spread of culture, news, and propaganda in densely populated areas and, on the other hand, the far-reaching influence of radio and television, even in thinly populated areas.

10) proxematic differences among the senses:

(a) near distance: touch and taste;
(b) near or middle distances: smell;
(cf. the German saying: "I can't smell [= stand] him.");

(c) far distances: hearing and sight.

Mostly we shall find a combination and cross-checking of the senses, possibly directed by reason, will, or cultural pattern.

11) proxematic aspects of games, dancing, parties, youth clubs, schools, sports.

12) proxematic problems of the group: the network of communications between members of a group, varying with degree of intimacy, and the possible solidarity of the group against strangers.

13) proxematic problems of acculturation.

14) symbolisms of contact and fellowship: gestures, miming, pre-linguistic sounds, handshakes, kisses, embraces, partly combined with utterances.

15) deviations from the usual proxematic patterns of a group due to adaptation to an altered environment. On this point, the Human Adaptability Section of the International Biological Program might furnish essential details.

Keiter (1966) hints at the wide range of human interaction from the hermit to the city-dweller and points to the custom of the handshake as a "fiction" of human fellowship even in the mass society. The author also discusses the problem of boredom reactions in enforced communities such as submarine crews or polar expeditions.

As to proxematic aspects of linguistics, I want to comment as follows: From the point of lexicography, special attention should probably be paid to the lexical domain ("Wortfeld") of social life; but since the relation between proxemics and language is not only a question of lexicology, but also a matter of grammar and style, one should analyze tribal, local, and "family" vocabularies as well as normal dictionaries. Moreover, the forms of personal address, may vary according to the degree of intimacy (cf. the use of the personal pronoun, French: *tu-vous*, German *du-Sie*); in English, sim-

ilar distinctions are made, for example, in the series "Mr. Brown," "Brown," "Thomas," "Tom," "Tommy." Modern young people in Western Europe are more ready to call each other by their Christian names than were their parents. Nicknames and argots serve as symbols of solidarity and exclude strangers from the intimacy of the group.

Hall is right in pointing out that voice loudness is proxematically relevant. His concept of the "situational dialect" is also very useful. In this connection it is again essential to consider listening behaviour, as every talk may be conceived as a kind of cybernetic mechanism with feedback. The style varieties of the language—e.g., public, official, private, intimate—reveal proxematic differences.

An abundant source of proxematic data will be the educational and didactic literature of mankind, works and passages in poetry and prose, proverbs and parables, rules of conduct, and textbooks on interpersonal relations.

by PAUL BOHANNAN*

Evanston, Ill., U.S.A. 28 VI 67

Hall's observations are vital for anthropologists engaged in research. His use of "native" photographers to record and then to interpret for him what was going on should be paralleled in all branches of ethnography. Many of us have used informants as extensions of our own senses in examining the culture we are studying. We would do well to examine this technique for the ways in which it can help us to get at the crucial points in the culture.

This procedure allows us to examine in detail the transactions between anthropologist and informant. At the risk of ruining the ethnography (except where the anthropologist is experienced in the culture he is studying), why not study anthropologists anthropologizing? How do they make spatial adjustments? How do they find their own feelings and ideas affected by those of their informants? For a long time, I have wanted to do a field job in association with a psychoanalyst. Give the ethnographer sufficient training in psychiatry to be un-self-conscious and aware of some of his own defenses. Give the psychoanalyst sufficient anthropological training to understand the role of culture. Then let the ethnographer and the analyst inform one another very carefully: the ethnographer must discover the degree and kind of "skew" which comes from the psychoanalyst's focusing on psychic views of the culture;

the analyst must discover the way in which the ethnographer distorts the culture because of his own personal system of perceptions, including his own experiences and the neuroses and/or defenses that he has created in adapting to his experience. Such a scheme would be another step in the direction of understanding the process of cross-cultural learning and communication.

by A. RICHARD DIEBOLD, JR.*

Stanford, Calif., U.S.A. 19 VII 67

For those who have an interest in (especially non-verbal) communicative behavior, one of the more striking obstacles to research in this area is itself one of communication, in this case with other specialists. Hopefully this paper by Hall will reach some of the scattered audience that is so engaged and help establish the interdisciplinary contacts which are vitally needed. For the benefit of this audience, I would like to register a few general remarks with the experience just gained of having completed a lengthy review-article of "anthropology and the comparative psychology of communicative behavior" (Diebold 1967).

"Proxemic behavior," as defined by Hall in this and his other publications, is but one perhaps somewhat arbitrarily defined category of the total range of communicative behavior which humans use in social interaction. Some significant caveats follow from this reminder.

The first is that we know relatively little as yet about what Hall calls the "infra-cultural bases" of the human communicative ethogram. Indeed, we should begin by asking just what is this ethogram and whether the term "ethogram" itself is appropriate. This is to invoke the familiar "nature-nurture" issue which besets any interpretive cross-cultural or trans-specific analysis of human behavior. It is to ask questions which, despite the recent impact of ethology and comparative psychology on anthropological theory, produce squalls in the still predominately empiricist (or "culture-relativistic") climate of anthropological inquiry. How much of human communicative behavior is culturally universal? Of those components which are, to what extent can their appearance in organically and functionally normal humans be said to be constitutionally determined? (For instance, can it be demonstrated that any of these components are genetically encoded and endogenously released?) Is there some "infra-cultural" species-specific communicative ethogram for *Homo sapiens*? Anthropologists would tradition-

ally hold that it is impossible to factor out such species-specific components from the complex of overlying behavior acquired during enculturation and subsequent participation of the individual in a particular socio-cultural group. And it is generally conceded by ethologists, even by those who have been cited as extreme "instinct theorists," that endogenous behavioral responses are increasingly more modifiable by experiential factors in the higher vertebrate orders, especially so with the plasticity typical of human behavior. These questions beg, not because Hall has posed them directly, but because of the heavy underpinning of his research in the ethological literature. Nor do I feel that he has obviated this issue by injecting a gratuitous experiential relativism through paying homage to Whorf.

The second caveat is a problem of ascribing to variables dependent or independent status. If it is true that proxemic behavior (or kinesic, or paralinguistic, or however you divide up the pie) is just one of many categories of interactional behavior, what do we know of its functional independence of other communicative subsystems? I take it as foregone conclusion that the physical distance between an interacting dyad can "mean" quite different things depending, among other variables, upon (1) the wider temporal and spatial context in which the confrontation takes place and (2) the co-occurrence or non-occurrence of signal transmission in one or several of the channels which link the dyad (e.g., visual-gestural, audio-visual). Regrettably we know only too little about how these various signals might be mutually corroborative or summing in the information they transmit; when they conflict in the information which they convey; and how context-sensitive they are to the proxemic settings which most interest Hall. And here for me is a crucial dilemma; for while many of Hall's observations stem from contrastive analyses of cross-cultural communication and the difficulties these confrontations often entail, we do not really know which discrepancy, which channel, emits the critical static. It seems to me that we do not have as yet enough insight into context specificity and inter-channel linkages even within our own society, or any subgroup of it, to permit unequivocal conclusions on these matters.

The following trivial example gives some indication of what I mean by context specificity and channel selection: The setting is an informal party, well-attended, with drinking and dancing. The two principals are a young man and a girl, unattached and as yet unacquainted, who find themselves attracted to one another. How? The first "encounter" is the familiar

"across-a-crowded-room" phenomenon. Each has independently taken notice of the other and occasionally gazes across the room. What happens if their eyes meet? Let us say that this eye-engagement is maintained, perhaps briefly, and now note two aspects of this confrontation: (1) *its context*, a very particular sort of social-physical space, i.e., a party; and (2) *the communicative channels which are active*—at this point almost exclusively the visual-gestural channel, and with only minimal utilization of the total potential range of signals which might be produced in that channel, i.e., with only eye-engagement and no or only subliminal facial or postural displays. In short, no other channels are open, and interaction itself is tenuous, but communication did transpire. (Within certain distances and barring certain defects in the visual apparatus, all save the most functionally disturbed individuals in all sociocultural groups are able to perceive whether they are "being looked at" [direct eye-engagement] as opposed to "past," "beyond," or "through"; see, e.g. Argyle and Oean [1965]; Diebold [1967]; Gibson and Pick [1963]; Riemer [1955]. Being looked at does have interactional semanticity, which predictably can mean different things in different societies, and different things in different contexts within one society. More intriguing is the finding that mutual eye-engagement and sudden apperception of being looked at produce measurable changes in autonomic activity, thus suggesting a still undetermined constitutional component for the information processing involved in this type of visual interaction.) We might ask whether the girl's unaverted gaze was somehow linked to this socially particular proxemic setting. What if the pair had first noticed each other at an airport? Granted certain shared components of psychosocial background, if the young man "stared," the girl might well avert her gaze and strive to avoid eye-engagement altogether, supplementing this signal of non-receptivity by preconscious or motivated postural (e.g., standing sideways toward the man) or facial (e.g., unsmiling) cues, her possible interest notwithstanding. The physical distance separating them is the same as that at the party, but the affective-social distance is quite different.

Let us suppose now that the principals have introduced themselves and are happily dancing. But dancing what? If the frug, the tactile channel is inoperative and the audio-vocal, although now potentially open, is attenuated because of the physical distance required by this dance style and the extreme channel noise which intrudes in the resulting space between

them. The young man's looking behavior? It could well depend on how the girl is dressed; conceivably eyes are mutually averted if the girl is wearing a miniskirt which climbs gravity-defiant during the dance movements. If gaze he does, do the young man's simultaneous facial displays convey bemused camaraderie or lascivious scrutiny? Suppose now that the music permits slow movement and bodily contact. Use of the audio-vocal channel (i.e., conversation) will of course be facilitated; the tactile channel will be activated through various sorts of body contact; each partner will be brought into what Hall delightfully calls "the olfactory bubble of [one's] interlocuter;" and, contingent upon how "closely" the two dance (and upon discrepancies in height, etc.), the visual-gestural channel is now attenuated, at least as far as mutual eye-engagement is concerned. And if it pleases both to do so and they dance with maximal body contact, why is it (let us concentrate on chest to breast) that this erogenous invasion is permitted or encouraged by the girl on the dance-floor and later rebuffed by her on the back-porch when re-established by the young man manually—when, we note, although the girl's attraction to the young man has not diminished, there is a change of context for their physical distance, and eye-engagement has been restored? The questions are not so rhetorical as they might seem.

Is all proxemic behavior so context-specific and sensitive to regulation by manifold-channel signalling? I believe it is. And I do not believe that many of these everyday interactional situations lend themselves readily to experimental manipulation in the laboratory, nor to certain heuristic measuring techniques in naturalistic settings. Imagine the difficulties, for instance, of plugging our couple above into a polygraph in order to tap changes in psychodynamic state and autonomic activation, or attempting to film the thwarted indiscretion on the back-porch. The outlook, however, is not as bleak as this suggests. What seems to be in order is extensive and intensive "field observations." Hall indicates how this might be fruitfully pursued and how anthropologists can be and have been enlisted to make a significant contribution. I hope he will be encouraged to continue providing us with the benefits of his advice and experience.

by MARSHALL DURBIN★

New Orleans, La., U.S.A. 19 VII 67

Hall's work on proxemics and kinesics has been of great service to the behavioral sciences in general as well

as to anthropology in particular. I take it for granted that his contributions are widely recognized; the comments which follow will therefore be critical ones, dealing especially with Hall's discussion (in other publications as well as this article) of proxemic behavior as a communication system.

Hall does not clearly outline the differences between (a) proxemic behavior and other human communication systems and (b) proxemic behavior and other animal communication systems. Pervasive throughout his work is the idea that a relationship exists between territoriality in non-humans and proxemic behavior in humans. One is led to believe, although he does not explicitly say so, that the latter developed from the former. From this view it would follow that proxemics deals with structure rather than with content, and indeed Hall makes this clear: "...proxemics, as I think of it, is more... concerned with *structure* than with content..." (p. 95). While Hall has set about the task of mapping the structure most ably, I find this work much less interesting than the study of the content (significance, meaning, etc.) which the structure carries; for it is at the point where the structure begins to take on myriad significances or meanings that it can be identified as a human structure and of interest to anthropologists. In spite of Hall's emphasis on structure, I am quite sure that in his analysis he has inevitably had recourse to content (as the linguists of the 50's did—cf. Harris 1951—who maintained that they could carry out a structural analysis of a language without recourse to meaning). To the extent that analysis in proxemics is purely structural, proxemics can be compared to animal territoriality only in a very trivial way and cannot be compared to other human communication systems at all. Indeed, it is doubtful if it can be compared even with non-human communication systems if we accept Sebeok's (1963: 465) definition of zoosemiotics as involving

... the coding of information in cybernetic control processes and the consequences that are imposed by this categorization where living animals function as input/output linking devices....

Coding processes may perhaps be understood without reference to content, but a categorization or subcategorization process can never be understood unless the analyst refers to its content aspects; and it is precisely a special, but not yet well understood, type of categorization process which distinguishes human communication systems from the communication systems of other animals.

Hall fails, again, to distinguish between human communication systems and those of other animals when he states (p. 91):

Hockett's concept of design features represents a breakthrough in our understanding of communication.

In my opinion, the concept of design features represents a breakthrough only if we ask, "what type of analysis for a communication system can we provide which will account for each of these features?" Productivity was long recognized as a salient feature of language, but not until the introduction of a linguistic analysis (transformational grammar) which accounted for it did it become a significant fact of language. In other words, and contrary to what Hall says (p. 95), the *whys* are more important than the *hows*; content takes precedence over structure if we assume that the structure has already been mapped out to a reasonable degree. Unless productivity in proxemic behavior is accounted for in terms of a content analysis, it is no more interesting than the fact that a dog can be taught to respond to an infinity of stimuli. Only by examining the content side of proxemic behavior will we understand why the architect or designer creates new forms and predict *how* he is able to do so.

I find it curious that Hall is so ready to rely upon linguistics as a model for his proxemics and yet deny content its rightful role, since the linguist must employ content or meaning in his analyses. It may be relevant that linguists have only recently begun to recognize the pressure which content exerts upon structure and to account for it in their analyses. Chomsky (1965) gives the following example of the pressure of content upon structure:

John is easy to please.

John is eager to please.

and

To please John is easy.

but not:

* To please John is eager.

A perhaps less obvious but more interesting example is the following:

I see the house which is big and white.

I see the house which is white and big.

and

I see the big white house.

but not:

* I see the white big house.

by MUNRO S. EDMONSON*

New Orleans, La., U.S.A. 1961 67

Two kinds of confusion seem to me to flaw this stimulating article: one is a matter of theory and the other of

tactics. I sense a certain vagueness of grasp throughout, which I believe follows from failure to differentiate appropriately between the factors in human similarity and the factors in cultural difference: between ethology and ethnology. This is related to the tactical eclecticism which has assembled for us a great deal of information on biosocial spacing but seems to me deficient in incisive conclusions—even preliminary or descriptive ones.

I question whether ethological principles can usefully be applied to cultural variation. Human ethology is fundamentally unitary. If proxemics is subject to variation within the species, we may therefore regard ethology as an important part of the background to studying it, but the explanation of the variation must lie elsewhere. I believe it does, and I find particularly intriguing Hall's communicative phrasing of the matter. I would, however, prefer to focus the problem yet more sharply by concentrating specifically on spatial metaphor. I would include, as Hall does, verbally, graphically, plastically, and architecturally expressed metaphor, but I would also include behavioral and gestural metaphor as well. I see no difficulty in so interpreting his data even when the metaphor expressed is tacit, covert, or unconscious, and I see some potential gains.

When Hall reports that no general descriptive framework for proxemics will work in all cultures, I believe this is one way of stating that the cultural structuring of space is metaphoric—for metaphor has no universal limitations. But metaphor is culturally structured and can be ethnologically studied and explained. Hall seems to me to write off somewhat too easily the relevance of awareness and of conscious cultural patterns to the problem. Surely if I avert my eyes to avoid being charged with witchcraft, keep my hands to myself to avoid being thought sexually aggressive, crouch to keep my head "low," or stand to keep my body from repose in the presence of the chief, the conscious meanings of these usages can be obtained from informants and are relevant to explaining them.

Let me nonetheless agree with Hall that the more problematic and hence more interesting patterns of spacing in man are covert. Construed as metaphors, they are the spatial projections of cultural values. I am not entirely persuaded that space must necessarily be approached as a separable system of metaphor. I consider it more likely that various cultural ideas can be expressed spatially as an alternative or supplement to expressing them in other ways, and I would anticipate that

there may be considerable variation in the degree to which space is used in this fashion in different cultures.

The demonstration that space is structured in complex ways relating to the whole gamut of cultural causation is an important contribution to the scope and sensitivity of anthropology, and I think we are very much in Hall's debt for his extensive exploration of the problem. *Lebensraum*, breathing space, "ten foot poles," close and distant relatives, contagion, pollution, and "keeping in touch," are important metaphors and deserve the most precise and comprehensive analysis. I would urge that we retain the broad view suggested by Hall's work and consider microspatial metaphors in the same field with cognitive and linguistic orderings of space and with the macrospatial patterns of mythology and cosmology.

by J. L. FISCHER*

New Orleans, La., U.S.A. 17 VI 67

Hall's paper on proxemics is full of promising research suggestions, as well as implications for a theory of culture. I will comment on one theoretical point and another point which is more methodological.

Hall notes that he has looked to descriptive linguistics for a "procedural model" for constructing his proxemic theory. More specifically, he uses phonological analysis as the guide for his proxemic analysis. I suspect this may have led him to look for discrete, separable analogues of phonemes in areas of behavior where perhaps there are none. Questions such as the way people space themselves in rooms may perhaps be better handled with a continuous scale rather than with discrete variables. Even in linguistics the pervasiveness of discrete variables has been questioned for some phenomena (cf. Bolinger 1961).

An example of an excessive use of discrete thinking is Hall's reference to the "olfactory bubble" of a participant in a conversation. This is, perhaps, only a figure of speech, but it seems to me to be rather inappropriate. A bubble is extremely well-defined and extremely regular. The olfactory zone of a person, on the other hand, has no definite boundary and gradually fades out; if there are any air currents it is irregular in shape. Olfactory sensitivity varies considerably, probably more than other senses, from one individual to another, depending on minor respiratory diseases, allergies, smoking habits, and probably the inherited condition of the olfactory organs. The odor produced also varies according to season and temperature, ventilation of the space, etc. This, of course, is not to say that it is unim-

portant to study olfactory reactions in social relationships, but simply to question how much and when it is useful to conceptualize the problem "emically" in terms of distinctive features, such as "in" or "out" of the "olfactory bubble." At least some of Hall's other variables, such as loudness of voice, appear to vary continuously rather than discretely.

Hall's experiments in asking subjects from different cultures to arrange objects in various ways are extremely promising and deserve to be extended. As I am sure he realizes, these have implications about the kinds of composition found characteristically in graphic and plastic arts in particular cultures. In a cross-cultural comparative study building upon work by Herbert Barry (1957) and G. P. Murdock (1957), I have suggested that a work of art is "a sort of map of the society in which the artist—and his public—live" (Fischer 1961: 89), and that "design elements are symbolic of members of the society" (p. 82). It would be very interesting to have a comparison in several cultures between the arranging of design elements in traditional art and the arranging of a standardized set of objects in an experimental situation. I would expect correspondences, as I think Hall would; and these in turn should both correspond to the way people of the society space themselves physically in social situations, as well as to more abstract variables of social structure discussed in my paper.

by DELL HYMES

Philadelphia, Pa., U.S.A. 20 VII 67

Hall's work is important to an anthropology of communication and the ethnography it requires. I should like to raise some questions that may help clarify for us Hall's perspective.

1) The initial stress on studying one's own culture parallels a call for study of one's own language among transformational linguists, a school Hall does not mention. The linguists Hall does cite have stressed analysis of systems other than their own. It is not clear how Hall can distrust his own trained, sensitive perception of proxemics in other cultures, yet rely on Whorf as to Hopi metaphysics. If forced to choose, I would take Hall. At issue may be only the degree of explicitness in methodology achieved in linguistics and in proxemics (comparing here Hopi proxemics and Hopi grammar).

Hall's contrasts and insights, discussions of method, and development of physiological structure points, together with the possibility of experimental results (Watson and Graves 1966) and the universal basis in infracultural hu-

man nature, do indicate that transcultural proxemic ethnography will be as feasible as transcultural descriptive linguistics. I would take Hall's account of his personal research experience as testimony to a dialectic (feedback) strategy, analysis of one's own culture and of another being interdependent. This interpretation would be consistent with the importance of Whorf to Hall, since Whorf stressed the necessity of contrastive analysis and saw it as a way to transcend one's own system.

2) The relation between cross-cultural differences and infra-cultural bases is sometimes unclear. The statement that there can be no universal index of crowding might be taken to imply that anything goes. The comment on ethological study of pathologies involving physiological mechanisms that respond to density suggests that an ethological approach to man would find universal limits natural to the species. Interrelations between cultural selectivity and biologically based commonalities seem one of the most important and open aspects of proxemics.

3) Hall mentions culturally different hierarchies of modality. This question is important to assessment of cultural differences in the role of language, speaking being selection of one modality among others. Observations on relative hierarchy and interplay of vocal and proxemic channels will be of great value. Can one say anything now about differences between groups as to the relative role ("functional load") of the proxemic?

4) Current linguistic theory, if taken as a model, would not place primary emphasis on phonological units and the universals by which to approach them, but on grammatical relationships and their corresponding universals. A proxemic equivalent is perhaps to be found in act sequences and the rules underlying them.

In great part the examples given here are proxemic portions of a communicative lexicon, illustrating contrasts in semantic structuring (e.g., *withhold breath and direct it away from the other person: "ashamed" signifies: signifie*). Unlike kinesics, proxemics might lack much of a syntactic dimension, but discussion of face-to-face encounters suggests otherwise. A crucial step might be to move from norms and structure points to their motivated selection (cf. Hall 1964b).

5) It is useful to identify styles with defining situations as a first step, as with the set asserted by Jooos for American English (cf. Gleason 1965:357ff.) or the registers of Halliday, McIntosh and Stevens (1964:89). Modes appropriate to one situation, however, can be used in another to allude to the first or comment on the second (what Gumperz calls "metaphorical switching"). One needs therefore to deal with sys-

tematic relations between repertoires of codes, styles, and the like, on the one hand, and situations, on the other, with one set of relations defining "unmarked" (normal) usage and other sets of relations defining "marked" usage—the particular values that are marked being perhaps insult, beseechment, comic relief, etc.

6) Sapir (1927 [1949:556-57]) certainly anticipates proxemics as he does much of the rest of contemporary ethnography of communication. Behind his insistence on the tyrannical consistency in social behavior of unconscious forms is Boas (1911), just as the development in Sapir (1927, 1929, 1931) is behind Whorf. (Notice that Boas did not make his point so much with lexicons as with obligatory grammatical categories and processes).

What Boas, Sapir, and Whorf held as to the relation of language to habitual behavior, etc., requires more careful explication than it has usually gotten from either admirers or critics. A variety of systematic positions are possible, and have been expressed. Moreover, there are two types of relativity, and Whorf's type, that of structure, depends upon the second, that of use (on these points, see Hymes 1966). In proxemic terms, the consequences of a proxemic system depend upon the relative role of proxemic behavior in a group, and on the role of the given system relative to possible others (an analogue to multilingualism and code-switching).

7) The discussion of spatial and bodily imagery in art and literature suggests a striking essay by Burke (1966).

8) Definition of communication as any event that triggers another organism makes "communication" a superfluous term and is incompatible with an ethnographic approach, in which much of the point must be to determine just what events are culturally regarded as communicative (Gerbner 1966, Hymes 1964, 1967a).

9) Hall finds Hockett's first seven design features of language to apply equally well to proxemics. He finds the expansion of the list to thirteen features to clear up some problems while creating others. From these remarks it is not clear whether or not Hall finds the expanded list successful in distinguishing language from proxemics, and it would be valuable to have his further views on this point.

10) It would be good to know if Hall considers the notions of (a) personal culture (Sapir 1938; Goodenough 1963:257-77; Hymes 1964:29, n. 8), (b) organization of diversity rather than replication of uniformity (Wallace 1961), and (c) diversity of communicative competence within a society (Hymes 1967b) to apply with regard to proxemics.

by SOLON T. KIMBALL★

Gainesville, Fla., U.S.A. 31 VII 67

For those who are already acquainted with Hall's writing there is nothing new in this summary of his research on the spatial behavior of man—a field which he identifies by the term "proxemics." The value of this account, then, will not be found in its content but in the opportunity to examine the relevance of proxemics for anthropology and other disciplines.

We may count as an initial positive contribution the reassertion of the significance of certain fundamental concepts in their application to spatial aspects of behavior. These include recognition of the infra-cultural animal base of man's cultural extensions and the treatment of an organism and its biotope as a single system. From the examination of the variabilities of such systems we can abstract pattern, structure, and process. The uniformity in method permits analytical comparability among all disciplines that study living organisms. This is an achievement of great significance.

The impressive findings of the ethologists on the relation between space and animal behavior cited by Hall certainly add weight to his argument. In his report on his own research, however, there is a notable absence of the "behavioral sequences" which Tinbergen found among the stickleback (Tinbergen 1952). The natural history of the time dimension in behavior should rank equally in importance with that of space. Only by understanding the relation between the two can we gain understanding of either, if our perspective is that of systems and not of traits.

We should also ask about the implications for anthropology of the proxemics approach. It is reasonable to expect, for one thing, that future research will pay closer attention to territoriality and spatial behavior than has research in the past. From the new data we will be able to provide answers for many of the 15 basic problems which Hall lists as yet to be investigated; but will this knowledge inform us about cultural processes? Unfortunately, the answer is probably no, since most of the problems are so phrased that they lead to classification rather than to explanations of the interdependencies between aspects of behavior. This is not what Hall would wish. Further, the precision of observation which proxemics requires must be paralleled by equally precise observations for other aspects of behavior. The traditional concepts of status, role, family, etc. are too gross for such purposes. The order of action in interaction analysis and the activity-focus-

ed time-sequences of event analysis seem much more appropriate as complementary methodological tools. Altogether, this represents a rather extensive reformulation of anthropological method and thought.

by WESTON LA BARRE★

Durham, N.C., U.S.A. 19 VI 67

Hall has pioneered in a new and subtle area of covert culture that is "written nowhere, known by none, and understood by all." His present essay is an excellent and authoritative summary of some of the ways in which people are "programmed" differently. My remarks are intended to be helpful by suggesting further refinements of observation.

First of all, the *negative* instance may be significant. Like many Americans from the northern part of the United States, I am still surprised that total strangers on the streets of my Southern Piedmont town often greet me as though I were a personal friend. At first I interpreted this as extreme friendliness that goes beyond normal American extraversion. I have since learned, however, that it is the result of my unconsciously looking at people in Northern urban fashion. In the South, looking directly at people implies you know them, so that, with varying degrees of incertitude or diffidence, people respond to a mere look with a "friendly" greeting, a phenomenon that can be easily demonstrated experimentally. Also, if for some reason one wants formal anonymity in public, even when passing close by, by not looking at the other person one is officially not there (though he may remind you later, a bit aggressively or chidingly, that he saw you on the street, which both knew).

All this suggests the necessity for discriminating *regional differences*, even in one country. For example, in private colloquy, two Southern businessmen will stand together on a street-corner, somewhat closer together than elsewhere in the United States, but studiously avoid one another's eyes, gazing about explicitly almost anywhere else. By contrast, two professional men of Northern origin will stand somewhat farther apart in private conversation, but will exchange repeated "frank" looks into other's eyes with "constant checking" on facial expressions, often raising both eyebrows in direct or skeptical gaze. The contrast is so marked that one can predict regional origin on the basis of this clue alone.

Beyond this, there is a *contextual* dimension. One of the reasons that watching amateur "home movies" is

from the speaker he does not know. often so uncomfortable or embarrassing is that the subjects, as in a still photograph, *look at* the movie taker, whom they may know better than the viewer (to his discomfort) knows them—whereas, in professional movies, we are accustomed to the rigid convention that the actor *never* looks directly at the camera. Both in movies and on the stage, to do so even at a distance involves the audience and sharply disrupts the dramatic illusion that one is watching, unseen, a “real life” situation. (The fact that television commercials often involve actors looking at the viewer is, I believe, another reason why some people particularly dislike them and feel their privacy has been rudely or oafishly invaded by the “gall” of total strangers acting as if they knew you, and in your own living room at that). The contrast between home and professional movies was brilliantly exploited in one of the Burton-Taylor movies when “home movies” were indicated very simply and unmistakably by the actors’ looking directly into the camera and putting on the self-consciousness of the amateur who knows he’s being “taken.” By habitually looking into the camera, certain masters of ceremonies and public figures *always* look amateurish, despite contrived tics of folksy dis-embarrassment, such as touching the nose, etc. (La Barre, 1964). Likewise, only a trusted newscaster like the American Walter Cronkite, with his magnificently candid editorializing face, that lets you know exactly how he feels about each item of news and intervening advertisement can be allowed to look directly into one’s private living room. Also, his distance from the TV camera is exactly right for both dignity and friendliness.

By contrast with all this in movies and its natural extension, television, one of the secrets of successful *viva voce* public speaking especially at some distance on a podium is to look constantly into the eyes of one specific individual after another—not merely to sample feedback, but also to “engage” the audience (only a few get looked at, but everyone feels the speaker is interested in one’s personal reactions, and one is not an ignored fraction of a “captive audience”). Furthermore, experienced teachers are aware of a *topographic element* in teaching: apple-polishers, especially the pretty but not-so-bright girls, sit toward the front of the classroom, whereas the more detached and independent minds cluster more to the rear. In my own quarter-century of teaching, the most brilliant students have almost invariably sat in the last row. The same may be seen in other academic public lecturing; the degree of interest in the subject may be indic-

ated by the distance of the listener

Another facet of the *topographic context* in proxemics: many teachers have the reputation of having “eyes in the back of their head.” The reason is very simple. As they sit, students do not ordinarily see one another’s faces, hence to see more of others and to be seen by fewer of them from the back seems to confer increasing anonymity and psychological privacy as they sit farther toward the rear of the room. This is an illusion. Again because of the sensitivity of the eyes to peripheral movement, all the teacher need do during an examination is to turn his erstwhile indiscriminate gaze immediately upon a head raising up for that student to be convinced the teacher has been watching him specifically the whole time. A smile by the teacher makes it even worse, in mobilizing the guilt of a possible cheater. Also, an occasional stroll and pause at the rear of the room, where the student is seen by but does not see the teacher, induces a very panic of honesty.

There is a *sex component* of proxemics to be attended to. At faculty parties in the U.S.A., notoriously, men and women tend to place themselves on either side of an imaginary line, diagonal or otherwise across the room, when they sit down. This is not a matter of sex-relevant topical interests, either, for many women bitterly complain at missing the masculine conversation, since they can talk to women any day in the supermarket. Furthermore, men tend to sit farther apart and to move about more restlessly, e.g. in argument; women sit more closely and tend to keep one place. However, in an intellectually non-pretentious “fun” party, every one of the above descriptions must be modified, even though the very same people are involved. Again, the topography of rooms in different houses makes for quite different parties.

There is also an *age component* in proxemics. In a living room and large porch we once entertained 80 high school students with comfort in the same space in which more than 12 (sit-down party) to two dozen (stand-up party) adults would feel “crowded.” Furthermore, though sometimes close enough indeed at the student party, the young people accorded larger space-bubbles at all times to each of the five adults present even though students repeatedly sought out the adults.

It is also possible that proxemic patterns vary in *historic time*. For example, the real contactual closeness of dancing in an older generation contrasts with the perhaps more overt but still only symbolic yard-apart sexuality of all youthful dances from the twist onward. Older dancing was to be mutually experienced; the narcissistic, sometimes dolefully isolate individual

dancing seems mostly to be exhibited and to be watched. Perhaps this is related to the change from participant to spectator sports as well.

There is probably a *status component* in proxemics also. The poet Auden, who is not unself-conscious about the dignity and charisma of the bard, who is acutely sensitive proxemically (especially to architecture), and who sharply delineates his private and public selves, was only half-playful when he wrote “Some thirty inches from my nose/The frontier of my Person goes” (Auden 1965 : 4). Arthur Schlesinger noted that on the news of Senator John Kennedy’s election to the Presidency the people who had been closely associated with his campaign immediately behaved as if his space-envelope had suddenly expanded enormously, like some impenetrable plate-glass *mana* inviolably there (Schlesinger 1965). The late President was also acutely sensitive to the proxemics of politics and privacy (Schlesinger 1965 : 98-104, *et passim* Chap. IV). With respect to symbolic space and psychic-proxemic meanings, we might also interest ourselves in the distinct spatial differences between Florence and Rome, London and Paris, as well as in such phenomena as Gauguin’s flight to Tahiti and Joyce’s self-exile from Ireland, and the discoverable reasons for all these.

Hall astutely notes that each animal species has its “private subjective world” proxemically and ecologically. In this connection, von Vexküll’s sensitive Kantian approach to theoretical biology (1926) profitably would be studied by proxemicists. Finally, I will shortly publish a book in which it is argued that the proxemic patterns of hominids, in contrast with those of baboons, similarly terrestrial in the same environment as early Australopithecines, have a direct bearing not only on sexual dimorphism and biomass but also on human evolution itself.

by FRANK LYNCH, S.J.★

Quezon City, The Philippines. 25 VII 67
Hall’s work has been useful and provocative. I wish, however, that he would move more quickly toward the study of *subcultural* differences in distance-setting and give us fewer undifferentiated “Americans,” “Arabs,” and “Greeks.” General categories such as the latter are justifiable, and even inevitable, in the early stages of any intercultural research, but I would like to see greater attention now to those status and regional distinctions of which Hall is so clearly aware. My desire is prompted by the fact that our research in the mapping of Tagalog disease and kinship categories has made it painfully clear that every

individual within this subnational group has his own way of seeing things, and gets on with others by the overlaps he shares with them; we look forward to even greater differences when we compare Tagalog speakers with other Filipinos. There seems to be no reason to expect that the use of space will show significantly smaller inter-subcultural differences.

Attention to subcultural differences will naturally include a study of how situations are subculturally defined as calling, for instance, for one kind of interpersonal space or another. Among multilinguals (as many Filipinos are), the role of the language or dialect used to open a conversation, to carry it on, to interrupt it, or to close it, will predictably be found most telling as an intervening variable determining interpersonal distance. It has been observed by our interviewers, among others, that at times the situation itself calls for one language or another, while at other times the language chosen as an opener signals the tone of the situation and gets distinct results in terms of interpersonal space.

by J. E. McCLELLAN*

Philadelphia, Pa., U.S.A. 12 VI 67

To reveal the cultural significance of particular human acts is the goal of all social science. Hall and his colleagues have demonstrated conclusively that acts which establish spatial relations among persons are (as we might not have suspected they would be) acts fraught with cultural significance. Those responsible for practical social decisions should be especially grateful for the lessons taught by Hall: when, for example, we evaluate various plans for racial integration in urban schools—busing, educational parks, urban-suburban exchanges—we can no longer ignore (as we have in the past) the various patterns of spatial relations created by each proposed solution. If it served no other purpose, the odd term “proxemics” would be an excellent mnemonic device recalling those subtle, unconscious, but emotionally potent acts by which men keep their world at the right distance. I take the present article to be significant as a reflection of the future of proxemics rather than as a report of findings, which are available in greater detail elsewhere. I suspect, though I cannot prove it here, that certain obvious philosophical confusions which may not have hindered proxemic research in its early stages (possibly quite the reverse) may prove in the future to be formidable obstacles. Let me mention, just as examples, two philosophically questionable points in Hall’s essay (the number could be expanded indefinitely if space allowed it):

1) The attempt to draw general metaphysical implications from the discovery of cultural regularities is doomed to fail. Whorf’s ideas are difficult to grasp mostly because they are terribly muddled: they are frightening only as ambiguous shadows are frightening. It is interesting that Hall puts “free will” inside quotation marks; their use means that nothing precise is to be understood by what’s inside them. And when anyone says “all men are captives of the language they speak,” we know immediately that he’s trying to give us shivers rather than a clear message. The word “captive” makes sense only as it has a significant opposite, like “escapee,” “captor,” etc. What is the contrast here? This shivery and mostly meaningless talk about captives can be replaced by two rather simple assertions:

a) Any man can say only what is sayable in the language(s) he speaks.

b) Any man can perceive his environment only within the categories and distinctions available to him in the language(s) he speaks.

Assertion (a) is a tautology conveying no information whatsoever, ergo nothing frightening. Assertion (b) is an empirical generalization which is interesting if not (as it stands) precisely true. Research on (b) will push us to investigate the connection between the neurophysiological structures of perception and the syntactic structures of language; and if my understanding is at all accurate, *that’s* where the gold is. It’s time to forget the vagaries of general communications theory, especially the seminal, brilliant confusions of Whorf, and move proxemics onto the empirical basis of neurophysiology.

2) In precisely what sense is proxemics to be considered a branch of linguistics? If one carries a “communications bias” to the point of saying that culture is a process of communication, then one has the problem of making it clear how language, in the full sense of the term, differs from other forms of communications. One can treat any ecological system as a process of communication; in some instances this model may be quite illuminating, in others merely distracting (Black 1962). It is always well to emphasize continuity—e.g., between organism and biotope, between culture and physiology, etc.—but it is also necessary, occasionally, to emphasize differences, especially between language proper and other forms of communications. For research in proxemics, this difference is crucial, for on it depends what theory of *learning* is to be employed in interpreting the data. If proxemics is the study of cer-

tain aspects of behavior, then a Skinnerian approach to learning is indeed appropriate. Explanation of the learning of proxemic behavior will show how the reinforcement schedules controlling *that* aspect of behavior are related to the contingencies of a particular culture; a culture which keeps the child close to the mother’s knee until the age of five will use reinforcing stimuli different from those of a culture which separates a child from its mother at the inception of the subsequent pregnancy. Thus a whole strategy of investigating proxemic behavior can be developed on the precise study of how these schedules of reinforcement are related to other cultural contingencies.

If proxemics is really a branch of linguistics, however, as Hall sometimes seems to believe, then what a youngster learns is not behavior at all but a system of rules, and the learning of those rules cannot be accounted for by Skinnerian reinforcement (Chomsky 1959; McClellan 1966). I can see some reasons for treating proxemics as a branch of linguistics, others for not. I rather suspect, however, that this conceptual distinction will have to be worked out with some precision before the research outlined at the end of Hall’s paper can be pursued effectively.

In fine: proxemics has proved an enormously fruitful field of research despite the cloudiness of its guiding principle. The time may come, however, to tidy things up a bit even while advancing the empirical research.

by DONALD S. MARSHALL*

Alexandria, Va., U.S.A. 25 VII 67

Hall’s article is a distinct contribution to anthropological theory, and to applied anthropology, pointing out some ramifications of the apparent fact that space may be viewed or treated differently in various cultures. Perhaps even more significant is that part of the article which represents a beginning effort to relate cultural treatment of space to the more universal aspects of cultural dynamics. I am sorry that Hall did not develop this in more detail.

The article reflects certain points of view which, in my opinion, prevent it from being as important a contribution as it might have been. First, I do not find in it a treatment of the differentiation of individual behavior from the abstract mean of group behavior. My impression is that there may be more variation in individual behavior and attitudes in the treatment of space within a group than there is from cultural group to cultural group.

My second concern is that, without explicitly saying so, Hall attempts to build "proxemics" into what would appear to be a separate field of study. Others have attempted to do the same thing with the field labeled "semantics." Granted the importance of both of these facets of culture, nevertheless they remain but two among the very many facets of cultural behavior. It would seem to me that once one understands and accepts the fact that different cultures treat space, ideas, and objects differently one must then go on to more profound aspects of research—to the "whys" rather than the "whats."

Thirdly, I have some reservations over the fact much of the article seems built around only a relatively few "facts." Presumably, Hall and his students have many more data upon which to base generalizations. Proxemics analysis must produce more than the differentiation of "U.S." versus "Arab" or "U.S." versus "Central American" of his examples.

Fourth, it seems to me that Hall's approach does not really reflect a deep knowledge of photographic technique and its possibilities, in its relation to photographing individuals. My experience over the past 30 years, first as a professional photographer and later as an anthropological fieldworker using photographic equipment, has persuaded me that it is *not* the size of the camera one operates that affects the ability to derive "natural" photographs of one's subjects, but rather one's ability to "teach" one's subjects that one will *only* photograph what is "natural" and "unposed." It does not take South Sea islanders long to learn this fact; I suspect the same would be true among the people with whom Hall and his students worked. Hall probably will come to agree with me that it is *not* the size or brand of camera that is significant; it is the *use* of that camera that characterizes the photographer who can get the kind of results that are required.

In contrast to Hall, I see no need for a "special methodology" for analyzing the cultural view and use of space: it seems to me that this subject is fully as amenable to the anthropologist's observation as are the patterns of interaction between kinsmen, the utilization of social power, or the other intangibles which those of us working in the field must capture, first with our intellect, and then in transposition with pencil or typewriter. Nothing Hall has said in his article persuades me that the field methods for proxemics should differ significantly from the study of other facets of man's cultural behavior.

This particular difference of view relates also to my disbelief in the "uniqueness" of proxemics or its approach. The need for "sensitivity" pointed out by Hall seems to me to be equally re-

quired in any major area of ethnographic study, irrespective of who the subjects are and of whether one is studying "structure" or "content."

My last, and perhaps most fundamental, point of difference with Hall (and perhaps this is an article of faith rather than reason) is with his preference for the analysis of *structure* rather than *content*. To me the "why" of what is being observed seems much more significant than the detailed re-analysis of the "what." One must agree, of course, that to analyze any subject, one first must be thoroughly aware of the "what" of that subject; but I believe one must then go on to understand the "why." for it is the answer to this query which will lead us to an ultimate knowledge of "man's ways."

by G. B. MILNER*

London, England. 17 VII 67

Hall's article is very suggestive and should lead to a host of new investigations, not least in our own Western culture.

If one accepts "proxemics," what about "proxetics"? That is, how many dimensions of space will one have to recognise before one can establish what the significant co-ordinates or oppositions are in any one culture? For instance, in Polynesia and many other parts of the world, the height of the speaker's head, above, or level with, or below the head of the person addressed, is significant. Movement (vertical, horizontal, etc.) between points in space may also have to be considered.

The question of overcrowding (subjective or otherwise) and of its effects on animals and, by extrapolation, on man is clearly of great importance. Lévi-Strauss has even suggested a possible correlation between human overcrowding and racialism. It is instructive to note any special techniques by means of which overcrowded communities maintain social distance in spite of close physical contact and high density housing (e.g., in London, and New York also perhaps, where in the rush-hour one tends not to speak to people in the tube (subway) and where social intercourse generally tends to be more restricted than elsewhere). Note, however that for certain political, religious and athletic activities, "overcrowding" seems to be not only tolerated more readily, but deliberately encouraged and even sought after, for reasons which may be as yet imperfectly understood.

I do not think that an inventory of lexical items to going to be as informative as Hall seems to think. The Keesings used this technique in their study of *Elite Communication in Samoa* (1956) with somewhat mediocre results.

Ultimately, what may prove to be important in proxemics is not so much *boundaries*, but *doors*—methods of *communication across boundaries*. Having defined social space, our task will be to discover by what means boundaries can be crossed, by whom, when, where, in what directions and with what credentials. A Fijian house, for example, has for boundaries four walls, but it is its four doors that are socially significant: One door is for visitors in general, two doors are for the members of the household and privileged visitors, and one door is for the owner of the house and no one else.

by HARVEY B. SARLES*

Minneapolis, Minn., U.S.A. 31 VII 67

This review of Hall's work and thoughts is a welcome recognition that there are other systems of behavior in addition to those currently enjoying popularity among anthropologists. Since I agree wholeheartedly with his position I only wish to try to expand on it here.

One gets the feeling that Hall thinks of space as a rather stable set of bounded circles surrounding each individual. These are presumably learned as a distinct system, a system much like language. By analogy with language as it has traditionally been described, this system must be made up of "perceptual elements", and the job of the proxemicist is merely to discover them—and to see whether or not elements of different cultures interfere with one another, thus effectively stopping possible communication. Because different species live in different cognitive worlds as a function of their physiology, the proxemicist is primarily interested in physiology and perception.

My primary criticism of this position is much the same as my criticism of much of linguistic theory: There is no doubt in my mind that articulate entities (phonemes, morphophonemes, perceptual entities, etc.) have a kind of reality; but they do not constitute the entire shared world. A linguistic analysis provides an approximation to a language which can be made real by native speakers; but it is not a complete description, and it yields no insight into how people use it to communicate or to learn about the world which the language is said to represent. It is fine for writing dictionaries.

It is difficult to escape reifying whatever system one is concerned with, but the attempt to escape ought to be made. Still photos are momentary abstractions from life and are usually quite different from a movie frame extracted from ongoing movement. As in the study of language, Hall would like to find the system and then add meaning and context to the system's

elements as if they constituted an episystem or metasystem to the basic system. The likelihood of finding such a system seems minimal. More likely, the handling of space, the handling of one's body, are intimately a part of one's being, one's language, one's ability to exist in a complex world.

As in linguistics, the assertion that one system is basic or more important than others is never substantiated and remains on the level of "givens." As in linguistics, the grammar has become basic, the study of context and meaning subordinate. But how and what one perceives at a given moment might reflect a bad job situation as well as a particular physiological propensity. A most fruitful approach to the study of proxemics might well attempt to build in context as a variable, rather than as an afterthought.

On the other hand, Hall's list of areas to be investigated is well thought out. If they are taken seriously, it is not hard to see that the study of proxemics could constitute a focus around which a general ethnographic approach could be constructed. One of the few missing areas, and one which would probably be appealing to many social anthropologists, is the explicit recognition that the handling of space is intimately tied up with social structure and that proxemics may be directly applicable for discovering the workings of any social organization.

As the ethologist Glen McBride pointed out in a talk at the University of Minnesota this year, the wise animal husbandman does not build chicken coops to give *each* animal so many square feet of space in order to keep it content. He gives the *community*—the social structure—enough space to be used as the community organizes its space.

Concerning techniques and methods of observation and recording, more sophistication and more usable instrumentation now exists than Hall has claimed. Several of us in Pittsburgh (Condon 1966), Birdwhistell *et al.* in Philadelphia, and now we in Minnesota have worked with movies for

several years, attending, among other things, to spatial variables. The potential application and utility of portable video taping are clear. It only remains to bring ongoing research and teaching in this area formally into graduate training in anthropology, a task which is daily being accomplished in several outlying universities.

by GEORGE L. TRAGER★

Dallas, Texas, U.S.A. 5 VII 67

This is an excellent review article by the inventor (if one may use the term) of proxemics. This cultural system or dimension is so obvious, when we're told about it, and yet remains outside the awareness of most people, including most anthropologists. Hall's article should do much in calling the attention of us all to the field of proxemics.

I do not necessarily think that the term *proxemics* is the best there is for the area of investigation. My objection is perhaps based on the feeling that where there is an *-emics*, there should also be an *-etics*—but *proxetics* would hardly be a mellifluous or desirable addition to the vocabulary. However, since the term *proxemics* is being used by the originator of work in the field, I should judge that we're stuck with it. (Some years ago some linguists tried to get rid of the term *linguist*—and presumably *linguistics*—but the word has remained in use.)

The only place where I would suggest some restatement is in the treatment of the relationship of the spoken language to proxemics. Hockett's original list of the "design features" of language is most vulnerable in its specification of "duality." Actually, language has triality rather than duality: the substance (forms) is expressed by the diacritics (sounds), and functions as meanings—see Trager (1963). I think Hall has somewhat misapprehended what Hockett meant by "duality" (the independent structuring of the phonological and morphological

systems—constituting two terms of my three-way analysis). In my opinion, proxemics does not involve a separate level of units that combine into structured forms, which then express meaning; rather, units-and-forms together are a level, with meaning as another. In this respect, proxemics is, I think, like kinesics or like paralanguage.

The suggestion that "duality of patterning" is "characteristic of all life..." is another instance of the same misapprehension. I believe, from what little I know about (not of) molecular biology, that RNA and DNA involve units-and-structure at once in their "information code" and thus do *not* have "duality" as Hockett meant it. Aside from this point, which needs much more research and analysis before being fully settled, I want to commend this article unreservedly. Data pertaining to the relatedness of the proxemics and the linguistics of individual cultures remain to be gathered, and this kind of research seems to offer vast possibilities for making anthropology a truly unified, though diverse, data-based discipline. When we have done the needed basic research, and have the data systematically displayed, there will be time enough, for those interested, to look into history or origins.

by ANDREW P. VAYDA★

New York, N.Y., U.S.A. 10 VII 67

I do not understand why Hall avoids even raising the questions of why there should be culturally specific differences in "spatial experience," how they might relate to different conditions, and how they might be affected when the conditions change. He might, for example, have considered the possibility that population-specific variations in the tolerance of crowding relate to variations in ecological requirements for population dispersion in land use. At the very least, such problems might have been mentioned in Hall's list of areas to be investigated.

Reply

by EDWARD T. HALL

I want to thank those colleagues who took the trouble to read and comment on this brief and necessarily incomplete summary of my recent work. The observations were helpful and represent a particular type of record. It was interesting to note the degree to which the individual comments reflect the interests, biases, and to some extent the

umwelt of their authors, just as the original article reflects my own particular world view.

In the process of review of these statements I was reminded of a distinction popularized by Marshall McLuhan (1963, 1964); namely, that there is such a thing as linear and non-linear thinking. In general, English and related languages lend themselves to the former. Since it is difficult to improve on Conrad Lorenz's statement (1966), I am quoting it:

I am aware that the task I have set myself makes excessive demands upon my pen. It is almost impossible to portray in words the functioning of a system in which every part is related to every other in such a way that each has a causal influence on the others. Even if one is only trying to explain a gasoline engine it is hard to know where to begin, because the person to whom one seeks to explain it can only understand the nature of the crankshaft if he has first grasped that of the connecting rods, the pistons, the valves, the camshaft, and so on.

Unless one understands the elements of a complete system as a whole, one cannot

understand them at all. The more complex the structure of a system is, the greater this difficulty becomes—and it must be surmounted both in one's research and in one's teaching. Unfortunately, the working structure of the instinctive and culturally acquired patterns of behavior which make up the social life of man seems to be one of the most complicated systems we know on this earth.

The point is that I have described the basic structure of a *system* (in the sense that Lorenz [ibid] uses the term) for revealing a restricted, but apparently relevant aspect of behavior that remains reasonably stable because it functions out-of-awareness. In so doing, there is no implication that other systems are not valid points of entry into cultures. In fact, it is just the opposite. It is also quite evident that different cultural systems (social, linguistic, economic, temporal, and the like) integrate, in ways as yet inadequately described, into the larger system of culture as a whole. Some of the comments relate to the integrative relationship between systems. I do not know the degree to which the proxemic system is applicable to all cultures. I would

suspect, however, that as anthropologists reared in cultures other than my own learn to use this system that they would, in so doing, modify the system and that the modifications that they make will tell us something of culture.

I have found myself in a position analogous to Shirley Jackson's when the "Lottery" appeared in the *New Yorker*. There was little agreement as to just what it was in Miss Jackson's article that evoked such strong reactions in her readers. There was no doubt, however, that she had struck a nerve. It is this sort of event that interests me.

I have laid a great emphasis on what people do (even anthropologists) and not so much emphasis on the ideas they have about their subject. People who interact across cultural lines are constantly and inadvertently touching each other's sore spots. Often they cannot bring themselves to admit this. I have found that explorations of these sensitive areas not only tell me something of the hidden structure of my own culture and provide a way of getting at the details of the specific events I am studying, but also they

sometimes lead to ways of clarifying what Sullivan (1947) called paratoxic communication.

My point is that in order to understand all but the simplest communications (as in Chomsky's "kernel" sentences [1957]) one must be situationally programmed in advance. The degree to which two or more implicit programs vary determines the paratoxic content (culturally engendered noise) of a communication. The paratoxic element increases as a function of both complexity (number of levels as in Trager's comment [p. 105] and cultural distance. In general, therefore, I would say that the indeterminacy principle applies to the examination of cultural events just as it does to the sub-atomic world (Hall 1959); that is, one can be rather specific in the examination of any given level of culture, but that specificity is gained at the expense of clarity on other levels. One would hope, of course, that this would not always be the case, and that at some future date writers of English would not be tied to such a linear system (cf. McLuhan 1959).

References Cited

- ABRAMS, CHARLES. 1965. *The city is the frontier*. New York: Harper & Row.
- ALLEE, WARDER C. 1958. *The social life of animals*. Boston: Beacon Press.
- ARGYLE, M. and J. DEAN. 1965. Eye-contact, distance, and affiliation. *Sociometry* 28: 289-304. [ARD★]
- AUDEN, W. H. 1965. *About the house*. New York: Random House. [WL★]
- BAIN, A. D. 1949. Dominance in the Great Tit, *Parus Major*. *Scottish Naturalist* 61: 369-472.
- BARRY, HERBERT, III. 1957. Relationships between child training and the pictorial arts. *Journal of Abnormal and Social Psychology* 54:380-83. [JLF★]
- BATESON, GREGORY. 1948. "Sex and culture," in *Personal character and cultural milieu*, pp. 94-107. Ann Arbor: Edwards Brothers.
- BERELSON, BERNARD, and GARY A. STEINER. 1964. *Human behavior*. New York: Harcourt, Brace & World.
- BIRDWHISTELL, RAYMOND L. 1952. *Introduction to kinesics*. Louisville: University of Louisville Press.
- BLACK, MAX. 1962. *Models and metaphors: Studies in language and philosophy*. Ithaca: Cornell University Press. [JEM★]
- BLOOMFIELD, LEONARD. 1933. *Language*. New York: H. Holt.
- BOAS, FRANZ. 1911. "Introduction," in *Handbook of American Indian Languages*. Bureau of American Ethnology Bulletin 40.
- BOLINGER, DWIGHT L. 1961. *Generality, gradience, and the all-or-none*. The Hague: Mouton. [JLF★]
- BONNER, JOHN T. 1963. How slime molds communicate. *Scientific American* 209(2): 84-86.
- BURKE, KENNETH. 1966. "The thinking of the body," in *Language as symbolic action*, pp. 308-43. Berkeley and Los Angeles: University of California Press. [DH★]
- BYERS, PAUL. 1966. Cameras don't take pictures. *Columbia University Forum* 9.
- CALHOUN, JOHN B. 1950. The study of wild animals under controlled conditions. *Annals of the New York Academy of Sciences* 51:113-22.
- . 1962a. "A behavioral sink," in *Roots of behavior*. Edited by Eugene L. Bliss, pp. 295-316. New York: Harper & Brothers.
- . 1962b. Population density and social pathology. *Scientific American* 206:139-46.
- CARPENTER, C. R. 1958. "Territoriality: A review of concepts and problems," in *Behavior and evolution*. Edited by A. Roe and G. G. Simpson, pp. 224-50. New Haven: Yale University Press.
- CARPENTER, EDMUND, FREDERICK VARLEY, and ROBERT FLAHERTY. 1959. *Eskimo*. Toronto: University of Toronto Press.
- CHOMBART DE LAUWE, PAUL. 1959a. *Famille et habitation*. Paris: Editions du Centre National de la Recherche Scientifique.
- . 1959b. Le milieu et l'étude sociologique de cas individuels. *Informations Sociales* 2:41-54.
- CHOMSKY, NOAM. 1957. *Syntactic Structures*. The Hague: Mouton & Co.
- . 1959. Review of: *Verbal behavior*, by B. F. Skinner. *Language* 35:26-56. [MD, JEM★]
- . 1965. *Aspects of the theory of syntax*. Cambridge: M.I.T. Press. [MD★]
- CHRISTIAN, JOHN J. 1960. Factors in mass mortality of a herd of Sika deer (*Cervus nippon*). *Chesapeake Science* 1:79-95.
- . 1963. The pathology of overpopulation. *Military Medicine* 128:571-603.
- CHRISTIAN, JOHN J., VAGH FLYGER, and DAVID E. DAVIS. 1961. Phenomena associated with population density. *Proceedings of the National Academy of Science* 47:428-49.
- CHRISTIAN, JOHN J., and DAVID E. DAVIS. 1964. Social and endocrine factors are integrated in the regulation of growth of mammalian populations. *Science* 146: 1550-60.
- COLLIER, JOHN, JR. 1967. Holt, Rinehart, & Winston. In press.
- CONDON, W. S. 1967. A segmentation of behavior. MS.
- CONDON, W. S., and W. D. OGSTON. 1966. Sound film analysis of normal and pathological behavior patterns. *The Journal of Nervous and Mental Disease* 143(4):338-47.
- DEEVEY, EDWARD S. 1960. The hare and the harex: A cautionary tale. *Yale Review*, Winter.
- DIEBOLD, A. R., JR. 1967. "Anthropology and the comparative psychology of communicative behavior," in *Animal communication: Techniques of study and results of research*. Edited by T. A. Sebeok. Bloomington: Indiana University Press. In press. [ARD★]
- DORNER, ALEXANDER. 1958. *The way beyond art*. New York: New York University Press.
- EIBL-EIBESFELDT, I. 1961. The fighting behavior of animals. *Scientific American* 205(6):112-22.
- ERRINGTON, PAUL. 1956. Factors limiting higher vertebrate populations. *Science* 124:304-7.

- . 1957. *Of men and marshes*. New York: The Macmillan Company.
- . 1961. *Muskrais and marsh management*. Harrisburg: Stackpole Company.
- FISCHER, J. L. 1961. Art styles as cultural cognitive maps. *American Anthropologist* 63:79–93. [JLF★]
- FRAKE, CHARLES O. 1960. "Family and kinship in Eastern Subanon," in *Social structure in Southeast Asia*. Edited by G. P. Murdock, pp. 51–64. Viking Fund Publications in Anthropology no. 29.
- FRIED, MARC. 1963. "Grieving for a lost home," in *The urban condition*. Edited by Leonard J. Duhl. New York: Basic Books.
- FRIED, MARC, and PEGGY GLEICHER. 1961. Some sources of residential satisfaction in an urban slum. *Journal of the American Institute of Planners* 27:305–15.
- GANS, HERBERT. 1960. *The urban villagers*. Cambridge: The M.I.T. Press and Harvard University Press.
- GERBNER, GEORGE. 1966. On defining communication: still another view. *The Journal of Communication* 16:99–103. [DH★]
- GIBSON, JAMES J. 1950. *The perception of the visual world*. Boston: Houghton Mifflin.
- GIBSON, J. J. and A. D. PICK. 1963. Perception of another person's looking behavior. *American Journal of Psychology* 76:386–94. [ARD★]
- GIEDION, SIGFRIED. 1962. *The eternal present: The beginnings of architecture*. Vol. II. New York: Bollingen Foundation, Pantheon Books.
- GILLIARD, E. THOMAS. 1962. On the breeding behavior of the Cock-of-the-Rock (*Aves. Rupicola rupicola*). *Bulletin of the American Museum of Natural History* 124:31–68.
- . 1963. Evolution of bowerbirds. *Scientific American* 209(2):38–46.
- GLEASON, H. A., JR. 1965. *Linguistics and English grammar*. New York: Holt, Rinehart, and Winston. [DH★]
- GOFFMAN, ERVING. 1959. *The presentation of self in everyday life*. New York: Doubleday.
- . 1961. *Encounters*. Indianapolis: Bobbs-Merrill.
- GOODENOUGH, WARD H. 1963. *Cooperation in change*. New York: Russell Sage Foundation. [DH★]
- GROSSER, MAURICE. 1951. *The painter's eye*. New York: Rinehart.
- HALL, EDWARD T. 1955. The anthropology of manners. *Scientific American* 192:85–89.
- . 1956. "A microcultural analysis of time." *Proceedings of the Fifth International Congress of Anthropological and Ethnological Sciences, Philadelphia, Sept. 1-9, 1956*, pp. 118–22.
- . 1959. *The silent language*. Garden City: Doubleday.
- . 1960a. The madding crowd. *Landscape*, Autumn, pp. 26–29.
- . 1960b. *ICA participant English language requirement guide, part I*. Washington, D.C.
- . 1963a. "Proxemics—The study of man's spatial relations and boundaries," in *Man's image in medicine and anthropology*, pp. 422–45. New York: International Universities Press.
- . 1963b. A system for the notation of proxemic behavior. *American Anthropologist* 65:1003–26.
- . 1964a. "Adumbration in intercultural communication," in *The ethnography of communication*. Edited by American Anthropologist 66(6), part 2. 154–63.
- . 1964b. "Silent assumptions in social communication," in *Disorders of communication XLII*. Edited by Rioch and Weinstein, pp. 41–55. Baltimore: Research Publications Association for Research in Nervous and Mental Disease.
- . 1966. *The hidden dimension*. New York: Doubleday.
- HALL, EDWARD T., and GEORGE L. TRAGER. 1953. *The analysis of culture*. Washington, D.C.: American Council of Learned Societies.
- HALL, EDWARD T., and WILLIAM F. WHYTE. 1960. Inter-cultural communication. *Human Organization* 19(1):5–12.
- HALLIDAY, M. A. K., ANGUS MCINTOSH and PETER STREVEVS. 1964. *The linguistic sciences and language teaching*. London: Longmans. [DH★]
- HALLOWELL, A. IRVING. 1955. "Cultural factors in spatial orientation," in *Culture and experience*, pp. 184–202. Philadelphia: University of Pennsylvania Press.
- HARRIS, ZELLIG. 1951. *Structural linguistics*. Chicago: University of Chicago Press. [MD★]
- HAYES, ALFRED S. 1964. "Paralinguistics and kinesics: Pedagogical perspectives," in *Approaches to semiotics*. Edited by T. H. Sebeok and A. S. Hayes. The Hague: Mouton.
- HEDIGER, H. 1950. *Wild animals in captivity*. London: Butterworth.
- . 1955. *Studies of the psychology and behavior of captive animals in zoos and circuses*. London: Butterworth.
- . 1961. "The evolution of territorial behavior," in *Social life of Early Man*. Edited by S. L. Washburn, pp. 34–57. Viking Fund Publications in Anthropology no. 31.
- HELLERSBERG, ELIZABETH F. 1950. *Adaptation to reality of our culture*. Springfield: C. C. Thomas.
- . 1966. Spatial structures and images in Japan, a key to culture understanding. MS.
- HINDE, R. A., and NIKO TINBERGEN. 1958. "The comparative study of species-specific behavior," in *Behavior and evolution*. Edited by A. Roe and G. G. Simpson, pp. 251–68. New Haven: Yale University Press.
- HOCKETT, CHARLES F. 1958. *A course in modern linguistics*. New York: Macmillan.
- . 1960. The origin of speech. *Scientific American* 203:338–96.
- HOWARD, H. E. 1920. *Territory in bird life*. London: Murray.
- HYMES, DELL. 1964. "Introduction: Toward ethnographies of communication," in *The ethnography of communication*. Edited by John Gumperz and Dell Hymes, pp. 1–34. Washington, D.C.: American Anthropological Association. [DH★]
- . 1966. "Two types of linguistic relativity," in *Sociolinguistics*. Edited by William Bright, pp. 114–58. The Hague: Mouton. [DH★]
- . 1967a. "The anthropology of communication," in *Human communication theory*. Edited by Frank X. W. Dance, pp. 139. New York: Holt, Rinehart, and Winston. [DH★]
- . 1967b. "On communicative competence," in *Research planning conference on language development in disadvantaged children*, pp. 1–16. New York: Yeshiva University. [DH★]
- JAMMER, MAX. 1960. *Concepts of space*. New York: Harper.
- JOOS, MARTIN. 1962. The five clocks. *International Journal of American Linguistics* 28(2):Part V.
- KEESING, FELIX M., and MARIE M. KEESING. 1956. *Elite communication in Samoa: A study of leadership*. Stanford Anthropological Series no. 3. [GBM★]
- KEITER, FRIEDRICH. 1966. *Verhaltensbiologie des Menschen auf kulturantropologischer Grundlage*. München-Basel. [BB★]
- KILPATRICK, FRANKLIN P. Editor. 1961. *Explorations in transactional psychology*. New York: New York University Press.
- LA BARRE, W. 1964. "Paralinguistics, kinesics, and cultural anthropology," in *Approaches to semiotics*. Edited by T. A. Sebeok, A. S. Hayes, and M. C. Bateson, pp. 191–220. The Hague: Mouton. [WL★]
- LANTIS, MARGARET. 1960. Vernacular culture. *American Anthropologist* 62:202–16.
- LEACH, EDMUND R. 1965. Culture and social cohesion: An anthropologist's view. *Daedalus*, Winter, pp. 24–38.
- LÉVI-STRAUSS, CLAUDE. 1966a. The scope of anthropology. *CURRENT ANTHROPOLOGY* 7:112–23.
- . 1966b. Anthropology: Its achievements and future. *CURRENT ANTHROPOLOGY* 7:124–27.
- LISSMAN, H. W. 1963. Electric location by fishes. *Scientific American* 208(3):50–59.
- LITTLE, KENNETH B. 1965. Personal space. *Journal of Experimental Social Psychology* 1:237–47.
- . 1967. Value congruence and interaction distances. *Journal of Social Psychology*. In press.
- LORENZ, KONRAD. 1963. *On Agression*. New York: Harcourt, Brace & World.
- . 1964. *Das sogenannte Böse; zur naturgeschichte der Agression* (the biology of aggression). Vienna: Dr. G. Borothen-Schoeler.
- LYND, ROBERT S. 1948. *Knowledge for what?* Princeton: Princeton University Press.
- MCBRIDE, GLEN. 1964. *A general theory of social organization and behavior*. St. Lucia, Australia: University of Queensland Press.
- MCCLELLAN, JAMES E. 1966. Skinner's philosophy of human nature. *Studies in Philosophy and Education* 4:307–32.
- MCCULLOCH, WARREN S. 1948. Teleological mechanisms. *Annals of the New York Academy of Sciences* 50:259–77.
- . 1964. "Reliable systems using unreliable units," in *Disorders of Communication XLII*. Edited by Rioch and Weinstein. Baltimore: Research Publications Association for Research in Nervous and Mental Disease.
- MCCULLOCH, WARREN S., and WALTER PITTS. 1947. How we know universals: the perception of auditory and visual forms. *Bulletin of Mathematical Biophysics* 9:127–47.
- MCHARG, IAN. 1963. "Man and his environment," in *The urban condition*. Edited by Leonard J. Duhl. New York: Basic Books.
- MCLUHAN, MARSHALL. 1963. *The Guten-*

- burg galaxy. Toronto: University of Toronto. Press.
- . 1964. *Understanding Media*. New York: McGraw-Hill.
- MEAD, MARGARET. 1961. Anthropology among the sciences. *American Anthropologist* 63:475–82.
- MURDOCK, G. P. 1957. World ethnographic sample. *American Anthropologist* 59: 664–87. [JLF★]
- OSMOND, HUMPHREY. 1957. Function as the basis of psychiatric ward design. *Mental Hospitals* (Architectural Supplement) April, pp. 23–29.
- PARKES, A. S., and H. M. BRUCE. 1961. Olfactory stimuli in mammalian reproduction. *Science* 134:1049–54.
- PORTMANN, ADOLF. 1959. *Animal camouflage*. Ann Arbor: University of Michigan Press.
- REUSCH, JURGEN. 1961. *Therapeutic communication*. New York: Mouton.
- ROE, ANNE, and GEORGE G. SIMPSON. Editors. 1958. *Behavior and evolution*. New Haven: Yale University Press.
- ROSENBLITH, WALTER A. 1961. *Sensory communication*. New York: The M.I.T. Press and John Wiley & Sons.
- SAPIR, EDWARD. 1929. The status of linguistics as a science. *Language* 5:207–214.
- . 1931. Conceptual categories in primitive languages. *Science* 74(578). [DH★]
- . 1938. Why cultural anthropology needs the psychiatrist. *Psychiatry* 1:7–12. [DH★]
- . 1949. *Selected writings of Edward Sapir in language, culture, and personality*. Edited by David Mandelbaum. Berkeley: University of California Press.
- SCHÄFER, WILHELM. 1956. *Der kritische raum und die kritische situation in der tierischen sozietät*. Frankfurt: Krämer.
- SCHLESINGER, ARTHUR M., JR. 1965. *A thousand days*. Boston: Houghton Mifflin. [WL★]
- SEBEOK, T. A. 1963. Review of: *Porpoises and sonar*, by Winthrop N. Kellogg (Chicago: University of Chicago Press, 1961) and *Communication among social bees*, by Martin Lindauer (Cambridge: Harvard University Press, 1961). *Language* 39:448–66. [MD★]
- SELYE, HANS. 1956. *The stress of life*. New York: McGraw-Hill.
- SNYDER, ROBERT. 1961. Evolution and integration of mechanisms that regulate population growth. *National Academy of Sciences* 47:449–55.
- SPITZ, RENÉ A. 1964. The derailment of dialogue. Stimulus overload, action cycles, and the completion gradient. *Journal of the American Psychoanalytic Association* 12:752–75.
- SROLE, LEO, et al. 1962. *Mental health in the metropolis: The Midtown Manhattan Study*. Thomas A. C. Rennie Series in Social Psychiatry. New York: McGraw-Hill.
- SULLIVAN, HARRY STACK. 1947. *Conceptions of modern psychiatry*. Washington: William Alanson White Psychiatric Foundation.
- THIEL, PHILIP. 1961. A sequence-experience notation for architectural and urban space. *Town Planning Review*, April, pp. 33–52.
- TINBERGEN, NIKO. 1952. The curious behavior of the Stickleback. *Scientific American* 187(6):22–26. [ST★]
- . 1958. *Curious naturalists*. New York: Basic Books.
- TRAGER, G. L. 1963. *Linguistics is linguistics*. Studies in Linguistics: Occasional Papers, no. 10. [GLT★]
- UEXKÜLL, J. VON. 1926. *Theoretical biology*. New York: Harcourt, Brace. [WL★]
- WALLACE, ANTHONY F. C. 1961. *Culture and personality*. New York: Random House. [DH★]
- WATSON, MICHAEL, and THEODORE GRAVES. 1966. An analysis of proxemic behavior. *American Anthropologist* 68:971–85.
- WHORF, BENJAMIN LEE. 1956. *Language, thought, and reality*. New York: The Technology Press and John Wiley & Sons.
- WYNNE-EDWARDS, V. C. 1962. *Animal dispersion in relation to social behavior*. New York: Hafner.

OUR READERS WRITE

(Continued from page 82)

Instead of devoting a single article to influences of several factors on contemporary family life, as suggested by Philippe Garigue (CA 8:145), a more satisfactory evaluation may be one review article for one or two related factors exerting such influence.

L. K. MAHAPATRA
Orissa, India

A review article dealing with the cultural dynamics of population migration (immigration, emigration, internal migration, etc.). It would be especially interesting to consider: (1) quantitative aspects (scales & trajectories of migratory flow over the past 50-60 years); (2) qualitative aspects (major culture change factors related to significant human migrations, contemporary and historical); (3) special attention to world areas, countries, societies in which migration is or has been a prominent factor in cultural reorganization and/or specific kinds of "development."

JOHN B. CORNELL
Austin, Tex., U.S.A.

I would like to see a discussion of the place of physical anthropology (human biology) in the discipline as a whole: are we going to become geneticists,

anatomists, palaeontologists (see D.F. Roberts in *AJPA*, #2, 1966) or will we remain an adjunct to cultural? They need us, but can we afford to need them, and still do creative, publishable research on a scholarly level which will satisfy the demands of the institution for eminence in the field? Will the synthesizer be sufficiently recognized to survive? Also, what about the position of women in anthropology, esp. physical anthropology, in our larger institutions?

CHARLOTTE M. OTTEN
DeKalb, Ill., U.S.A.

I like Ritchie's idea (CA 8:145) of an assessment of the Human Relations Area Files. It could include references to books and good articles from those who have successfully used the files in research, to guide those who could use suggestions on applications of the files.

RALPH S. RIFFENBURGH
Pasadena, California, U.S.A.

Although I disagree with Roberto Escalante's general appreciation of van der Merwe's article (I have no doubt that CA was right to publish it), I think Escalante's suggestions (See CA 7:491) for possible linguistic topics are

very interesting, particularly numbers 1) possible relationship between a set of linguistic data and a set of ethnological and social data; 2) dependency of linguistic borrowing on cultural diffusion; and 3) synthesis of linguistic principles as a science (including the American school, the Prague Circle, and the Soviet School). Regarding No. 1, it would be very useful to consult Prof. J. L. Fischer of Tulane University. To deal with No. 4, a CA panel should be set up. (A case in point is the concept of "American School" which does not appear to exist.)

OLGA S. AKHMANOVA
Moscow, U.S.S.R.

It would be useful if CA would publish a list of Foundations and other grant-giving agencies that will accept applications from *individuals*. Too many only concern themselves with large sums for institutions, whereas anthropology is still one of the disciplines where useful work can be done on a one man basis.

JAMES H. CHAPLIN
Uganda

A full scale appraisal of the origin of domesticated corn (maize) with botanists and archaeologists mating their data.

NORMAN B. TINDALE
Adelaide, Australia

(Continued on page 224)