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ABSTRACT

The purpose of the present study is to examine the relative importance of sex and race preference as a basis for the choice of playmates and working companions in integrated elementary school classrooms. Subjects were 242 third-grade children from 11 randomly chosen classrooms. Twenty-one per cent of the children were black. A roster-and-rating scale technique adapted from Roistacher was employed to collect data from the children on two sociometric questions: "How much do you like to play with this person at school?" and "How much do you like to work with this person at school?" Results indicated that sex had a considerable, consistent influence on the sociometric choices for work and play. Race was also a significant factor, but it was neither as strong nor as consistent as the sex influence. Also, the data provided support for the use of more than one sociometric choice criterion and suggested questions concerning the goals and techniques of integration. Implications for future research are presented. (SDH)

THE EFFECTS OF SEX AND RACE ON CHILDREN'S SOCIOMETRIC CHOICES FOR PLAY AND WORK

BY

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THESIS

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INTRODUCTION

While there has been much research recently concerning the influence of integration on academic achievement (e.g. Coleman, 1966; McPartland, 1968; St. John, 1971), little attention has been paid to peer preferences and classroom social structure in integrated settings. The purpose of the present study is to examine the relative importance of sex and race preference as a basis for the choice of playmates and working companions in integrated elementary school classrooms. While data were collected for third grade classes only, the results will be placed in a developmental perspective based on previous findings reported in the literature.

Two different types of sociometric techniques have been used to study the influence of race and sex on peer preferences: the traditional limited-choice method used in the majority of sociometric studies; and the more recent roster-and-rating scale questionnaire which is used in the present study. In the limited choice method the child is limited to a specific number of selections. With the roster-and-rating scale, selections are unlimited since each child gives a rating on a numerical scale to all the members of his group. Research employing each of these techniques will be presented separately.

In examining the research a number of issues will be considered: (a) the influence of minority group size relative to the size of the majority on sociometric choices; (b) grade differences in children's choice patterns; (c) the relative strength of sex and race preferences and (d) the effect of different choice criteria on children's selections.

Limited-Choice Sociometric Tests

The use of the soicometric test as a means of studying the social

structures of groups containing black and white children was reported by its originator, Jacob L. Moreno in his book Who Shall Survive? A New Approach to the Problem of Human Interrelations (1934). Moreno, in collaboration with Jennings, administered the sociometric test to children in kindergarten through eighth grade at a public school in Brooklyn, New York. The population of the school was 2% black. Each child was asked to choose two members of his class beside whom he would like to sit. Exact percentages were reported for the children's sex preferences. Race preferences were reported in sociograms and summary paragraphs. Attraction between the sexes was highest in kindergarten and first grade where about 26% of the choices made were cross-sex. The percentage dropped to 16.5 in second grade and continued to decline to its lowest point of 2.5% in fourth grade. Slight increases were evident in the fifth, sixth and seventh grades and by eighth grade the percentage of cross-sex choices had increased to 8.0%. While own-sex choices predominated by second grade, own-race preference did not begin to appear until the fourth grade. From that time on inter-racial choices continued to decrease through the eighth grade.

Criswell (1937) administered Moreno's form of the sociometric test to 950 boys and girls from grades kindergarten through eight in an integrated New York public school. The racial composition of the school was 75% black and 25% white. In support of Moreno's findings, Criswell reported, without presenting the data, that preference for one's own sex, which was evident by second grade, was much stronger than preference for one's own race. The data for race preference were presented. Separation into racial groups was absent until grade three, reached its highest point at grade five and continued through the eighth grade. The results also suggest that group preferences are affected by the percentage of minority members in a

classroom. White children, who were the minority in this sample, tended to show unusually high preference for other whites in the lower grades.

In a further investigation of the influence of minority group size on race and sex preferences, Criswell (1939) did a sociometric study of children in kindergarten through the eighth grade in three New York public schools. The populations of the schools were 74%, 47% and 26% black. The results in regard to sex preference showed that regardless of the size or race of the minority, own-sex preference increased to the point of almost complete separation by grade four and decreased slightly in grades seven and eight.

While there was more variability among classrooms in patterns of race preference, the results suggest that the size of the minority affected the children's sociometric choices. Preference for children of one's own race tended to increase with age, and there was evidence of a contrasting effect of minority size in the two sex groups. Among girls, the majority race group was less friendly to larger minorities than to smaller minorities. But boys rejected more strongly the smaller minorities.

The three studies presented thus far (Moreno, 1934; Criswell, 1937, 1939) deal with the issues of minority group size, grade differences in choice patterns and the relative influence of sex and race on sociometric choice. The studies are in agreement about the greater influence of own-sex preference on choice in the early elementary school years and about the increase of preference for one's own race with age beginning at third or fourth grade. Finally, it appears that when interest in the opposite sex develops children begin to seek out members of their own race as partners.

Other researchers have dealt with the issue of minority group size and have come to different conclusions about its influence on children's sociometric choices. Shaw (1973) used a sociometric instrument combined with observation to test the effects of interracial association on acceptance of other-group members. As part of his study he administered a sociometric test to all children in the fourth through sixth grades of an elementary school soon after forced integration had occurred. Each child was asked to name the three persons he most preferred to be with and the three persons he least preferred to be with in his quad (grade level). The sample contained 50 blacks and 183 whites. Results were not reported separately for each sex. The results in regard to racial preference showed that blacks and whites at all three grade levels chose members of the other race significantly less frequently than would be expected by chance.

Results of the observation portion of the study also provide evidence of racial separation. The observation data were collected after a year of integration in grades one through six of the same school. Two observers counted the number of cross-race and own-race interactions among pupils in each grade for ten minutes, once a week, for five weeks. The observation took place during a period which allowed for maximum choice in interaction. The results showed that at every grade level the percentage of black-white interactions was significantly below chance expectancy. In addition, an analysis of variance revealed a highly significant decrease across grade levels in percent of black-white interaction. Investigating further the decrease of cross-race interaction with grade level, Shaw found that the percentage of blacks in attendance increased across grade level

and that the percentage of blacks in attendance correlated -.65 with the percentage of black-white interactions. From these data Shaw inferred that the decrease in black-white interactions over time was a function of the size of the minority relative to the size of the majority rather than a function of grade level. As the size of the minority (black in this case) increased, the percentage of cross-race interactions decreased. Shaw does not explain, however, why the percentage of black minority increased from grades one through six.

With this finding Shaw challenges Criswell's (1937) interpretation that preference for one's own race varied with grade level. Using her sociometric data he calculated the correlation between the percentage minority and the percentage of cross-race choices in 28 classrooms. The minority in Criswell's classrooms was white and varied from 9-53%. The correlation of -.50 is consistent with Shaw's argument. It should be noted, however, that in one case he correlates observation data with percentage minority and in the other he uses sociometric data. But he does present an alternative interpretation of Criswell's data and demonstrates the importance of considering minority-majority group proprotions when comparing classrooms in which there is a wide range of difference in percentage minority.

The results of a study by Bartel, Bartel, and Grill (1973), while not specifically dealing with the issue of minority-majority group size, indicate that age differences can be found even when the percent minority is controlled. Bartel et al. administered a 16-item sociometric test to 160 children in kindergarten through grade four in integrated open classrooms. Each of the six classrooms contained children from more than one grade

level and the numbers of black and white children in each of the classrooms was approximately equal.

The sociometric questions were divided into four categories labeled Positive Intellectual (e.g. "Who do you think is the smartest child in this room?"), Positive Social (e.g. "If you were captain of a team, who would you choose first to be on your team?"), Negative Intellectual (e.g. "Which child in this room do you think would never get a first prize for good school work?") and Negative Social (e.g. "Who in this room would be the worst team captain?"). There were four questions in each category and the child was asked to give only one choice for each question.

Since data were presented for five grade levels and the minority-majority ratio was fairly consistent across classes, it is possible to look at the development of race preference from kindergarten through fourth grade in terms of Shaw's argument. If increase in own-race preference is a function of minority group size rather than grade level, the number of cross-race choices should remain the same in all classes since the percentage minority did not change.

The data do not support this assumption. The mean number of blacks chosen by both blacks and whites for positive intellectual questions decreased significantly across grade level indicating that the popularity of blacks for intellectual tasks goes down steadily after the first grade. The negative intellectual items also showed a developmental trend with both blacks and whites nominating an increasing number of blacks from grades kindergarten through four. In regard to the social questions, preference for the child's own race increased from kindergarten through

grade four with almost total racial polarization by fourth grade. These results are consistent with the findings of Moreno (1934) and Criswell (1937) and challenge Shaw's (1973) minority-majority group explanation of the increase in own-race preference with grade level.

Another study which employs multiple selection criteria was done by Jansen and Gallagher (1966). They examined the sociometric ratings of 100 economically disadvantaged but academically gifted children from grades four through six in an integrated school district. The classes ranged from 52-71% black. The children were asked to make five choices each for seating, working and playing companions. In general, the authors report that a substantial number of cross-race choices were made but that there was a lot of variability in choice patterns among the four classrooms. While Jansen and Gallagher state that there were no substantial differences in choices due to selection criteria, a closer examination of the percentages reported does indicate a difference. In three of the four classrooms, whites chose blacks more often to play with than to work with, indicating a tendency for blacks to be more popular as playing companions than as working companions. The tendency for blacks to be more popular to play with than to work with indicates that children may choose differently depending on the situation. The results of the study demonstrate that additional information about sociometric choices may be gained by using several different choice criteria.

Another approach to the issue of different selection criteria was used by Radke, Sutherland, and Rosenberg (1950), as a portion of their sociometric study of friendship and rejection patterns among black and white

children aged 7-13. The sample, which included 475 black and 48 white children, represented an entire school population from grades two through six. Radke et al. administered a limited-choice sociometric test in which the child was asked to choose and reject students from three different groups: class, school and community. In the classroom where whites were a minori y, most of their choices were of blacks. There was an age trend with younger white children (grades 2-3-4) giving 76% of their choices to blacks and older white children (grades 5-6) giving only 53%. When choosing from the school or from the community, however, white children showed a marked difference in choice patterns. When selecting children from other classrooms in the school only 8% of the younger whites and none of the older whites chose blacks. Their choices from the community never crossed racial lines. Black children, who made up 90% of the school population, tended strongly toward intra-racial choices in the classroom, the school and the community. Rejections by both groups tended to stay within each race with blacks rejecting mostly blacks and whites rejecting all white children. Perhaps this has to do with the degree of acquaintance across races. If little social interaction takes place the children may not know enough about other-race members to reject them.

This study presents data to support the increase of preference for one's own race with age demonstrated by Moreno (1934), Criswell (1937) and Bartel et al. (1973). It also introduces the technique of varying sociometric choice criteria by social setting instead of activity.

Roster-and-Rating Scale Sociometric Questionnaires

In addition to the limited-choice sociometric tests, different types

of rating scales have been used to measure academic and social acceptance in integrated classrooms. Carter, Spero, Benson, and DeTine (1973) administered the Syracuse Scales for Human Relations to 366 seventh and eighth graders from an integrated Buffalo school. The children were in 14 classes each of which was approximately one-third black. Using the Syracuse Scales the student rates his classmates by comparing them with all other people in his social realm. Ten acceptance scores were calculated for each child. Five scores were academic acceptance from white males, white females, black males, black females and the total sample. The other five scores were social acceptance from each of these five groups. An analysis of variance performed on the data indicated that whites consistently preferred their own race with regard to both academic and social need satisfaction. Blacks, on the other hand, showed no preference for their own race for academic needs but expressed a preference for other blacks for social need satisfaction. In addition, the total academic acceptance of blacks was lower than whites and own-sex preference was found to be stronger than own-race preference for both blacks and whites. The low popularity of blacks as providers of academic need satisfaction for both blacks and whites is consistent with Bartel et al.'s (1973) evidence of blacks being chosen more often for negative than for positive intellectual questions and with Jansen and Gallagher's (1966) finding that whites tended to choose more blacks as playing than as working companions.

The Ohio Social Acceptance Scale is another roster-and-rating technique that has been used to study cross-race and cross-sex choices (Raths and Schweickart, 1946). The scale consists of six paragraphs, each

descriptive of a different degree of acceptance. The paragraphs range from the first which describes an intimate friend to the sixth which describes a person who is disliked. Each child is given a class roster and is asked to assign a number on the one-to-six scale to each of his or her classmates. The child's status score equals the mean of the ratings he receives.

Raths and Schweickart (1946) used the scale to study acceptance in four integrated fifth and sixth grade classrooms. The racial composition of the classes ranged from 43-62% white. Social acceptance scores were calculated separately for males and females since cross-sex ratings were low. The results indicated that while white males showed high social acceptance of black males, acceptance of their own group was higher. White females followed the same pattern. Similarly, while black males and females showed social acceptance of whites, preference for their own group was higher. In many individual cases choices crossed race and sex lines but overall, own-race and own-sex ratings were higher. These results, using a rating scale, generally parallel the findings of Moreno (1934), Criswell (1937) and Jansen and Gallagher (1966), who used the limited-choice sociometric method.

The Ohio Social Acceptance Scale is different from the limited-choice sociometric questionnaire since exact reference to a specific activity is not required (Lorber, 1973). Thus the scale provides a measure of the degree of general social acceptability instead of preference based on a single criterion. Research has been done, however, indicating that the Ohio Social Acceptance Scale can be applied in situations where the limited choice sociometric test has traditionally been used. Young (1947) compared

the results of five measures of social status which were administered to 41 seventh-grade children. Both rating scale and limited-choice methods were included in his analyses. For the limited-choice sociometric test seven different selection criteria were used. The scores on the Ohio Social Acceptance Scale showed a relationship to some but not to all of the scores on the sociometric tests. Overall, the correlation of .90 between the Ohio Social Acceptance Scale and the sociometric array of seven criteria indicated a close relationship between the two measures. Similarly, Justman and Wrightstone (1951) reported relatively high correlations for these two techniques and concluded that they are interchangeable.

The close relationship demonstrated between these two sociometric measures raises the issue of which technique should be used. While the studies done by Young (1947) and Justman and Wrightstone (1951) indicate that the two methods are equivalent, the roster-and-rating scale questionnaire appears to have three general advantages: first, the roster decreases the likelihood of a person being left out because he was momentarily forgotten; second, the scale provides a more accurate representation of the individual's preferences because several persons can receive the same numerical rating on the scale and third, since each child is rated by all of his classmates this technique provides a better indication of each child's acceptance by all the group members.

Description of the Present Study

The present study investigated the effects of race and sex on third grade children's work and play choices. A roster-and-rating scale technique adapted from Roistacher (1972, 1974) was used. Roistacher gave eighth

grade junior high school boys a roster naming all the eighth graders in the school. They were asked to rate each person on a scale of one through seven. In the present study this scale was adapted for use at the third grade level by using five numbers instead of seven and placing faces above each number. The faces ranged from a broad smile to a deep frown and served to communicate the meaning of the numbers on the scale (Appendix A). In an attempt to get more information about the criteria children use in selecting companions two sociometric questions were asked: "How much do you like to play with this person at school?" and "How much do you like to work with this person at school?"

The issues of particular interest in this study are the relative strength of race and sex effects on children's sociometric choices, and the difference in the race and sex effects on the play and work items. Based on the literature a number of predictions can be made: (a) children will choose own-sex classmates more often than other-sex classmates; (b) children will choose own-race classmates more often than other-race classmates; (c) own-sex preference will be stronger than own-race preference and (d) the choice patterns for the work and play items will differ with black children being more popular for play than for work.

METHOD

Subjects

One third grade classroom was randomly chosen from each of the twelve elementary schools in a midwest school district. Third grade was chosen because children in this grade had been in integrated classrooms throughout their public schooling. The test was given in May, one month before the end of the school year. While all children in each classroom gave sociometric ratings only blacks and whites were included in the analyses. The data from one Oriental and one Indian child were excluded. Also excluded were the data for 27 children, 23 whites and 4 blacks, who were absent when the test was given. Finally, one classroom of 17 students was eliminated because the classroom contained first and second grade children as well as third grade children. The resulting N was 242, 21% of whom were black. There were 101 white males, 90 white females, 21 black males and 30 black females.

Materials

Two five-point rating scales were used, each accompanied by an alphabetical roster including the names of all the class members. The sociometric question, "How much do you like to play with this person at school?" was typed on the first scale. The question on the second scale was, "How much do you like to work with this person at school?" (Appendix A).

Procedure

The two sociometric questions were administered by the experimenter, a twenty-two year old female, in each classroom. The children were given

the following explanation: "We are interested in some information about your class. We would like to find out how well you know each other, and we would like to know who you like to work with and who you like to play with. You will be able to tell us who your friends are in this classroom. We won't be doing this out loud in a group, but you'll let us know your choices by marking them down on some papers I will give you. You can be honest because I won't show anyone else in the class your answers. I will be the only one to see them."

After this introduction the play scale was distributed ("How much do you like to play with this person at school?"). The use and meaning of the five-point scale was explained using examples of food (e.g., How much do you like ice cream, spinach, etc.?). When the children appeared to understand the meaning of all the points on the scale, the class rosters were distributed. After everyone finished writing his name on top of the first page and crossing out his own name on the list the meaning of the play situation was discussed. Examples included recess, free time before class and time spent in the playground. The experimenter then did two examples, using fictitious names, together with the class. The examples were typed on the top of the first page. The children were then instructed to mark each classmate's name in a similar manner, circling only one number for each name. When everyone was finished the scales and rosters were collected and new scales and rosters were distributed for the work question. The distinction between work and play was discussed with the aid of the teacher. Examples of work situations included doing math, science, reading or going to the library during school hours.

RESULTS

The results of the analyses of the sociometric data will be presented separately for the two dependent variables, play and work, along with a comparison of the responses to the two questions. The overall correlation between the play and work ratings received by each of the children was .75. Correlations within individual classrooms ranged from .66 to .83.

Average Liking

The mean scores received by each race and sex group for play and work are presented in Tables 1 through 6. The total sample was used to calculate these means: 122 males and 120 females including 191 whites and 51 blacks.

Play. The mean scores received by each race and sex group on the play variable are presented in Tables 1-3. Table 1 contains the mean scores by sex. Own-sex ratings were higher than cross-sex ratings for both males and females.

Table 1

Mean Scores Received by Males and Females in the Total Sample for Play

	Giver	
Receiver	Male	Female
Male	3.95	2.26
Female	2.08	3.78

The mean scores by race are presented in Table 2. It can be seen that own-race ratings were higher than cross-race ratings but that the differences were not as large as those for the sex factor.

Table 2

Mean Scores Received by Blacks and Whites in the Total Sample for Play

	Giver	
Receiver	White	Black
White	2.96	3.17
Black	2.86	3.58

The breakdown of means by individual race-sex groups is contained in Table 3. The table reveals a number of trends. First, black children gave

Table 3

Mean Scores Received by Each Race-Sex Group in the Total Sample for Play

	Giver			
Receiver	White Male	White Female	Black Male	Black Female
White Male	3.84	2.15	4.04	2.53
White Female	2.09	3.77	2.32	3.79
Black Male	3.95	1.99	4.39	3.14
Black Female	1.89	3.68	2.72	4.04

higher scores to all children than white children did. Second, with the exception of white males children gave highest scores to their own race-sex group. Third, children gave higher scores to members of their own sex regardless of race. For example, white females gave a higher rating to black females than they gave to white males. This finding is consistent

with the studies by Moreno (1934) and iswell (1939) who found sex cleavage stronger than race cleavage in third grade.

Work. The mean scores received by each race and sex group on the work variable are presented in Tables 4-6. In general, the work ratings were lower than the ratings for play. Presumably, children would rather play than work with other children. Otherwise, the means follow the same pattern as the means for the play variable.

The mean scores by sex for the work variable are contained in Table 4. Own-sex ratings were higher than cross-sex ratings for males and females.

Table 4

Mean Scores Received by Males and Females in the Total Sample for Work

	Giver	
Receiver	Male	Female
Male	3.52	2.03
Female	2.00	3.47

Own-race ratings, presented in Table 5, were higher than cross-race ratings but the differences were not as large as those for the sex factor.

Table 6 presents the mean scores for each race-sex group. Without exception, children gave highest ratings to their own race-sex group and they gave higher scores to own-sex members regardless of race. Finally, black children gave higher ratings than white children did.

Table 5

Mean Scores Received by Blacks and Whites in the Total Sample for Work

	Giver	
Receiver	White	Black
White	2.74	3.06
Black	2.51	3.36

Table 6

Mean Scores Received by Each Race-Sex Group in the Total Sample for Work

	Giver			
Receiver	White Male	White Female	Black Male	Black Female
White Male	3.52	1.95	3.93	2.48
White Female	2.02	3.46	2.31	3.55
Black Male	3.27	1.75	4.24	2.68
Black Female	1.77	3.30	2.64	3.91

Statistical Analyses

To determine the effects of race and sex on children's sociometric choices, three analyses of variance were performed for each dependent variable. The first analysis was based on the total sample. Subsequent analyses were performed separately for males and females.

Total Sample. A four factor analysis of variance (2 X 2 X 2 X 2) of the total sample was performed. The factors were: race of giver, sex of giver, race of receiver and sex of receiver. Race of giver and

sex of giver were between-subjects factors while race and sex of receiver were within-subjects factors. One dependent variable is the average score each child gave to the members of four race-sex groups (white male, white female, black male, black female) on the sociometric rating scale for play. Another dependent variable is the average score each child gave to the members of the four race-sex groups for work.

The SOUPAC BALANOVA program was used to analyze the data. Because the program does not handle certain types of missing data only nine of the eleven classes could be included in the analyses. One class was eliminated because it contained no black males and another class was eliminated because it had no black females. The resulting sample included 202 children for play and 200 for work. The exact means used are reported in Appendices B and C. These differ slightly from those reported in Tables 1-6 but they follow the same trend.

Play. There were 82 white males, 76 white females, 17 black males and 27 black females included in the analysis of variance for the play variable. The results are presented in Appendix D. Significant results are summarized in Table 7. The sex of giver by sex of receiver interaction was highly significant with own-sex ratings being consistently higher than cross-sex ratings. Figure 1 depicts this interaction. As the figure shows, the interaction was very strong. Males gave very high scores to other males and very low scores to females; females gave very high scores to other females and very low scores to males.

The race of giver by race of receiver interaction was also statistically significant with own-race ratings being higher than cross-race

ratings. Figure 2 portrays this interaction. While children in both groups gave higher ratings to members of their own race the differences are much smaller than the differences between own-sex and cross-sex scores.

Table 7

Significant Results of the Analysis of Variance of the Total Sample for Play (df = 1,198)

Factor	F
Sex of Giver X Sex of Receiver	283.43*
Race of Giver X Race of Receiver	10.56*
Race of Giver	18.43*
Sex of Receiver	7.63**
Race of Receiver X Sex of Receiver	7.60**

*$p < .001$

**$p < .01$

A comparison of the F ratio for these two interactions clearly demonstrates the stronger influence of sex on sociometric choice. The F ratio for the sex of giver by sex of receiver interaction was 283.43 and the F for the race of giver by race of receiver interaction was only 10.56.

Other significant results were that blacks gave higher scores to everyone than whites did (blacks = 3.35, whites = 2.90) and males received higher scores than females (males = 3.26, females = 2.99). The significant interaction of race of receiver with sex of receiver indicates that black males were more popular than white males but white females were more popular than black females (black male = 3.39, white male = 3.13; white female = 3.02, black female = 2.97).

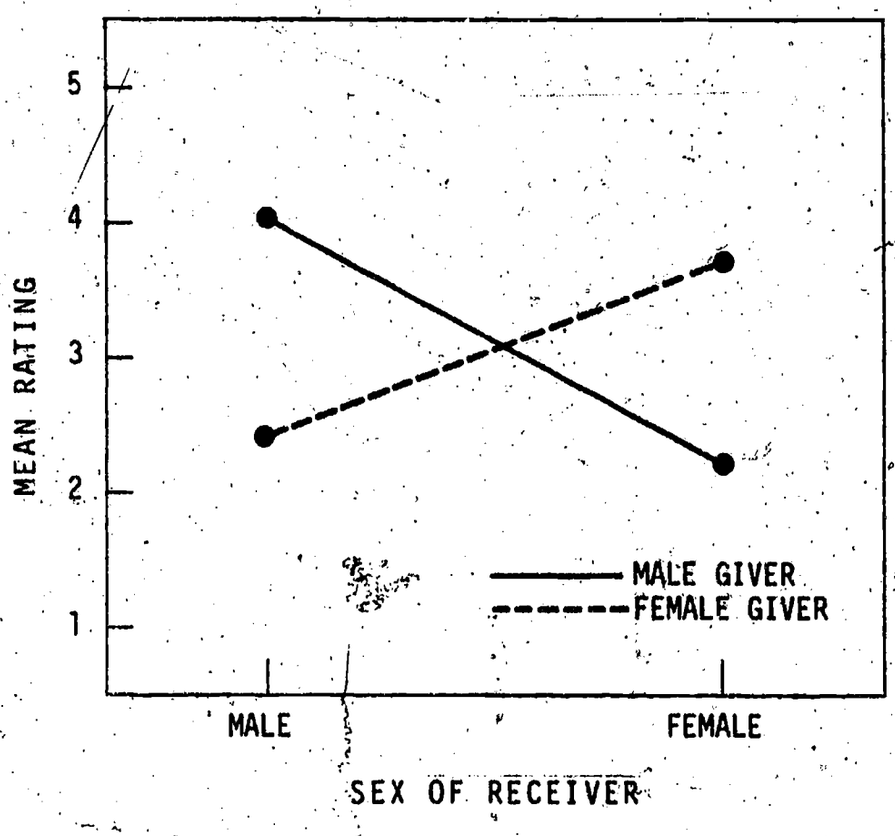


Figure 1. The Interaction of Sex of Giver with Sex of Receiver on the Play Variable.

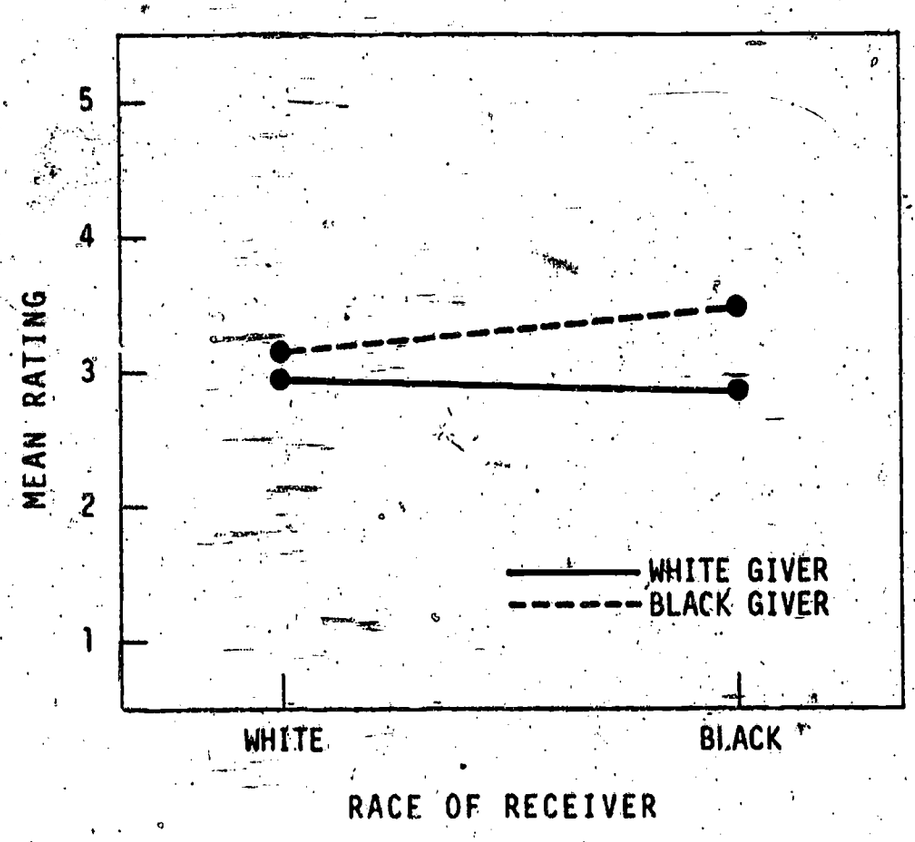


Figure 2. The Interaction of Race of Giver with Race of Receiver on the Play Variable.

Work. There were 82 white males, 75 white females, 17 black males and 26 black females included in the analysis of variance for the work variable. The results are presented in Appendix E. Significant results are summarized in Table 8. The overall results for the work variable are similar to those for the play variable although fewer factors reached statistical significance for work. The sex of giver by sex of receiver interaction was highly significant with own-sex ratings being higher than

Table 8

Significant Results of the Analysis of Variance of the Total Sample for Work (df = 1,196)

Factor	F
Sex of Giver X Sex of Receiver	204.12*
Race of Giver X Race of Receiver	13.47*
Race of Giver	22.79*

*$p < .001$

cross-sex ratings. Figure 3 depicts this interaction. The figure shows that the interaction was very strong. The children gave very high scores to members of their own sex and very low scores to members of the other sex.

The race of giver by race of receiver interaction was also statistically significant but smaller. Own-race ratings were higher than cross-race ratings although the differences were not as great as the differences for the sex factor. This interaction, depicted in Figure 4, was weaker than the interaction by sex. The F ratios for these two interactions demonstrate the greater importance of sex over race in choosing working

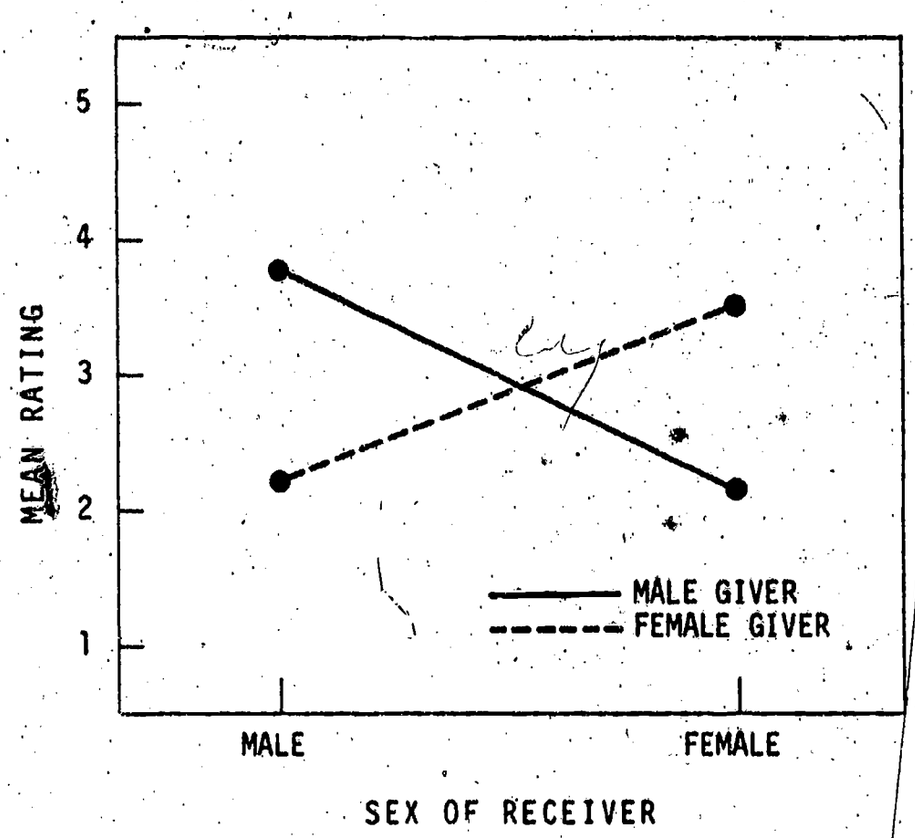


Figure 3. The Interaction of Sex of Giver with Sex of Receiver on the Work Variable.

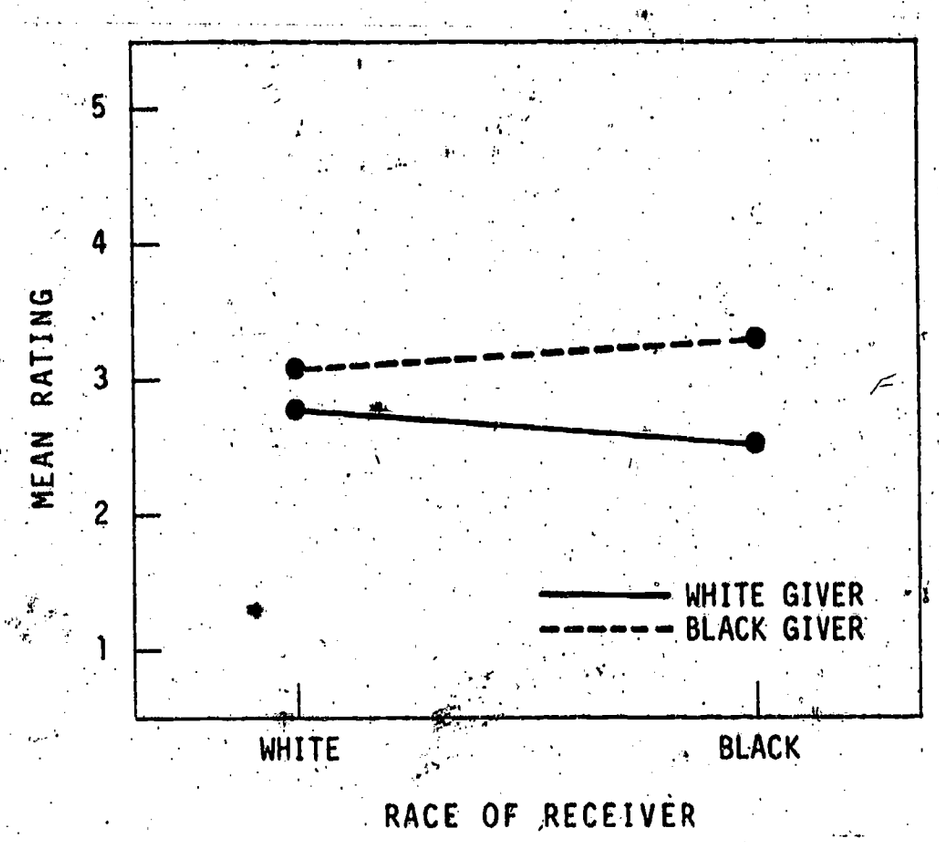


Figure 4. The Interaction of Race of Giver with Race of Receiver on the Work Variable.

companions. The F for the sex interaction was 204.12 while the F for the race interaction was only 13.47.

Finally, blacks again gave significantly higher scores to everyone than whites did (blacks = 3.21, whites = 2.64).

Male Sample. Since sex had such a strong influence on choice and previous researchers have analyzed sociometric choices separately for each sex, analyses of variance were performed separately for males and females. Tables 9-12 present the results of the analyses for the male sample on the two dependent variables. One class was eliminated because it contained no black males. The resulting sample included 108 males for play and 109 males for work.

Play. There were 89 white males and 19 black males included in the analysis of variance (Race of Giver X Race of Receiver) for males on the play variable. The results are contained in Table 9. None of the

Table 9

Analysis of Variance of the
Male Sample for Play
(df = 1,106)

Factor	F
Race of Giver X Race of Receiver	0.91
Race of Giver	2.92
Race of Receiver	3.16

factors in the analysis reached statistical significance. An examination of the means presented in Table 10 indicates that blacks gave a somewhat higher score to blacks than they gave to whites but whites gave a slightly

higher score to blacks than they gave to other whites. For males, then, race was not an important factor in the choice of playmates.

Table 10

Mean Scores for the Analysis of Variance of the Male Sample on Play

Giver-Receiver	Mean
Whites-Whites	3.81
Whites-Blacks	3.95
Blacks-Whites	4.00
Blacks-Blacks	4.39

Work. There were 90 white males and 19 black males included in the analysis of variance (Race of Giver X Race of Receiver) for males on the work variable The results are contained in Table 11. The race of

Table 11

Analysis of Variance of the Male Sample for Work (df = 1,107)

Factor	F
Race of Giver X Race of Receiver	4.25***
Race of Giver	9.25**
Race of Receiver	1.25

** $p < .01$

*** $p < .05$

giver by race of receiver interaction was significant. As the means presented in Table 12 show, whites gave higher scores to other whites than they gave to blacks. Similarly, blacks gave higher scores to other blacks than they gave to whites. In addition, black males gave significantly higher ratings than white males did (blacks = 4.06, whites = 3.38).

Table 12

Mean Scores for the Analysis of Variance of the Male Sample on Work

Giver-Receiver	Mean
Whites-Whites	3.49
Whites-Blacks	3.27
Blacks-Whites	3.87
Blacks-Blacks	4.24

To summarize, race was not a significant factor in males' choice of playmates but it did influence their choice of working companions.

Female Sample. Tables 13-16 present the results of the analyses of variance for the female sample on the two dependent variables. One class was eliminated because it contained no black females. The resulting sample included 104 females for play and 103 females for work.

Play. There were 76 white females and 28 black females included in the analysis of variance (Race of Giver X Race of Receiver) for females on the play variable. The results are contained in Table 13. The race of giver by race of receiver interaction was significant. The mean scores given by blacks and whites are presented in Table 14. The table shows that whites gave a higher score to whites than they gave to blacks.

Similarly, blacks gave higher scores to other blacks than they gave to whites.

In addition, black females gave significantly higher ratings than white females did (blacks = 2.83, whites = 2.09).

Table 13

Analysis of Variance of the Female Sample for Play (df = 1,102)

Factor	F
Race of Giver X Race of Receiver	12.30*
Race of Giver	12.70*
Race of Receiver	0.71

* $p < .01$

Table 14

Mean Scores for the Analysis of Variance of the Female Sample on Play

Giver-Receiver	Mean
Whites-Whites	2.15
Whites-Blacks	2.03
Blacks-Whites	2.53
Blacks-Blacks	3.14

Work. There were 76 white females and 27 black females included in the analysis of variance (Race of Giver by Race of Receiver) for females on the work variable. The results are contained in Table 15. Race of giver

was the only factor which reached statistical significance in the analysis. Blacks again gave higher scores than whites did (blacks = 2.59, whites = 1.88). The means presented in Table 16 indicate that whites gave a slightly higher score to other whites than they gave to blacks. Similarly, blacks gave a slightly higher score to other blacks than they gave to whites. But these trends were not statistically significant. For females, then, race was not an important factor in their choice of working partners, but was in their choice of playing partners.

Table 15

Analysis of Variance of the Female Sample for Work (df = 1,101)

Factor	F
Race of Giver X Race of Receiver	1.98
Race of Giver	12.76*
Race of Receiver	0.36

*$p < .001$

Table 16

Mean Scores for the Analysis of Variance of the Female Sample on Work

Giver-Receiver	Mean
Whites-Whites	1.94
Whites-Blacks	1.81
Blacks-Whites	2.51
Blacks-Blacks	2.68

The significant effect of race of giver by race of receiver for the total sample on both dependent variables appears to have been contributed to differently by males and females. On the play variable the males account for most of the interaction while on the work variable females account for most of the interaction.

Individual Classroom Variation

The size and direction of the race and sex effects varied across individual classrooms. Figures 5 through 8 present individual classroom means for both dependent variables. Data on all eleven classrooms are presented. The number of students in each class and the exact means depicted in the graphs are reported in Appendices F through P. The results should be interpreted with caution because of the extremely small number of black children in many of the classes.

Play. Figure 5 presents a comparison of own-sex and cross-sex means across individual classrooms on the play variable. Own-sex means include males rating males and females rating females. Cross-sex means include males rating females and females rating males. The figure shows that own-sex ratings were higher than cross-sex ratings in all of the classrooms.

Figure 6 presents a comparison of own-race and cross-race ratings across individual classrooms for play. Own-race means include whites rating whites and blacks rating blacks. Cross-race means include whites rating blacks and blacks rating whites. Own-race ratings were higher than cross-race ratings in only six of the eleven classrooms. These figures demonstrate that the influence of the race factor on the ratings was less consistent across classes, as well as weaker, than the influence of sex.

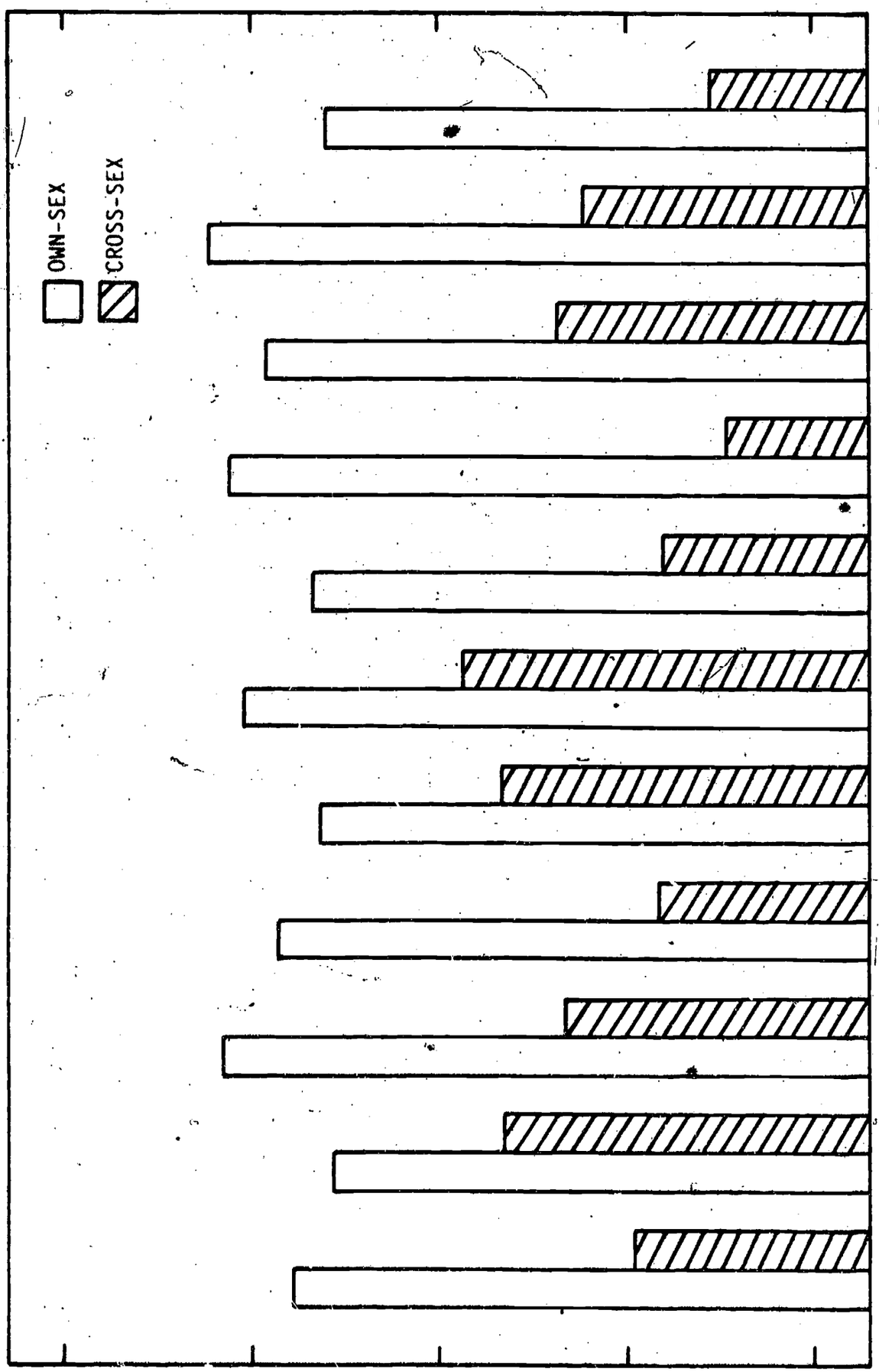


Figure 5. A comparison of own-sex and cross-sex ratings for play.

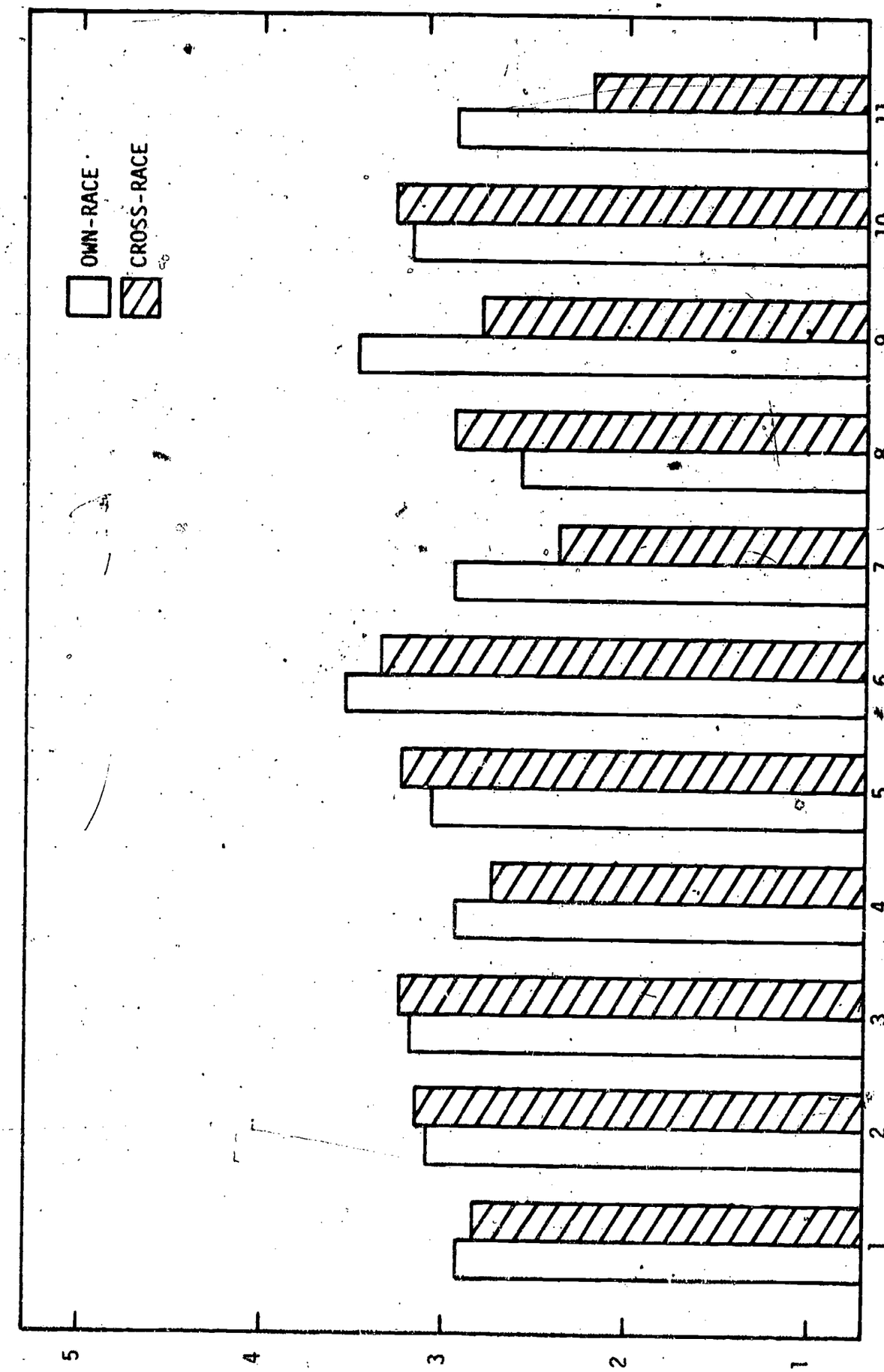


Figure 6. A comparison of own-race and cross-race ratings for play.

Work. Figure 7 presents a comparison of own-sex and cross-sex means across individual classrooms on the work variable. The results for the sex factor for work are similar to the results for play: own-sex scores were higher than cross-sex scores in all classes.

Figure 8 presents a comparison of own-race and cross-race ratings across individual classrooms for work. Own-race ratings were higher than cross-race ratings in nine of the 11 classrooms indicating that the influence of the race factor was more consistent on the work than on the play variable.

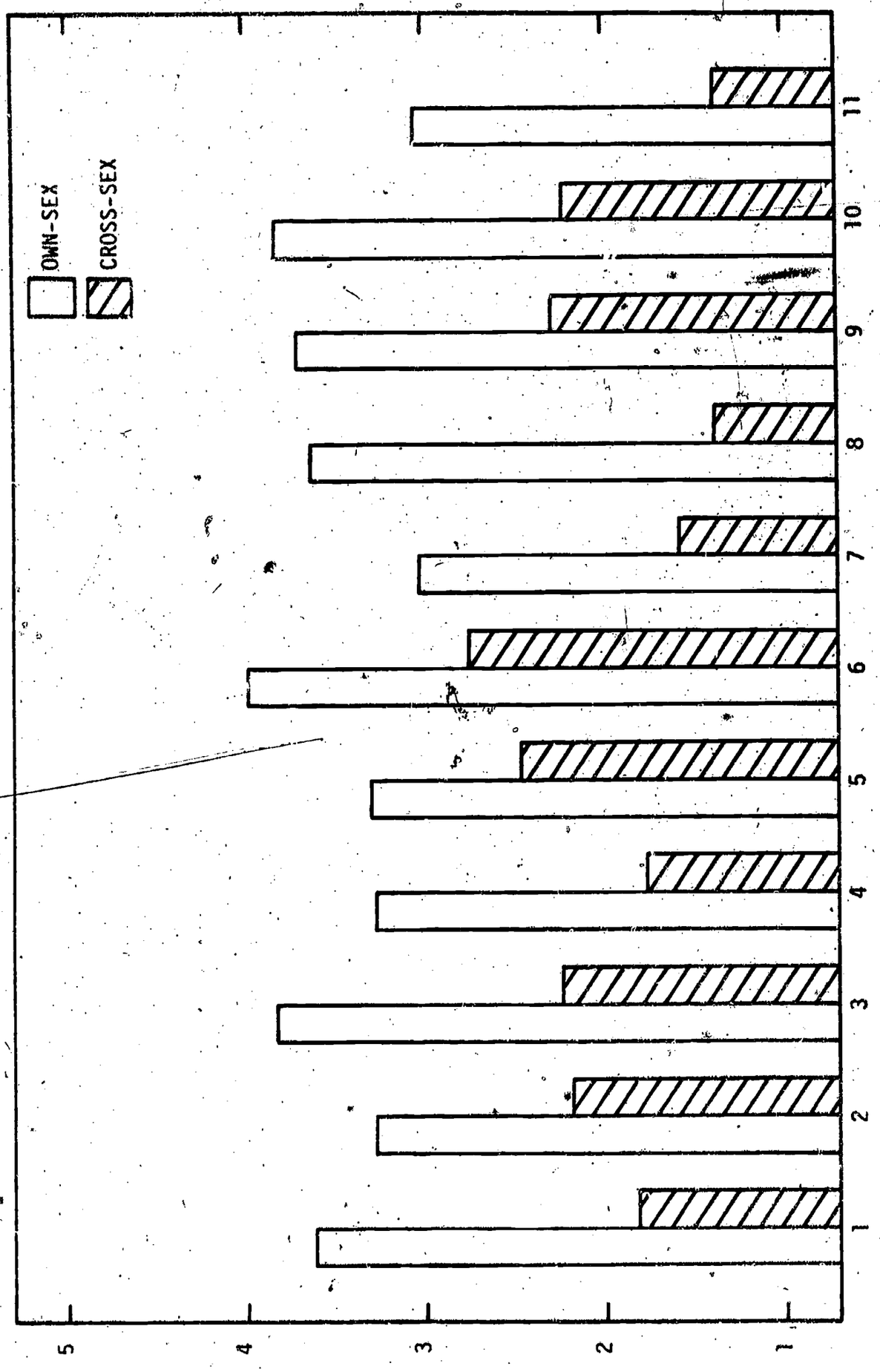


Figure 7. A comparison of own-sex and cross-sex ratings for work.

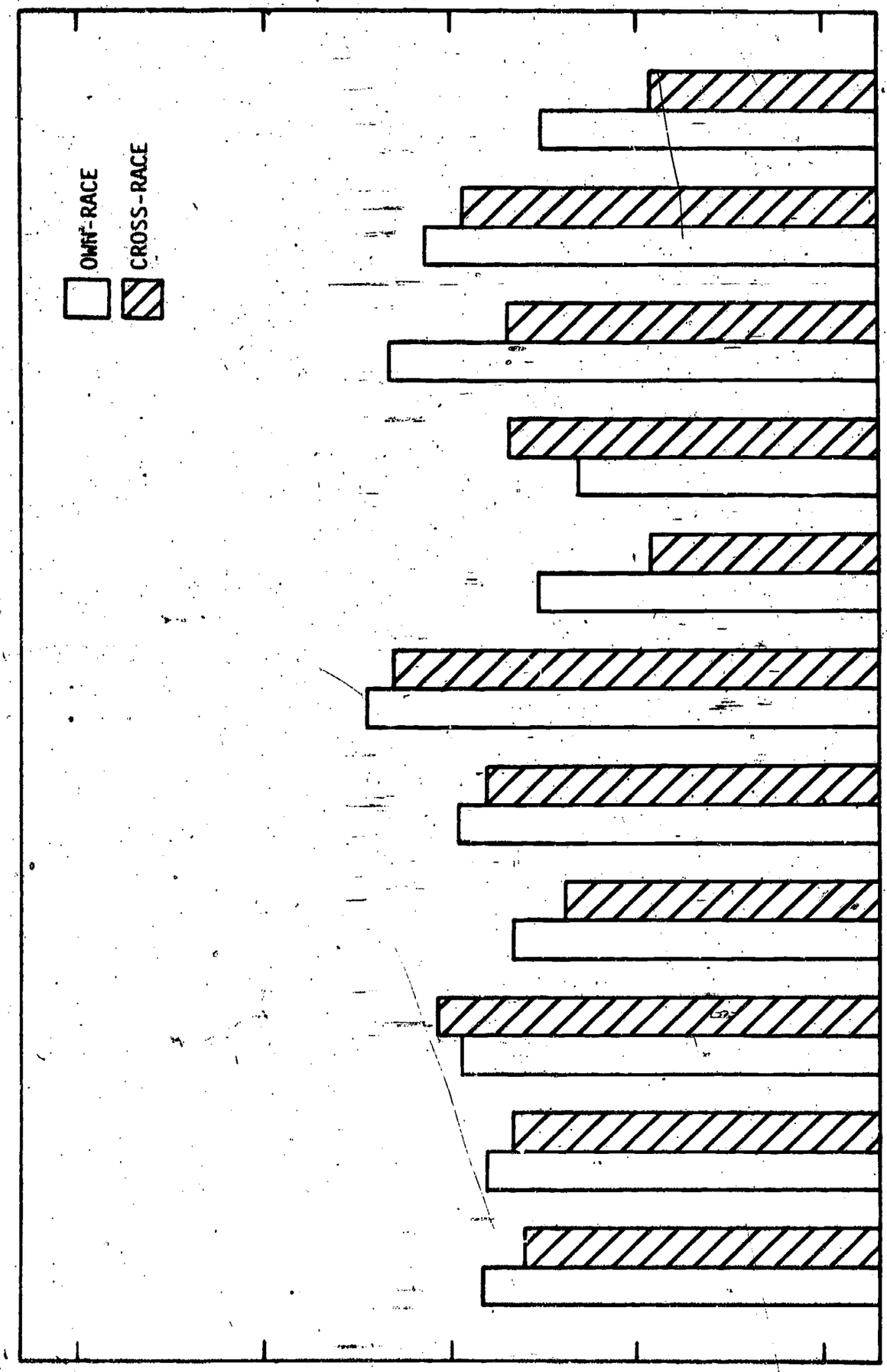


Figure 8. A comparison of own-race and cross-race ratings for work.

DISCUSSION

Relative Influence of Race and Sex

The results of this study indicate that the influence of sex on sociometric choices was considerable. The highly significant F ratios for the sex of giver by sex of receiver interaction in the analyses of variance for the total sample clearly demonstrate the strength of the effect. Furthermore, own-sex ratings were higher than cross-sex ratings in all eleven classrooms for both work and play. This demonstrates the consistency as well as the strength of the influence of sex on children's sociometric choices.

The analyses of variance for the total sample showed that race was also a significant factor in the sociometric choices for work and play. But the data indicate that the influence of race was neither as strong nor as consistent as the sex influence. The results of the by-sex analyses of the race factor suggest that it is of different importance to males and females. For males, race was a criterion in choosing working companions and not in choosing playmates. For females the opposite was true. They used race as a criterion only in the choice of playmates. In the analyses of variance for the total sample males and females apparently contributed to the race effect differently on work and play. The result was a significant race effect for both dependent variables.

The individual classroom data demonstrate the inconsistency of race as a factor in determining sociometric choice. Own-race ratings were higher than cross-race ratings only in about half of the classrooms for play and in nine of the eleven classrooms for work. The consistency of race as an influence on choice did not match that of sex for either dependent variable.

In addition, a ranking of the means by race-sex groups indicates that when a child is choosing a playmate or a working partner, he will choose someone of a different race but of his own sex before someone who is of his own race but not his own sex.

Finally, it is interesting to note the different patterns black and white children showed as raters. In general, black children gave higher scores to everyone in the class than white children did. Perhaps they like other children more or have a different concept of the rating scale.

Use of More than One Criterion

The data provide substantial support for the use of more than one sociometric choice criterion. The correlation between choices for the two questions was .75 indicating a high relationship between the two measures. Still, there is evidence that children used the two scales differently. It appears, for example, that race is of different importance to males and females in the selection of playmates and working companions. For males race was a stronger determinant on work than on play. For females race was a stronger determinant on play than on work choices.

Examination of individual classroom data also suggests that children are using the play and work criteria differently. Own-race ratings were higher than cross-race ratings in more classrooms for work than for play. A closer examination of the cross-race ratings indicates that it is the white children who tended to give lower ratings to the black children for work. This is consistent with research by Carter et al. (1973) who reported low popularity of blacks for academic need satisfaction of both races; by Jansen and Gallagher (1966) whose results indicated lower popularity of

blacks as working companions; and, by Bartel et al. (1973) who found that black children were chosen more often for negative intellectual questions than for positive ones. One possible explanation of these findings is that peers' academic achievement level is influencing the childrens' judgement on the work question. Perhaps black children were less popular for work because they were not as academically skilled as the white children. Indeed, school-administered achievement test data indicate that black children in the school system are approximately one-half grade-equivalent unit behind in reading and mathematics.

Sociometric Findings and Integration

The results of this study raise questions concerning the goals and techniques of integration. While the race effect was relatively small, the children in this study did show preference for their own race despite having been in integrated classrooms throughout their school career. If the goal of integration is to promote inter-racial acceptance and tolerance in the school and in the community, special programs in addition to daily association with other-race members appear to be needed. The finding that the children did differentiate between playmates and working companions, however, is encouraging. It suggests that they are looking at each other as individuals with certain sets of skills, rather than as blacks or whites. It also suggests that improving the academic skills of black children would increase cross-race acceptance.

Future Research

The literature suggests that as children grow older race becomes a more important consideration in their choice of associates. Fifth grade

appears to be the point at which preference for one's own race will be strongest. The children in the present study could be tested again in the fifth grade. From this we could learn whether the race effect becomes stronger as suggested by the literature, whether it remains the same, or whether it disappears entirely.

Several different measures of peer preferences and inter-racial social interaction could be incorporated into this study: (a) the addition of a third sociometric criterion concerning peer preferences outside of the classroom; (b) direct observation of the children in work and play situations at school; and (c) an attitude questionnaire which reflects the teacher's feelings about race relations. The results of this study would answer a number of questions about the influence of race on children's peer preferences: (a) Do cross-race choices extend outside the classroom?; (b) Do children interact with other-race members as much as they say they like to?; (c) Is teacher attitude one classroom factor which explains some of the variations in race preferences which were found; and finally (d) Does own-race preference increase with grade-level among children who have spent their elementary school years in integrated schools?

The results of this study would also identify areas where improvement in inter-racial associations is needed. For example, it may be found that children say that they like to play with other-race members but in fact, rarely do so. In this case a program designed to increase opportunity for positive social interaction between children of both races could be implemented. A similar program could be developed to promote an increase in inter-racial associations outside of the classroom.

In summary, a follow-up study is recommended as a means of measuring change in race and sex preferences and in an attempt to identify factors which influence childrens' race preferences.

LIST OF REFERENCES

Bartel, H. W., Bartel, N. R., & Grill, J. J. A sociometric view of some integrated open classrooms. Journal of Social Issues, 1973, 29, 159-173.

Carter, D. E., Spero, J., Benson, F. W., & DeTine, S. A study of peer acceptance and related variables in an integrated junior high school. Paper presented at the 1973 convention of the American Psychological Association.

Coleman, J. S. et al. Equality of educational opportunity. Washington, D. C.: United States Department of Health, Education and Welfare, 1966.

Criswell, J. H. Racial cleavage in negro-white groups. Sociometry, 1937, 1, 81-89.

Criswell, J. H. A sociometric study of race cleavage in the classroom. Archives of Psychology, 1939, No. 235, 1-82.

Jansen, V. G., & Gallagher, J. J. The social choices of students in racially integrated classes for the culturally disadvantaged talented. Exceptional Children, 1966, 33, 221-226.

Justman, J., & Wrightstone, J. W. A comparison of three methods of measuring pupil status in the classroom. Educational and Psychological Measurement, 1951, 11, 362-367.

Lorber, N. M. Measuring the character of children's peer relations using the Ohio Social Acceptance Scale. California Journal of Educational Research, 1973, 24, 71-77.

McPartland, J. The relative influence of schools and of classroom desegregation on the academic achievement of ninth grade Negro students. Journal of Social Issues, 1968, 25, 93-102.

Moreno, J. L. Who shall survive? A new approach to the problem of human interrelations. Washington, D. C.: Nervous and Mental Disease Publishing Co., 1934.

Radke, M., Sutherland, J., & Rosenberg, P. Racial attitudes of children. Sociometry, 1950, 13, 154-171.

Raths, L., & Schweickart, E. F. Social acceptance within interracial school groups. Educational Research Bulletin, 1946, 25, 85-90.

Roistacher, R. C. Peer nominations, clique structures, and exploratory behavior in boys at four junior high schools. Unpublished doctoral dissertation, University of Michigan, 1972.

Roistacher, R. C. A microeconomic model of sociometric choice. Sociometry, 1974, 37, 219-238.

Shaw, M. E. Changes in sociometric choices following forced integration of an elementary school. Journal of Social Issues, 1973, 29, 143-157.

St. John, N. Thirty-six teachers: Their characteristics and outcomes for black and white pupils. American Educational Research Journal, 1971, 8, 635-648.

Young, L. L. Sociometric and related techniques for appraising social status in an elementary school. Sociometry, 1947, 10, 168-177.

APPENDIX A

SAMPLE SOCIOMETRIC QUESTIONNAIRE

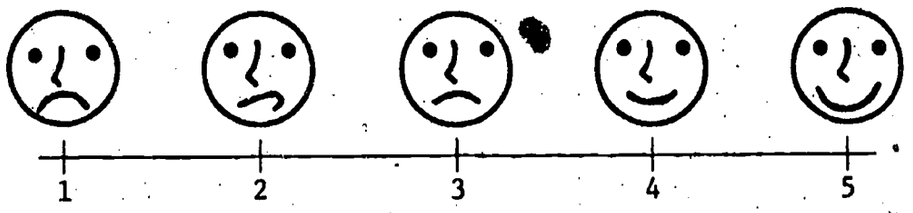
NAME _____

EXAMPLES:

	I don't like to				I like to a lot
Susan Brooks	1	2	3	4	5
Robert Johnson	1	2	3	4	5

John Armon	1	2	3	4	5
Andrea Brandt	1	2	3	4	5

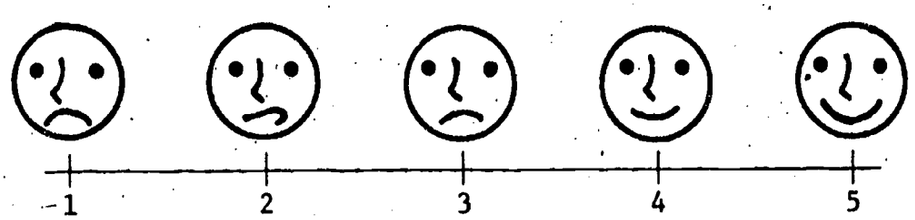
HOW MUCH DO YOU LIKE TO PLAY WITH THIS PERSON AT SCHOOL?



I don't like to — I like to a lot

Sandra Drexel	1	2	3	4	5
Sally Higgins	1	2	3	4	5

HOW MUCH DO YOU LIKE TO WORK WITH THIS PERSON AT SCHOOL?



I don't like to — I like to a lot

APPENDIX B

MEAN SCORES USED IN THE ANALYSIS OF VARIANCE OF THE TOTAL SAMPLE FOR PLAY

Giver-Receiver	Mean
Males-Males	4.09
Males-Females	2.20
Females-Males	2.42
Females-Females	3.78
Whites-Whites	2.95
Whites-Blacks	2.85
Blacks-Whites	3.19
Blacks-Blacks	3.51

APPENDIX C

MEAN SCORES USED IN THE ANALYSIS OF VARIANCE OF THE TOTAL SAMPLE FOR WORK

Giver-Receiver	Mean
Males-Males	3.77
Males-Females	2.16
Females-Males	2.25
Females-Females	3.50
Whites-Whites	2.76
Whites-Blacks	2.51
Blacks-Whites	3.10
Blacks-Blacks	3.31

APPENDIX D

ANALYSIS OF VARIANCE FOR THE TOTAL SAMPLE --- PLAY VARIABLE (df = 1,198)

Factor	MS	F
Race of Giver	26.89	18.43*
Sex of Giver	0.27	0.18
Race of Giver X Sex of Giver	0.21	0.15
Race of Receiver	1.50	2.60
Race of Giver X Race of Receiver	6.11	10.56*
Sex of Giver X Race of Receiver	0.08	0.14
Race of Giver X Sex of Giver X Race of Receiver	0.65	1.12
Sex of Receiver	9.40	7.63**
Race of Giver X Sex of Receiver	1.46	1.19
Sex of Giver X Sex of Receiver	348.94	283.43*
Race of Giver X Sex of Giver X Sex of Receiver	3.04	2.47
Race of Receiver X Sex of Receiver	3.31	7.60**
Race of Giver X Race of Receiver X Sex of Receiver	0.02	0.05
Sex of Giver X Race of Receiver X Sex of Receiver	0.19	0.44
Race of Giver X Sex of Giver X Race of Receiver X Sex of Receiver	0.66	1.51

*$p < .001$

**$p < .01$

APPENDIX E

ANALYSIS OF VARIANCE FOR THE TOTAL SAMPLE -- WORK VARIABLE (df = 1,196)

Factor	MS	F
Race of Giver	42.30	22.79*
Sex of Giver	1.02	0.55
Race of Giver X Sex of Giver	0.55	0.29
Race of Receiver	0.04	0.07
Race of Giver X Race of Receiver	7.19	13.47*
Sex of Giver X Race of Receiver	0.46	0.85
Race of Giver X Sex of Giver X Race of Receiver	0.04	0.07
Sex of Receiver	4.21	3.20
Race of Giver X Sex of Receiver	2.52	1.92
Sex of Giver X Sex of Receiver	268.18	204.12*
Race of Giver X Sex of Giver X Sex of Receiver	0.86	0.65
Race of Receiver X Sex of Receiver	1.37	2.68
Race of Giver X Race of Receiver X Sex of Receiver	0.04	0.08
Sex of Giver X Race of Receiver X Sex of Receiver	0.85	1.66
Race of Giver X Sex of Giver X Race of Receiver X Sex of Receiver	0.61	1.19

*$p < .001$

APPENDIX F

MEAN SCORES AND SAMPLE SIZES FOR CLASS 1

	N
White Male	12
White Female	7
Black Male	2
Black Female	4
Total	25

a. Play	
Own-Sex	3.79
Cross-Sex	1.97
Own-Race	2.92
Cross-Race	2.83
b. Work	
Own-Sex	3.61
Cross-Sex	1.82
Own-Race	2.83
Cross-Race	2.60

APPENDIX G

MEAN SCORES AND SAMPLE SIZES FOR CLASS 2

N	
White Male	9
White Female	10
Black Male	2
Black Female	4
Total	25

a. Play	
Own-Sex	3.58
Cross-Sex	2.66
Own-Race	3.08
Cross-Race	3.15

b. Work	
Own-Sex	3.27
Cross-Sex	2.18
Own-Race	2.80
Cross-Race	2.66

APPENDIX H

MEAN SCORES AND SAMPLE SIZES FOR CLASS 3

	N
White Male	11
White Female	6
Black Male	0
Black Female	2
Total	19

a. Play

Own-Sex	4.16
Cross-Sex	2.33
Own-Race	3.18
Cross-Race	3.23

b. Work

Own-Sex	3.82
Cross-Sex	2.23
Own-Race	2.94
Cross-Race	3.06

APPENDIX I

MEAN SCORES AND SAMPLE SIZES FOR CLASS 4

N	
White Male	10
White Female	6
Black Male	3
Black Female	4
Total	23

a. Play

Own-Sex	3.86
Cross-Sex	1.82
Own-Race	2.94
Cross-Race	2.74

b. Work

Own-Sex	3.27
Cross-Sex	1.76
Own-Race	2.66
Cross-Race	2.37

APPENDIX J

MEAN SCORES AND SAMPLE SIZES FOR CLASS 5

N	
White Male	10
White Female	8
Black Male	2
Black Female	2
Total	22

a. Play

Own-Sex	3.64
Cross-Sex	2.67
Own-Race	3.07
Cross-Race	3.24

b. Work

Own-Sex	3.30
Cross-Sex	2.46
Own-Race	2.96
Cross-Race	2.80

APPENDIX K

MEAN SCORES AND SAMPLE SIZES FOR CLASS 6

N	
White Male	6
White Female	9
Black Male	1
Black Female	5
Total	21

a. Play	
Own-Sex	4.03
Cross-Sex	2.88
Own-Race	3.54
Cross-Race	3.34

b. Work	
Own-Sex	3.98
Cross-Sex	2.75
Own-Race	3.44
Cross-Race	3.30

APPENDIX L

MEAN SCORES AND SAMPLE SIZES FOR CLASS 7

N	
White Male	6
White Female	8
Black Male	2
Black Female	0
Total	16

a. Play	
Own-Sex	3.67
Cross-Sex	1.80
Own-Race	2.95
Cross-Race	2.38

b. Work	
Own-Sex	3.01
Cross-Sex	1.57
Own-Race	2.52
Cross-Race	1.91

APPENDIX M

MEAN SCORES AND SAMPLE SIZES FOR CLASS 8

	N
White Male	10
White Female	8
Black Male	1
Black Female	1
Total	20

a. Play	
Own-Sex	4.12
Cross-Sex	1.46
Own-Race	2.59
Cross-Race	2.95

b. Work	
Own-Sex	3.61
Cross-Sex	1.38
Own-Race	2.30
Cross-Race	2.67

APPENDIX N

MEAN SCORES AND SAMPLE SIZES FOR CLASS 9

N	
White Male	10
White Female	9
Black Male	3
Black Female	2
Total	24

a. Play	
Own-Sex	3.92
Cross-Sex	2.37
Own-Race	3.48
Cross-Race	2.80

b. Work	
Own-Sex	3.70
Cross-Sex	2.28
Own-Race	3.31
Cross-Race	2.67

APPENDIX O

MEAN SCORES AND SAMPLE SIZES FOR CLASS 10

N	
White Male	9
White Female	10
Black Male	2
Black Female	2
Total	23

a. Play	
Own-Sex	4.23
Cross-Sex	2.23
Own-Race	3.19
Cross-Race	3.27

b. Work	
Own-Sex	3.82
Cross-Sex	2.22
Own-Race	3.12
Cross-Race	2.92

APPENDIX P

MEAN SCORES AND SAMPLE SIZES FOR CLASS 11

	N
White Male	8
White Female	9
Black Male	3
Black Female	4
Total	24

a. Play

Own-Sex	3.60
Cross-Sex	1.54
Own-Race	2.94
Cross-Race	2.20

b. Work

Own-Sex	3.04
Cross-Sex	1.38
Own-Race	2.50
Cross-Race	1.91