Journal of Personality and Social Psychology
1971, Vol. 19, No. 3, 351–356

FIELD STUDY OF THE PROXEMIC BEHAVIOR OF YOUNG SCHOOL CHILDREN IN THREE SUBCULTURAL GROUPS [1]

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The proxemic relationships of interacting pairs of first- and second-grade children from three subcultural groups were observed in school playgrounds. Interaction distance and directness of shoulder orientation (axis) were recorded. Middle-class white children stood farther apart than lower-class black and Puerto Rican children. Sex differences among white children in distance scores and culture and sex differences in axis scores were also found. The results suggest that proxemic patterns are acquired early in life and support the contention that differences between the dominant culture and other groups in the use of space are basic, with the qualification that sex roles may also influence proxemic behavior.

The regulation of spatial orientation between interactants has been postulated by Hall (1963) to be the direct result of cultural learning. People of different cultures not only speak different languages, he stated, but, more importantly, *inhabit different sensory worlds*. Thus, during ordinary daily conversation, Arabs may stand rather close and directly with one another and be highly involved on a sensory level; an American or Englishman would blanch at such intimacy. Likewise, subcultures within the larger culture are thought to differ in such "proxemic" relationships, the effect being to consolidate each minority group and to isolate it from others, making intergroup communication more difficult (Hall, 1966, pp. 2, 149). The principle aim of the present study was to examine whether such subcultural variation is characteristic of lower-class blacks and Puerto Ricans and middle-class whites, as well as to test Hall's assumption that differences in patterns of structuring space are basic to culture and subculture, by studying spacial orientation behavior among young school children.

Are proxemic relationships a potential source of misunderstanding in face-to-face cross-cultural exchanges? An examination of the literature shows that empirical evidence on cultural differences is still in question. On the one hand, Watson and Graves (1966) found differences in spatial orientation (distance, shoulder orientation, and eye contact) between the Arab and American cultures and among geographical regions within these cultures, and Willis (1966) found some evidence of race differences in interaction distance within the American culture.[3] On the other hand, Forston and Larson (1968) found no significant differences between Latin Americans and Americans,[4] and Jones (1971) found striking cultural homogeneity of distance scores among four lower-class subcultures in New York City.

In light of the inconclusive findings of previous research, the present study was designed not only to provide further data but also to incorporate certain features not combined in previous studies that seemed critical to testing Hall's ideas about cultural differentiation. First, it seemed necessary that the cultural groups selected for comparison be ones that are supposed to differ from one another in proxemic behavior, judging from the

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[3] The differences that Willis (1966) found between blacks and whites (1½ inches) were not very great in magnitude, however, and were significant at only the .09 level.

[4] This could have been, however, the result of the nature of the task, a political discussion, since Latin Americans have been reported to sit farther apart when discussing a serious topic than when engaging in social interaction.

observations of experts familiar with them. Second, it seemed appropriate that children rather than adults be studied. Hall maintained that the differences between minority groups and the dominant American culture are basic and are intrinsically related to the core values of a culture, one such value being the use and structuring of space (Hall, 1966, p. 165). If the proxemic behavior of a culture is *basic,* then it should be acquired at an early age. Finally, when the authors considered a point made by Birdwhistell (1959), that nonverbal behaviors are highly sensitive to situational factors, it seemed fitting that observations be made in an unobtrusive manner in field settings that were comparable across cultural groups.

The main hypotheses in this study are based on the assertion advanced by Hall (1966), that lower-income blacks and Puerto Ricans are "more highly involved" than white middle-class Americans and therefore use a closer interaction distance (cf. Hall, 1966, pp. 172–173). The authors found support for Hall's observation in their conversations with teachers in black and Puerto Rican schools who pointed out that in lower-class black homes, touching was far more common than talking, a condition we would expect to correlate with close interaction distance.[5] Drawing on this background, the authors made the following predictions:

Hypothesis I: White children will stand farther apart than will black children.

Hypothesis II: White children will stand farther apart than will Puerto Rican children.

The cultural relevance of body orientation (axis) has received much less attention from Hall and other investigators of proxemic behavior. Although it has been hypothesized that blacks are less direct than members of other cultural groups (Jones, 1971), Hall made no specific predictions about differences in axis behavior among the groups observed in the present study, and there is no previous data confirming such differences. Also, while there is some evidence that women are more direct in shoulder orientation than men (Jones, 1971), it was not known whether such sex differences would appear among young school children. It seemed appropriate therefore to limit predictions concerning axis data in the present study to the following nondirectional, exploratory hypotheses:

Hypothesis III: There will be a difference between black and white children in axis orientation.

Hypothesis IV: There will be a difference between black and Puerto Rican children in axis orientation.

Hypothesis V: There will be a difference between males and females in axis orientation.

METHOD

Subjects

A total of 210 dyads were employed in the study. Equal numbers of male–male and female–female dyads were selected from black, Puerto Rican, and white subcultures, such that there were 35 samples taken from each sex-culture group. The educational levels of the children were the first and second grades; the age range was 6–8 years old. The observations of black and Puerto Rican children were made in a lower-socioeconomic-class elementary school in the South Bronx area of New York City. The observations of the white children were taken at a middle-class elementary school just outside of New York City in Nassau County.

Procedure

The scales employed were adapted from the proxemic notational system devised by Hall (1963). Distance was measured in inches. As Jones (1971) has suggested, observations were recorded as though the interactants were of equal height and their noses were pointed straight forward, parallel with their shoulders. Axis was defined in terms of the degree to which the interactants' shoulders were turned toward or away from one another on an 8-point compass-face scale. That is, judgments were scored on a scale running from 0 to 8, corresponding to the points on a compass. For example, a "zero" position represented a direct face-to-face relationship. A "two" position represented a shoulder orientation forming a right angle, as though one person were parallel to a compass needle pointing due North and the person facing him were parallel to a compass needle pointing due East. A position in which the interactants stand side by side, facing out

[5] The predictions of the present study seem to contradict the finding of Willis (1966), that blacks stand farther apart than whites. However, his study was conducted with college students, and although it is not clear from his report, it would appear that the generalizability of his conclusions is limited to middle-class blacks. In addition, the validity of Willis' study must be questioned since it was conducted in a variety of unspecified field settings in such a manner that situational factors were not controlled.

in the same direction, would be scored "four." Observations were recorded to the nearest unit.

Observations of dyadic interaction were gathered in early fall 1969 during recess periods and lunch hours in the playgrounds of each school by two trained "teacher-judges." Steps were taken to insure against observer bias: The judges were not informed of the hypotheses, they observed children other than those in their own classes, and they were trained in the use of the measurement scale until their pretest scores were found to be highly reliable.

The three training sessions each consisted of a series of 20 observations by both judges on the same "subjects," children of the grade levels being studied. The success of the training sessions is evidenced by the fact that in the final training session, out of 20 observations, 18 were in perfect agreement between the two judges on both axis and distance scores; the remainder were very close. Although in the actual collection of data different judges were employed in each setting, the high reliability achieved during the training period and the similarity of the contexts in which observations were made would seem to rule out the possibility of consistent distortion of judgments in either playground situation.

To instruct the teacher judges in the utilization of criteria for selection of dyads, the first author accompanied each of the judges into the field for the first two observation periods. The teacher judges were instructed to select only same-sex, same-culture dyads engaged in verbal interaction without any physical objects or other persons obstructing the freedom of movement of the subjects. Other teachers were consulted if the subcultural identification of subjects was in doubt. The teacher judges were also instructed to record their observations of dyads at the first instant in time when they could ascertain that at least one of the interactants was verbalizing to the other and both interactants were relatively stationary.

RESULTS

Cultural Differences in Distance

An analysis of variance for distance scores (see Table 1) showed that there was a significant main effect for culture ($p < .001$). This finding is in line with Hypotheses I and II, which stated that white children would stand farther part than would black children and that white children would stand farther apart than would Puerto Rican children. In addition to these predicted results, a significant main effect was found for sex ($p < .05$), and a significant interaction effect was found between sex and culture ($p < .05$).

TABLE 1

ANALYSIS OF VARIANCE FOR DISTANCE SCORES

Source	*df*	*MS*	*F*
Sex (A)	1	80.476	6.00*
Culture (B)	2	1021.757	76.18**
A × B	2	61.062	4.55*
Error	204	13.413	

* $p < .05$.
** $p < .001$.

TABLE 2

MEAN DISTANCE SCORES OF SUBCULTURAL GROUPS BY SEX

Sex of interactants	Subculture			Cultures combined
	Puerto Rican	Black	White	
Male	5.257	5.628	13.514	8.133
Female	4.371	6.057	10.257	6.895
Sexes combined	4.814	5.843	11.886	

As can be seen in Table 2, the mean observed distances of the sex-culture groups are consistent with the first two hypotheses. The mean distances for the white subculture appear to be quite dissimilar from those of the black and Puerto Rican subcultures.

The significant interaction effect between sex and culture indicates that sex influenced cultural differences. Therefore, the appropriate test for the first two hypotheses of the study is to see if both males and females within the black and Puerto Rican subcultures differ significantly from both sexes within the white subculture. Duncan's multiple-range test was used to test for differences between the mean distance scores of the sex-culture groups. Table 3 summarizes the results of this test.

The application of Duncan's test shows that Hypotheses I and II concerning the nature of the cultural differences were confirmed. There were no significant differences *between* black and Puerto Rican subcultures among

TABLE 3

DUNCAN'S NEW MULTIPLE-RANGE TEST APPLIED TO THE DIFFERENCES BETWEEN SEX-CULTURE DISTANCE MEANS ($k = 6$)

Sex pair	Culture group		
	Puerto Rican	Black	White
Female–female	4.37_a	6.06_a	10.26_b
Male–male	5.26_a	5.63_a	13.52_a

Note.—Means that do not share the same subscript are significantly different ($p < .05$).

TABLE 4

MEANS, MEDIANS, AND STANDARD DEVIATIONS OF AXIS SCORES OF SUBCULTURAL GROUPS BY SEX

Sex of interactants	Subculture									Cultures combined		
	Puerto Rican			Black			White					
	M	*Mdn*	*SD*	*M*	*Mdn*	*SD*	*M*	*Mdn*	*SD*	*M*	*Mdn*	*SD*
Male	.629	.295	1.087	.629	.421	.873	.543	.229	.980	.610	.308	.976
Female	.657	.261	1.162	.914	.375	1.223	.657	.295	1.027	.743	.308	1.135
Sexes combined	.643	.278	1.117	.786	.397	1.062	.600	.261	.998	—	—	—

males or females. On the other hand, males and females within the white subculture did differ significantly from each of the black and Puerto Rican sex-culture groups. It should also be noted that Duncan's test showed a significant difference *between* sexes within the white subculture, but no significant difference between the sexes within either the black or the Puerto Rican subcultures. The implications of this latter set of relationships are examined below.

Sex and Cultural Differences in Axis

Hall's proxemic notational system for axis, employed in this study, was found to be a limited measurement instrument for the study of young children. The 8-point measurement scale did not allow for fine distinctions at the lower end of the scale in which most of the observations took place, as can be seen in Table 4. This tendency of the distribution to be skewed to the right suggested that the assumption of normality necessary for the use of the parametric F test could not be met in these data. Therefore, the nonparametric Kruskal-Wallis one-way analysis of variance, which utilizes rank-order scores, was chosen. Table 5 presents a summary of the 11 comparisons necessary to test the hypotheses concerning axis.

TABLE 5

AXIS SCORES: SUMMARY OF KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE VALUES FOR RANKED DATA

Comparison	*H* value	*n*
Overall	28.57**	210
Black (male–female)	.40	70
White (male–female)	.29	70
Puerto Rican (male–female)	.12	70
Black, Puerto Rican, and White (combining sex groups)	28.22**	210
Black–White	6.06*	140
Black–Puerto Rican	1.25	140
White–Puerto Rican	.01	140
Males (across cultures)	1.00	105
Females (across cultures)	.97	105
Male–Female (combining culture groups)	22.67**	210

* $p < .05$.
** $p < .001$.

Upon finding a significant overall difference between the six sex cultures ($H = 28.57$, $df = 5$, $p < .001$), comparisons were made between males and females within each of the three subcultures: Puerto Rican, black, and white. No significant difference was found *within* any culture, justifying the testing for a significant difference *between* the three subcultures combining sex groups within subcultures. A significant difference was obtained among Puerto Rican, black, and white children ($H = 28.22$, $df = 2$, $p < .001$), which then permitted individual tests to be made between each pairing of subcultures.

The comparison between black and white subcultures yielded a significant difference ($H = 6.06$, $df = 1$, $p < .05$), thereby confirming Hypothesis III, which predicted that there would be a difference between black and white children on axis orientation. Table 4 shows that the black children stood less directly than did the white children. However, there was no significant difference between the Puerto Rican and black subcultures in axis orientation, contrary to Hypothesis IV. As expected, there was no significant difference between Puerto Rican and white children.

Tests for differences were then performed among females across subcultures and among

males across subcultures, respectively. Finding no significant differences among females or among males, a comparison was made between males and females, ignoring culture. This final comparison did produce a significant difference between males and females ($H = 22.67$, $df = 1$, $p < .001$), confirming Hypothesis V predicting sex differences. An inspection of the means in Table 4 indicates that in each culture the mean female axis score is greater than the mean male axis score.

DISCUSSION

The data support the hypotheses that white children stand farther apart than do black or Puerto Rican children. This confirmation of the hypotheses supports Hall's contention that there are cross-subcultural proxemic differences. By demonstrating that differences in subcultures were found to occur as early as ages 6–8, support is given to Hall's reasoning that these "differences in the structuring of space between minority groups and the dominant white culture are basic [1966, p. 165]," since they are acquired early in life.

Two rival explanations for the differences between the cultural groups should be considered. First, since verbal behavior was not monitored in the study, the possibility is left open that the lower-class and middle-class children were involved in two separate kinds of interaction, which might be differentially related to proxemic behavior. However, the fact that all of the children were observed in settings that reinforce "play" activities reduces the likelihood of this sort of variation. The authors are presently involved in research designed to control such variables as topic of conversation. A second alternative explanation would be that the density of children varied from one playground to the other. Greater restriction on the space available for interaction in the black and Puerto Rican school presumably might account for closer interaction distances. Although there did appear to be somewhat less space per pupil in the ghetto playground, the difference was small. The children in both schools were able to move about in rather large areas. In addition, the judges were instructed to record only those interactions where freedom of movement was possible.

While axis scores between black and Puerto Rican groups were in the predicted direction ($.2 < p < .3$), no significant differences were found for either axis or distance scores between these subcultures. One possible explanation for this finding is that since the black and Puerto Rican children observed in the study attended the same school, they may have had considerable interaction with one another and become more nearly alike in proxemic behavior than would ordinarily be the case. Further research employing schools that have more homogeneous black or Puerto Rican populations is desirable in order to better assess whether children in these subcultures do differ. The results of the present study seem to reinforce the conclusion of a previous study of adults, that members of poverty subcultures tend to be rather similar to one another in spatial orientation behavior (cf. Jones, 1971).

A further implication of the study is that an "equilibrium level" of nonverbal behavior may exist, not just for individuals, as Argyle and Dean (1965) have postulated, but for cultures as well. While white children were found to stand at a greater distance during interaction in the present study, black and Puerto Rican children appeared to stand at a less direct angle. It could be that although some homogeneous *degree* of nonverbal expression prevails across cultures, the particular *mode* of expression varies from culture to culture.

Analysis of the distance data revealed two unpredicted results: a significant main effect of sex and a significant interaction of sex and culture. As can be observed from the mean distance scores (see Table 2), these effects are attributable primarily to the rather large differences between sexes in the white subculture (white males stood farther apart than white females) and the apparently negligible sex differences in the black and Puerto Rican subcultures. When viewed in light of the findings of Willis (1966), that adult males tend to stand farther apart than females, this outcome of the present study suggests the possibility that sex differences in proxemic orientation may be acquired at an earlier age among middle-class white children, perhaps because

of greater emphasis placed on appropriate sex-role behavior in their homes.

The finding that females were less direct than males appears to contradict the conclusion reached by Jones (1971), that men maintain a wider axis than women, although it may be that 6–8-year-old children have a different code from that of adults. It will be recalled, however, that the great majority of the axis scores fell in two categories, "zero" and "one," so that no fine discriminations could be made. As can be observed in Table 4, the median axis scores for males and females are equivalent. This suggests that conclusions drawn from the axis data should be regarded as highly tentative. It also shows that a more refined instrument than Hall's 8-point compass-face observational system is necessary for measurement of children's proxemic behavior. Jones has proposed the use of a 12-point scale, corresponding to the hours of a clock. This system could very well be further divided into hour and half-hour intervals, resulting in a more useful 24-point scale.

CONCLUSION

Taken together, the results of the study provide support for the widely held notion that subcultures tend to differ in proxemic behavior. Puerto Rican and black children were found to stand closer than middle-class white children, and there was some evidence that they also stood less directly. In addition, the data suggest that sex differences in interaction distance may vary from culture to culture, at least at the age level investigated. It should be noted that these results are subject to the interpretation that variation among the groups studied is rooted in social class rather than culture per se, since the lower-class black and Puerto Rican children were not significantly different from one another. The fact that the differences were found among young children, however, does suggest that distinct proxemic patterns may be basic to membership in minority groups or the dominant middle class within the American culture.

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(Received October 2, 1970)