PERSONAL SPACE
A STUDY OF NEGROES AND WHITES

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Chapter 1

HISTORY AND INTRODUCTION

Territoriality and proxemics are highly interrelated areas of human behavior that have been largely ignored until recent times (Fast, 1970). Ardrey (1961, 1966, 1970) has published three books popularizing Howard's (1920) concept of territoriality, the behavior by which an animal lays claim to an area and defends it against members of his own species. Hall (1959, 1966) and Sommer (1959, 1961, 1962, 1965, 1968, 1969) have the shared role of promulgator of the concept of personal space, the inviolate zone around each individual. "Proxemics" is Hall's term for the study of how man sees and uses space. Territoriality and personal space are definite areas protected by individual members of a species and each is rooted in the other.

Two of the more "controlled" studies dealing with territorial behavior have been concerned with overcrowding, forced prolonged violations of space requirements. Christian's (1960) study of the Sika deer herd on James Island in Chesapeake Bay showed that physiological malfunction can occur as the direct result of overcrowding. The deer had adequate food and water, yet over one-half of the entire herd died. Detailed histological studies showed that the weight of the adrenal glands collected after the die off were 81%

smaller than those collected before the die off. Christian (1960) stated: "Mortality evidently resulted from shock. . . There was no evidence of infection, starvation, or other obvious cause to explain the mass mortality [p. 93]."

Calhoun (1958) has conducted several studies with different types of rats in relatively natural environments. Early in his studies Calhoun coined the phrase "behavioral sink" to designate the gross distortions of behavior which appeared among the majority of his rats as population density increased. Normal behavior was totally interrupted by cannabalism, aberrant sexual behavior, nest building, and courting habits, and disintegration of normal social organization.

Hediger (1955) has measured the spatial requirements of hundreds of animal species. He used the expression "flight distance" for inter-species interaction and defined it as the characteristic distance that an animal will allow a man or other potential enemy to approach. For intraspecies interaction, Hediger used the phrases personal distance and social distance. Hediger claims that these distances are so consistent that they can be measured in centimeters. Hediger also classified animals as either contact or noncontact species. Under normal conditions some animals tend to leave consistent distances between their members. The evenly spaced rows of birds on telephone wires are an everyday example of a noncontact species. Hall (1966) claims that the urge for maintenance of a personal space is inborn, but en-

vironmental conditions can cause tremendous differences in the specific boundaries that are learned.

Man, in the pattern of his noncontact predecessors, has developed a kind of portable territory that goes where he goes and serves many of the functions of his larger territory. Hall (1957) used the phrase personal space and described it as the small protective sphere that an organism maintains between itself and others. Sommer (1969) points out that the phrase is used in two ways: "The first refers to the emotionally charged zone around each person, sometimes described as a soap bubble or aura, which helps to regulate the spacing of individuals. The second usage refers to the processes by which people mark out and personalize the spaces they inhabit [p. viii]."

Not only are the distances at which persons maintain themselves in specific social situations different, but the cues which elicit distancing from culture to culture are not the same. Hall reports the common observation of travelers abroad backing down a hallway, while their hosts try to close the distance so they can converse comfortably. The subtle cues that normally communicate satisfaction with the distance between them were misinterpreted. Hand movements, eye movements, auditory and olfactory cues, and body orientation can all be used to extend or compress the personal space.

Hall's (1966) reports are primarily anecdotal. Many are about the inter-cultural misunderstandings that result

when the personal space habits of different cultures are unknown. Arabs seem to be pushy and rude; the Japanese able to survive in conditions that would suffocate an American; the French sensually involved with everyone and everything; the English very straight-laced and distant. The root of these differences is in the myriad ways of handling space. Only through examination of these differences can alienation and distorted communication be avoided (Hall, 1966).

Hediger's (1955) careful measurements of flight distances of captive animals began a series of investigations into animal distancing patterns. Hall's (1959) book describing cultural differences in human use of space has likewise stimulated a substantial amount of human research. A comprehensive review of the literature related to the present study would be more voluminous than enlightening. The following studies are intended to be exemplary rather than exhaustive. A topical organization would be repetitious because of the many variables involved in each study and their interaction. Therefore, a chronological approach is used to trace the development of the empirical research in the field.

Several of the early studies were concerned primarily with the development of techniques that would accurately measure personal space boundaries. Hall (1963) developed a system for the notation of proxemic (spatial) behavior. Most investigations of personal space have been concerned with four of Hall's dimensions of proxemic behavior. These

include actual physical distance between persons in social interaction, sociofugal-sociopetal orientation, sex of S, and retinal combinations.

Sommer (1959) observed seating arrangements in a hospital cafeteria. He found that communication tends to take place between persons sitting at corner locations. Corner-to-corner locations were selected more frequently than either side-by-side or face-to-face locations. Shizophrenic patients chose opposite and distant positions more frequently than non-schizophrenic patients. Sommer also found that females sat closer to a female decoy than to a male decoy, even closer than males sat to decoys of either sex. Sex differences were also found in choice of chair position. Females chose to sit alongside the decoy. Males overwhelmingly preferred opposite chairs. Sommer concluded that the results of this study support "the observation that females in our culture will often be seen holding hands or kissing other females, whereas the behaviors are uncommon for males. . . Obviously, there are cultural influences at work [p. 258]."

Sommer (1961) measured the distance at which Ss began sitting side-by-side rather than face-to-face. He found that when the distance between couches was from 1 to 3 feet, Ss preferred to sit opposite each other. At 3½ feet between couches, Ss began to choose side-by-side positions.

Sommer (1962) used 144 female and 38 male Ss to investigate further the distance maintained for comfortable

conversation. He found that Ss preferred side-by-side positions only when the distance across exceeds the side-by-side distance.

Hare and Bales (1963) examined seating position in small group interaction patterns. They found that ". . . centrality of seating position and distance between members can be used to predict the interaction pattern [p. 480]," in a task situation. In a social situation, members of the group talk to their neighbors. Persons scoring high on a dominance scale chose seats that insured high levels of interaction.

Argyle and Dean (1965) investigated eye contact (EC) as a function of physical distance. They recorded per cent of time EC was maintained with a confederate and found that EC decreased with spatial proximity. Sex of S and sex of confederate interacted strongly in that there was much less EC with mixed-sex pairs, especially at two feet. Ss seated at 10 feet leaned forward and increased EC. Argyle and Dean also asked Ss to walk up to five objects ". . . as close as comfortable to see well." The first two were inanimate objects roughly the size of the human head. Ss also approached a photograph of E, E with eyes closed, and E with eyes open. The differences between photo and eyes open ($\bar{X}$ = 35.7 inches & 42.7 inches, respectively) and eyes open and eyes shut ($\bar{X}$ = 42.7 & 34.0 inches, respectively) were significant. The children approached all three objects closer than did the adults ($\bar{X}$ photo = 16.9; $\bar{X}$ eyes shut = 27.6; $\bar{X}$ eyes open =

31.4 inches).

McBride (1965) used galvanic skin response (GSR) recordings as a measure of anxiety resulting from spatial invasion. Ss showed no difference in the average GSR at 1 to 3 feet, but the GSR at 9 feet was significantly less than at either 1 or 3 feet. The response to male Es was greater than the response to female Es at 1 foot with eyes fixated. Frontal approach yielded the greatest GSR, with side and rear approaches following, respectively. Same sex Es produced significantly less GSR in Ss than did opposite sex Es.

Horowitz, Duff, and Stratton (1964) asked schizophrenic and non-schizophrenic patients to approach a hat-rack and another person. They found that both groups would approach an inanimate object more closely than another human being, but that the schizophrenics maintained greater distances between themselves and others than did the nonschizophrenics.

Several studies have been conducted that were concerned with reactions to the intentional invasion of personal space (e.g., Sommer, 1965; Felipe and Sommer, 1966). The technique was to sit down next to an unsuspecting person and record how long it took him to react. Reactions ranged from flight to agonistic display, with much individual differences. Eye contact was avoided. Only two mental patients and one of the 80 college coeds observed asked E to move over. Sommer (1965) observed that this supports Hall's (1959) view that

"we treat space somewhat as we treat sex. It is there but we don't talk about it [p. 345]."

Rosenfeld (1967) put chalk on the bottom of chair legs to accurately record the distance and angle between female Ss who had been instructed to either seek or avoid approval from a confederate. "Approval-seeking Ss positioned themselves significantly closer to the confederate [p. 120]." Rosenfeld concluded that interpersonal proximity is used as an instrumental act for the attainment of social approval.

Little (1965, 1968) has used placement of plastic, human-shaped figures to investigate personal space. This technique is very similar to Kuethe's (1962a, 1962b, 1964) felt figure technique. Both investigators have found that persons place figures into social schema, e.g., friends place themselves closer together than strangers, persons sharing same values tend to attract each other. Weinstein (1965, 1967) has found that emotionally disturbed boys place felt figures in schemas indicative of their malady. Little (1965) compared placement of plastic, doll-like figures with placement of actors for the same situations. It was found that 1 inch between the dolls was equivalent to 1 foot between the actors. Later, Little (1968) used this technique to study distancing in five national groups: American, Greek, Southern Italian, Swedish and Scottish. Two findings were of particular relevance. First, there were significant differ-

ences between these national groups in regard to figure placement. Greeks placed the figures closest together. Americans and Italians did not differ from each other but both groups placed the figures farther apart than did the Greeks. Scottish Ss placed the figures farther apart than did any other group. Swedish Ss fell between American and Scottish Ss. Second, women placed the figures in different patterns than did males of the same nationality. Italian and Greek women placed female figures significantly closer than their male counterparts placed male figures. Scot and American females placed female figures significantly farther apart than male figures were placed by the males of those nationalities. Swedish Ss treated the male and female stimulus objects almost identically. Intimate transactions took place at significantly closer distances than social ones for both sexes, but females saw the distance as significantly smaller than did males. Women placed authority figures farther from themselves than did men.

Kinzel (1969) used a unique procedure to determine the dimensions of the personal space of violent and nonviolent criminals. He simply informed the Ss that he was going to walk up to them and that they were to tell him when they felt that he was getting too close for comfort. Kinzel found that the normal person has a cylindrical personal space with a radius of about 18 inches. The violent criminal's personal space is elliptical, bulging in the rear. The violent criminals allowed him to come as close as 34 inches

when he approached from the front, but 42 inches was the boundary when approached from the rear. Kinzel observed many gestures such as fist clenching and setting of feet which indicated the criminals were prepared to defend their territory physically.

Baxter (1970) observed Anglo-, Black-, and Mexican-American groups of adults, adolescents, and children in male-male, female-female, and male-female combinations. Observations were made both outdoors and indoors at a zoo. The largest difference between subjects was due to ethnic group membership of the S pairs. Mexican Ss of all ages and sex groupings interacted most proximally ($\bar{X}$=1.78 feet), Anglos were intermediate ($\bar{X}$=2.29 feet), and Blacks stood most distant ($\bar{X}$=2.66 feet). Each ethnic group differed from the others significantly. Sex of the pairs also produced a significant main effect. Male-female groups interacted most proximally, the female-female groups were next, and the male-male groups were most distant ($\bar{X}$'s = 2.11, 2.23, and 2.39 respectively). Anglos and Blacks both showed this relationship while Mexicans had a different pattern. Differences were also found between age groups (children most proximally, adults most distant). Baxter reports that these results are consistent with Hall's (1966) observations of Latin Americans, and Willis' (1966) findings concerning greeting distance in Negroes.

Weaver (1971) demonstrated that the distance main-

tained by institutionalized retarded children from an E was dependent upon the affective tone of an earlier interaction. Weaver suggests that atypically high positive and negative reaction tendencies (staying too close or moving too far away) reduce the quality of M. R. childrens' performance to a level lower than that which one would expect on the basis of their intellectual abilities alone.

These studies make it very clear that cultural diversity is accompanied by different ways of handling space. They also show that males and females within cultural groups have different distancing patterns (Little, 1968). Age (Baxter, 1970; Argyle and Dean, 1965), national group (Little, 1968), sex (Little, 1968), and psychiatric diagnosis (Weinstien, 1965, 1967; Kuethe, 1962) are variables which affect the acquisition of personal space boundaries. Since myriad behaviors compress and expand personal space and different distances are used for specific social situations, diverse methodology has been employed.

Man has developed a whole complex of interrelated culturally patterned, spatial ways of relating to others. Yet these patterns are almost completely outside man's conscious awareness and can be tediously reconstructed only from analysis of microbehavioral events.

Hall (1959) has stated that lack of knowledge about national distancing habits has spoiled many, otherwise happy, international relationships. This suggests that unwitting invasion of personal space may be one source of the tension

between blacks and whites in the United States. One of the distinctions between the American Negro's culture and the American Caucasian's culture may be the personal space patterns of the individuals in each. Lack of information about these differences may be minimizing the Negro's opportunities to accept and be accepted into the prevailing social norms.

The purpose of this study is to determine if there are differences in the physical distances maintained by blacks and whites in an experimental situation. The study will also deal with the comparison of the personal distances maintained by males and females of each race. Distances maintained by the males of each race will be compared, as will the distances maintained by the females of both races. A three part hypothesis was formulated. There will be no significant difference in distancing attributable to sex, race, or the interaction of sex and race.

Chapter 2

METHOD

Subjects

The subjects used for this study were 30 Negroes, 15 males and 15 females, of college age and 30 whites, 15 males and 15 females, of the same age range. Socio-economic background was controlled by random sampling of those people who were in summer school and therefore not of the lower class. Because of the small number of students attending summer school, the sample groups were obtained through diverse methods. Ss in the white groups were not volunteers. E obtained them by telling their classes that they were going to participate in an experiment concerned with "how people react in a simple social situation." Those Ss were run during classroom time. The classes used were all undergraduate psychology courses. The Negro Ss were paid volunteers and were all run in the early evening. Variables such as size of hometown, physical stature, and amount of eye contact normally maintained were controlled by the random sampling procedure. Racial and sexual attitudes were controlled by having each group of Ss perform with an assistant A of their own race and sex. To control for degree of acquaintance, Ss

were asked if they knew A before the experimental session began and were not used if A was more than an acquaintance.

Assistants

The As were selected on the basis of average age, height, weight, and general appearance. As were instructed to maintain some eye contact, without fixating on Ss' eyes. Gestures and body movements were discouraged.

Apparatus and Materials

A six foot steel tape measure was used to measure the distance between S and A. After the experimental session, Ss filled out a short questionnaire. The data asked for were: age, sex, student status, number of siblings, marital status, estimated annual income of parent(s) or guardian, and degree of acquaintance with A. Appropriate blanks on the questionnaire served as a data sheet for each S.

Procedure

The experiment was conducted in the halls of classroom buildings and a sorority house living room. The lighting was quite similar. Ss were told, "I simply want to see how people act in certain social situations. All you have to do is stand here, facing (name of the assistant). Now just walk up to (name) as close as you

feel comfortable." The starting point was always six feet away from the assistant and marked by some object such as, "even with that door," or "just in front of that trash can." A steel tape measure was laid down between the two points and Ss approached along that line. E recorded the number of inches between the toes of the S and those of the assistant. Subjects were run in three rotations of each group, so there was a repeated measure on each S.

Chapter 3

RESULTS

The responses to each questionnaire item were cast into a 2 x 2 contingency table. One dichotomy was the race of the Ss. The other dichotomy was whether S's response fell above or below the grand median of all 60 Ss. To simplify the computational procedures, Ss falling in the cell containing the median were assigned to one so that an equal number of Ss fell into each. When an S failed to respond to an item, that S was not included in the analysis of that item.

The results of these analyses revealed no statistically significant differences between the races. The same proportion of Black and White Ss fell above and below the median annual income of their parents ($\chi^2 = 0.32$; $df = 1$). Blacks and Whites did not differ significantly in regard to the number of siblings ($\chi^2 = 0.65$; $df = 1$). There was no significant difference in regard to the age of the Ss ($\chi^2 = 0.00$; $df = 1$). Finally, the Ss of each race were found to be equivalent in regard to student classification (i.e., Freshman, etc.) ($\chi^2 = 0.10$; $df = 1$).

The first step in testing the three hypotheses of this study was to reduce the amount of information gathered. This was done by obtaining the average distance between

each S and the A used for that S. These averages were the data upon which the conclusions of this study were to be based.

These data were subjected to a 2x2 analysis of variance to determine if distancing varied as a function of race, sex or the interaction of these two variables. The results of this analysis are summarized in Table 1. Distancing was not found to vary significantly as a function of sex ($F = 2.18$; $df = 1/56$). The average distance between Black Ss and their As (9.7 inches) was significantly ($F = 5.02$; $df = 1/56$; P .05) less than the average distance between White Ss and their As (15.6 inches). The interaction between sex and race was not statistically significant ($F < 1$).

Table 1

Summary Table of the 2 x 2

Analysis of Variance of

the Distancing Data

Source of Variation	Degrees of freedom	Mean Sum of Squares	F	P
Sex (S)	1	224.26	2.18	----
Race (4)	1	516.26	5.02	<.05
S X R	1	4.28	< 1	----
Error	56	102.80		

The mean distances from the A for each group are graphically presented in Figure 1. Although sex was not a main effect, summing across race, it can be seen that females maintained smaller distances than did males.

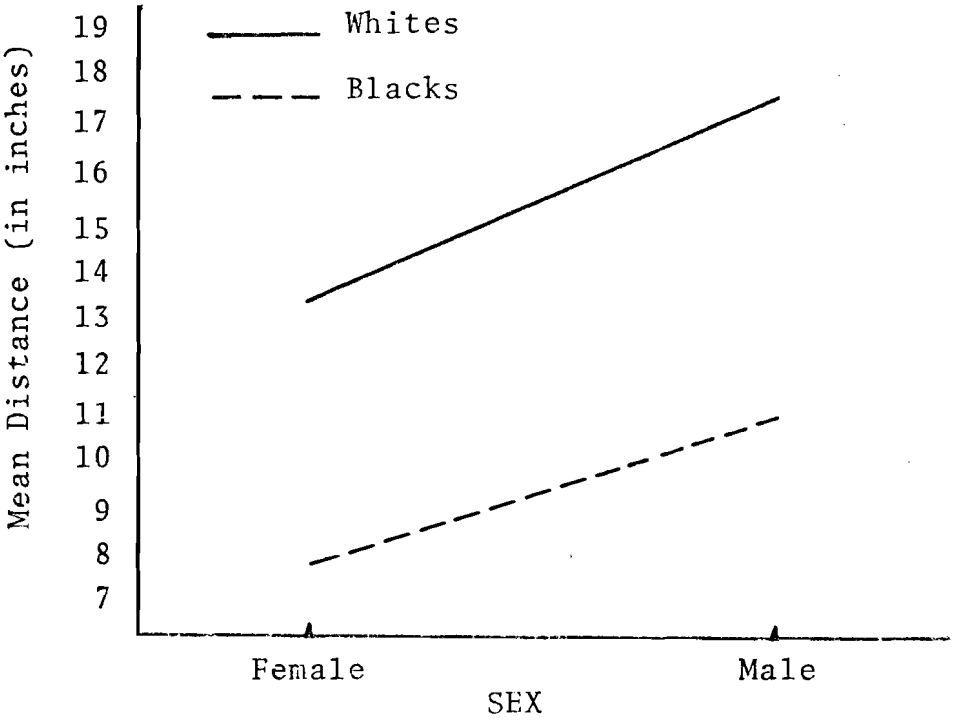

Figure 1

The Mean Distances Maintained by Negroes and Whites in an Experimental Situation.

Chapter 4

DISCUSSION

The data gathered from the questionnaire showed that the groups were homogenous for age, number of siblings, student status, parents annual income, and degree of acquaintance with A. The mean age for all groups was 21.0 years. Mean number of siblings was 2.3; mean annual income was $6,000 to $10,000. None of the Ss knew their A well enough to disqualify themselves from the experiment.

The results of the present study indicate that Black males and females approach an unfamiliar person of their own race and sex more closely than do whites when asked to approach as close as comfortable. No significant differences were found due to sex of S. Therefore, the null hypothesis was supported for sex and the interaction of sex and race. However, the null hypothesis must be rejected for the distances maintained by the two races.

The present findings are not consistent with the findings of Willis (1966) and Baxter (1970). However, the present study differs from those studies in several respects. Willis measured the distance at which Negroes greeted each other, while Baxter observed people watching animal exhibits in a zoo. The present study was conducted in a laboratory setting with minimal social interaction. Baxter (1970) had

an observer estimate the distance between subject, while in the present study a precise measurement was taken. Therefore, the results of the present study should not be used to confirm or discredit the findings of Willis (1966) or Baxter (1970).

The purpose of this study was to describe the distances Blacks and Whites would approach, rather than explain any differences which may have been found. However, the data is applicable to several hypotheses which have been formulated by previous investigators.

Hall (1966) claimed that personal space boundaries can be affected by population density, i.e., as density increases, personal space boundaries contract. Assuming population density in Black communities to be higher than the average White community, the present results would not be surprising. The Blacks sampled were, however, from the same general geographical area with families which earned similar annual incomes and had the same number of children as the Whites sampled. Thus, it may not be concluded that Blacks approached more closely because they have always lived in more crowded quarters and, hence, conditioned to maintain smaller distances than Whites.

Jensen (1969) has suggested that many of the differences in the Anglo-and Negro-American subcultures are due to genetic factors. Many modern ethnologists have supported a genetic basis for human territorial behavior (Hass, 1970;

Morris, 1969; Ardrey, 1970). The present findings show that despite similar socioeconomic background, family size, and degree of familiarity with the persons approached, the Negro Ss approached more closely than did the White Ss. In view of Weaver's (1971) demonstration that interpersonal physical distance can be modified by simple verbal conditions, the present author suggests that the differences were due to some environmental condition not yet recognized, rather than due to inherited factors.

Hall (1966) reports that persons interacting at different distances use different sensory cues. The quality and intensity of visual and auditory information changes as persons come closer together. Tactile, olfactory, and thermal stimuli may also be received when persons interact closely. Thus, the explanation of the more proximal distances preferred by Negroes may be the use of tactile, olfactory, and thermal cues to regulate distancing. Hall (1966) claims that thermal and olfaction receptors may affect distancing when the persons are interacting at less than one foot. The average distance for both male and female Whites was greater than one foot, while the mean distances for all Negroes was less than one foot. Hense, Hall's (1966) findings support an explanation based on these differences.

Linguists and social anthropoligists have long recognized the fact that different cultural groups often communicate similar concepts with dissimilar words and phrases, or

vice versa (Hall, 1957). Another explanation of the present results could be attempted on the basis of this knowledge. The Black subjects seemed to take "as close as comfortable" as a challenge. Many of the Negroes commented after his approach, "next time, think I'll kiss him," or a similar expression. All of the assistants reported that the distances chosen by the subjects made them uncomfortable. Five of the Black females approached A so close that they were touching. There was a great deal of laughing and joking among the Black Ss which may be interpreted as a means of easing their own discomfort. Negroes seemed to interpret the instructions to mean "as close as possible" rather than "as close as comfortable." The present study does, however, describe how Negroes and Whites react to the same set of instructions under the same conditions. If a lack of communication was the cause of the racial effect on the mean distances approached, the significance of the study is enhanced, rather than marred. Intercultural communications are necessary to alleviate the distrust, discouragement, and tension between American Negroes and Whites.

It was hoped that having one person remain stationary while the other approached him, the resulting distance would be characteristic of the S rather than of the A. In a few cases it seemed that Ss attempted to sense when the A became uncomfortable. In the great majority of cases, Ss were either unable to tell how A felt, or did not appear

to let it affect their approach. In either case, the distances reported would still be fairly accurate description of the individual's personal space boundary, since he probably behaves similarly when interacting with persons out of this experimental situation.

While the present study did not attempt to describe interracial distances, the review of related literature and the present study both suggest that investigations of this nature are needed. The large differences in distancing between races supports Hall's (1966) suggestion that interracial conflict may be caused by lack of information concerning racial differences in distancing patterns. A White male and a black female, for example, should tend toward a mutually dissatisfactory spacing arrangement. Since inappropriately close spacing has been shown to be anxiety arousing (Felipe and Sommer, 1966), one of the participants would be expected to be uncomfortable with the distance, while the other participant may view the encounter as equally unpleasant since inappropriately distant spacing may be interpreted as rejecting or overly formal. No data is available on the matter at present. However, the present study suggests that investigations in which Negroes and Whites approach members of the other race would prove significant in terms of improving interracial relations.

Chapter 5

SUMMARY

Through a review of the literature it was shown that the concept of personal space is based upon the concept of territoriality. The social and physiological effects of overcrowding, the prolonged violation of personal space requirements were discussed. It has been shown that overcrowding can lead to gross distortions of social behavior. Overcrowding can also lead to physiological malfunction and death.

A review of the related literature showed that cultural differences in distancing exist. Anecdotal and empirical studies have consistently shown that different national groups tend to view specific social situations as occurring at different distances. The review also suggested that the sex of Ss influences personal distances. These differences occur not only within racial groups, but across them.

In the present study 15 male and 15 female Negroes and equal numbers of Whites were asked to approach, "as close as comfortable," an assistant of their own sex and race whom they did not know. The distance between the S and the assistant was measured three times, to determine a characteristic distance for each S.

A questionnaire was also administered to each S. The data gathered from the questionnaire showed that the groups were homogenous for age, number of siblings, student status, parents' annual income, and degree of acquaintance with the confederate. All Ss were enrolled in summer school at a Midwestern teachers college.

It was hypothesized that there would be no significant differences in the distances chosen by each group attributable to race, sex, or their interaction. It was found that White males chose the most distant positions ($\bar{X}$ = 17.8 inches), white females were next ($\bar{X}$ = 13.4 inches), black males followed ($\bar{X}$ = 11.4 inches), and black females were most proximal ($\bar{X}$ = 8.1 inches).

The null hypotheses were supported for sex and the interaction of sex and race. Although females of both races approached the confederate more closely than did the males of the same race, the differences were not statistically significant. The null hypothesis concerning race of the Ss was rejected. White Ss chose significantly greater distances than did Black Ss ($P < .05$).

The results were discussed in relation to the findings of previous investigations in which Whites have been shown to interact more proximally than Blacks. It was concluded that the diverse methods employed make the present results inapplicable to their findings. The results were also discussed in relation to sex differences which have

been found in distancing patterns. The literature is inconsistent in regard to sex differences in distancing.

An explanation of the differences found was tentatively offered on the basis of previous research by Hall (1966). Hall (1966) has reported that olfactory and tactile cues elicit distancing when interactions occur at less than one foot. In the present study Negroes came within one foot of the confederate. Whites maintained distances greater than one foot. It follows that the cues eliciting distancing for the two groups may be different, and hence, the different distances observed.

More research dealing with cultural differences in personal space was suggested as a means of improving communications and helping alleviate the tension often surrounding interracial relationships. Research in which members of different racial groups interact with each other should prove especially significant.

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