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THE RELATIONSHIP OF CLASSROOM RACIAL COMPOSITION TO STUDENT ACADEMIC ACHIEVEMENT AND THE CONDITIONING EFFECTS OF INTER-RACIAL SOCIAL ACCEPTANCE

By:

Ralph G. Lewis

A Thesis Presented to the Faculty of the Graduate School of Education of Harvard University in partial fulfillment of the requirements for the degree of Doctor of Education

1971

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Acknowledgment

First, to my parents who put me on a bus for Tennessee in 1954 and who have waited almost seventeen years for me to finish college.

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TABLE OF CONTENTS

Chapter		Page
I.	Introduction	1
II.	Academic Achievement and the Effects of Racial Composition	8
	A. Segregated vs. Non-Segregated	9
	B. Racial Composition	25
	C. Summary and Conclusions	35
III.	Inter-Racial Social Acceptance as a Conditioning Variable	41
	A. Background	41
	B. Black Students in Majority White Settings	44
	C. White Students in Majority Black Settings	52
	D. Hypotheses	56
IV.	Procedures	68
	A. The Sample	68
	B. Data Collection	76
	C. Description of Study Variables	79
V.	Student Social Relationships and the Effect of Classroom Racial Composition	95
	A. Intra-Racial Friendships	101
	B. Inter-Racial Friendships	109
	C. Own Group Preference	113
	D. Summary	115
VI.	Academic Achievement and Classroom Social Acceptance	122
	A. Overall Relationships (Social Acceptance and Academic Achievement)	123
	B. Conditional Relationships (Social Acceptance and Academic Achievement in Majority and Minority Group Situations)	133
	C. Summary	143

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TABLE OF CONTENTS (CON'T)

Chapter		Page
VII.	Student Academic Achievement and Classroom Racial Composition	152
	A. Overall Relationship-Student Academic Achievement and Classroom Racial Composition	157
	B. Conditional Effects of Social Acceptance on the Relationship Between Student Academic Achievement and Classroom Racial Composition	164
VIII.	Conclusion	188
	A. Summary of Findings	188
	B. Limitations and Implications	194
	Bibliography	200
	Vita	212

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THESIS ABSTRACT

THE RELATIONSHIP OF CLASSROOM RACIAL COMPOSITION TO STUDENT ACADEMIC ACHIEVEMENT AND THE CONDITIONING EFFECTS OF INTER-RACIAL SOCIAL ACCEPTANCE

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Abstract

Over the years several social scientists have suggested that the benefits of integrated education for blacks will be conditioned by their social acceptance (or lack of acceptance) from members of the white majority. This suggestion is derived both from reference group theory and from research findings dealing with the effects of psychological stress on the task performance capabilities of individuals. The present research represents an initial attempt to test this hypothesis for both black students in majority white classrooms and for white students in majority black classrooms. In addition, hypotheses were developed and tested concerning the effects of classroom racial composition on the friendship choices of students and the general effects of social acceptance by classmates on the academic achievement of students.

This study was conducted in the public school system of one large Northeastern city. The sample included all children in 36 sixth grade classrooms in 18 different schools. These schools were randomly selected from a matrix representing the racial and social class distribution of all racially mixed elementary schools in the city. Data to test the hypotheses were derived from a variety of sources including formal school records, questionnaires, and a sociometric test. A variety of statistical procedures including multiple regression analysis have been employed in testing our hypotheses.

Using Pearsonian correlation techniques we found that as classroom percent own race decreased: 1) black girls became friendlier to other black girls, black boys, and white boys; 2) white girls became friendlier

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to white boys and black boys; 3) black boys became friendlier to black girls; 4) white boys became friendlier to white girls. These findings suggest the importance of cross-sex friendship choices for students and clearly suggest that blacks (particularly girls) are more sensitive to changes in classroom racial composition than whites. This suggestion is supported by the results of a multiple regression analysis in which we controlled for family SES, classroom SES, GPA (sixth) and absences (sixth). Even under these stringent control conditions classroom percent black had a significant effect on the friendliness of black girls to other black girls and to black boys and the friendliness of black boys to black boys. We also found that classroom racial composition had no effect on the tendency of students to prefer members of their own race as friends--(own group preference).

In terms of social acceptance and academic achievement we found that GPA (but not the reading achievement) of students increases as their social acceptance by classmates increases. For girls (both black and white) this effect persisted even after adjusting for the possibly invalidating effects of third variables (family SES, classroom SES, and tested intelligence). Moreover, our findings indicate that the relationship between social acceptance and GPA is conditioned by the racial composition of classrooms. When controlled for third variables, social acceptance by the majority had a significant effect on the GPA of whites (both boys and girls) and black boys only when they were members of the majority. For black girls, however, social acceptance by white girls (when whites were in the majority) and black girls (when blacks were in the

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majority) had a significant effect on GPA. This finding also suggests that black girls may be particularly sensitive to variations in classroom racial composition.

Finally, we found that both socially accepted and non-accepted white students in majority black classrooms performed as well academically as students of comparable intelligence in majority white classrooms. Similarly, socially accepted blacks in majority white classrooms performed as well (but not better) academically than blacks of comparable intelligence in majority black classrooms. That is, being in majority white classrooms and socially accepted by the white majority did not improve their academic achievement. On the other hand, our findings did reveal that the lack of social acceptance does have depressing effect on the academic achievement (GPA) of blacks when they are in majority white classrooms.

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I. Introduction

During the past sixteen years a major question of public policy has revolved around the racial separation of students in the public schools of the United States. Early interest in this issue focused on the effects of legally enforced "de jure" segregation typical of the Southern states. De jure segregation, however, was ruled unconstitutional by the Supreme Court of the United States which concluded:

> .....that in the field of public education the doctrine of separate but equal has no place. Separate educational facilities are inherently unequal.....Such segregation is a denial of the protection of the laws. (Brown vs Board of Education, Topeka, Kansas, 347 U.S. 483, 1954)

While this ruling made the intentional separation of students by race illegal, it did not eliminate or even significantly reduce the actual separation of students by race within our public school systems. It did, however, help provide the basis for a shift in interest to the effects of racial separation regardless of the reasons for that separation.

Although, the Court's decision applied only to legally enforced segregation of students, the reasoning upon which it was based could be applied with equal force to "de facto" segregation. As early as 1953 it was suggested that the effects of segregation either de facto or de jure were likely to be highly similar for black children (Milner, 1953). Peter Drucker recognized this point and in 1957 predicted that it was in the urban north that the real issue of racial segregation would be met.

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> .....the Supreme Court decision on integration in the schools may, in the long run, prove to have been a rearguard action--though an important and highly significant one--rather than a breakthrough. To be sure, half of our Negro population still lives in the South, but the proportion of young Negroes of school age still in the South is already much less; and even fewer Negro children live in rural areas where integration will be fought the hardest.
>
> Increasingly therefore, race relations will become problems of the industrial city, and especially of the Northern industrial city. For the future of race relations in this country what happens in Buffalo, Indianapolis, and Flint is already a great deal more important than what happens in Mississippi. (Drucker, 1957, pp. 102-103)

Despite such insights and warnings most people--including those in authority--tended to ignore or avoid the issue of de facto segregation until it was publically and even legally attacked by civil rights organizations and their supporters. Since that time this issue has managed continually to attract attention and to generate controversy.

Thus during the mid 1960's demands for the elimination of de facto segregation increased and were recognized by public officials. Numerous cities and towns took steps to eliminate or at least reduce the racial separation of students in their school systems. At least four states (California, Massachusetts, New Jersey, and New York) took action to require all school systems under their jurisdiction to minimize if not completely eliminate racial separation. Similar efforts have continued at various rates throughout the remainder of the decade.

Support for the elimination of de facto segregation was and is by no means unanimous. Opposition to such attempts have been quite strong in many sections of the country outside of the South. For example, in

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Boston, Massachusetts, the controversy over "racial imbalance" in the public schools has continued for years. Minimal compliance with the State's "Racial Imbalance Act" was obtained only after State funds were withheld from the Boston schools. In addition yearly efforts are made to repeal the original legislation. Opposition has also developed within the black community itself. More extreme advocates of "black power" have raised serious questions concerning the value of "integrated" education and often view racially segregated central city schools as a major vehicle for the development of community control.

Despite the magnitude of the problem and the verbal attention devoted to it, surprisingly few empirical studies were conducted on the effects of racial separation during the decade following the Supreme Court decision. Several factors appear to have contributed to this condition. First, because of the existing high levels of racial separation the number of black or white students actually attending schools with students of the other race was severely limited. This was equally true in terms of other "minority" groups. It should be noted that this condition has not improved. Second, even where desegregated or integrated education existed, information on the interracial exposure and educational performance of students was difficult to obtain. In fact, many school systems made it a matter of policy not to record information of this type. Finally, even where the information existed school administrators were reluctant to allow researchers access to it because of the general controversy surrounding the issue.

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This situation has improved since 1965. First, we have had the publication of the Equality of Educational Opportunity Survey and related studies. Second, the results of experimental bussing programs designed to reduce racial separation in the schools have been published. Nevertheless, our knowledge concerning the possible effects of racial separation on the educational attainments of students is anything but complete.

During the decade between 1954 and 1965 there appeared to be general agreement among educators and social scientists concerning the positive effects of "integrated" education for black students. This consensus was derived from a variety of sources including the assumptions that pre-dominately black schools were inferior in terms of the quality of educational services provided. In addition, many scholars believed that, even if the quality of services could be equal, attending pre-dominately black schools generated a pattern of self-hatred that inhibited learning capabilities (The Group for the Advancement of Psychiatry, 1957).

Studies published during this period strengthened this consensus. That is they tended to show that school integration (or desegregation) had a positive effect on the educational attainments of black students--particularly academic achievement (Hansen, 1960; Katzenmeyer, 1963; Samuels, 1958; Stallings, 1959; Wolman, 1964). Moreover, even if positive results were not found there was no evidence of a negative effect on the academic achievement of black students (St. John, 1962). During this period there was also general agreement among educators and social

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scientists--although not among laymen--that integrated education did not have negative effects on the educational attainments of white students (Hansen, 1960; Stallings, 1959).

Since 1965, however, conflicting evidence has been presented concerning the effects of school racial composition on the academic achievement of students. The major source of this conflict is two studies which were derived from essentially the same data (Coleman, 1966; U.S. Commission, 1967, Vol. 1). Coleman concluded that after controlling for individual social class background, measures of school quality, and student body characteristics the proportion of white students in a school accounted for almost none of the variance in academic achievement among students (Coleman, 1966, p. 307). In direct contrast to this conclusion, the United States Commission on Civil Rights found that classroom racial composition had a positive effect on the academic achievement of students even when controlling for third variables similar to the ones used by Coleman (U.S. Commission, 1967, Vol. 1).

Several explanations for these conflicting findings are possible including the fact that the two studies utilized different statistical tenchiques and different measures of the independent variable--school vs classroom racial composition (U.S. Commission, 1967, Vol. 2, p. 41; St. John, 1970, p. 120). However, other studies have provided additional support for both conclusions. For example, Wilson (1967) found that given similar social class composition school racial composition had little effect on the academic achievement of both black and white students. On the other hand, McPartland (1968) found a residual effect on

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academic performance of black students for both school and classroom racial composition, and St. John and Smith (1969) reported a similar effect for average school percent black of schools attended from the first through the ninth grades.

Over the years, there has been considerable discussion of the effects of integrated education on the attitude and behavior of individuals. More recently some social scientists have suggested that the positive benefits of integrated education for blacks may be conditioned by their social acceptance (or lack of acceptance) from members of the white majority (Katz, 1964; Pettigrew, 1968). This study represents an initial attempt to test this proposition. Specifically it focuses on the conditioning effects of social acceptance by classmates on the academic achievement of students when they are racially in the minority in their classrooms.

This study was conducted in one large northeastern city. The sample included all children in 36 sixth grade classrooms in 18 different schools randomly selected from a matrix representing the racial and social class distribution of all racially mixed elementary schools in the public school system. Data to test our hypotheses were derived from a variety of sources including formal school records, questionnaires, and a sociometric test. A variety of statistical procedures including multiple regression analysis have been employed in the testing of these hypotheses for both black and white students.

Chapter II reviews existing studies concerning the effects of racial composition on the academic achievement of students. Chapter III develops

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the conceptual basis for our study and presents a series of hypotheses concerning the relationships between classroom racial composition, social acceptance, and the academic achievement of students. Chapter IV presents a detailed description of the research design and the procedures used to carry out our study. Chapters V - VI present our findings for: the effects of classroom racial composition on the friendship choices of students; the relationships between social acceptance and the academic achievement of students; and the conditioning effects of social acceptance on the relationship between classroom racial composition and the academic achievement of students. Finally, Chapter VIII presents a summary of our findings and their implications for educational practice and future research.

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II. Academic Achievement and the Effects of Racial Composition

Studies included in this review represent material generally available in the basic social science and educational literature and were selected on the basis of their appropriateness to the interests of this study. Particular emphasis has been placed on studies appearing after the Supreme Court's decision in 1954 and dealing with the academic achievement of black and/or white students in public elementary and secondary schools. The selected studies are grouped according to the manner in which the assumed independent variable--racial composition--is defined:

1. Segregated vs Non-segregated--those studies which define racial composition as a discrete variable using nominal terms such as segregated vs non-segregated or segregated vs desegregated or racially mixed and racially balanced.

2. Racial Composition--those studies using a continuous variable based on the proportion of students of a given race in schools or classrooms.

The division of studies along these lines appears to be useful because it influences: the selection of effects to be studied, the manner in which they are studied, and the level or types of inferences that can be made from the findings.

The basic approach in the review will be to present the findings of existing studies and to evaluate these findings in terms of the extent to which they provide a satisfactory basis for making inferences concerning a causal relationship between the racial composition of educational settings and the academic achievement of students. This distinction is

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necessary because statistical relationships do not in themselves provide the basis for conclusions concerning the causal relationships between variables.

In order for causal inferences to be made, three conditions beyond a mere statistical relationship must exist. First, there must be reason to believe that a causal relationship between the two variables is possible. Ideally, this means that a theoretical model must exist in which it is possible to reason from the assumed causal variable--in this case racial composition--to effects in the assumed dependent variable. Second, there must be evidence that the occurrence of the assumed causal variable actually preceded the occurrence of the dependent variable. Finally, there must be reason to believe that the observed statistical relationship is valid and not a spurious relationship resulting from common causal dependence on one or more additional variables. Findings that meet these conditions do not prove that a causal relationship actually exists. They do, however, increase one's confidence in the possibility of such a relationship.

A. Segregated vs. Non-Segregated

School System Desegregation

Two of the earliest studies reported on the desegregation of Southern school systems--Louisville, Kentucky, and Washington, D.C.--in response to the 1954 Supreme Court decision (Hansen, 1960 and Stallings, 1959).

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Hansen studied the trends in the academic achievement of entire grade levels in Washington's schools after the dual school systems had been combined. He reports that for each successive year of "integration" the median city-wide achievement scores of tested grade levels showed an improvement. For example, the median achievement level of the 1958 third grade was greater than the 1957 third grade.

Stalling' study is based on the academic achievement of both black and white students in the 2nd, 6th, and 8th grades of Louisville immediately before and after the formal desegregation of the school system. Stallings reports that for most areas tested the achievement of both black and white students after desegregation showed significant improvement over the performance of students at the same grade level before desegregation. Moreover, he reports that black students showed greater gains in academic performance than white students. The latter finding was taken as evidence that desegregation had a positive effect on the academic achievement of blacks.

Unfortunately, neither study provides any evidence concerning the effect of variation in racial composition on the academic achievement of students. In the first place, both studies focus on the formal desegregation of an entire school system and do not consider the actual racial composition of schools or classrooms attended by students. There is evidence in both cases that the end of segregated school systems did not result in major changes in the racial distribution of students throughout the system (Hansen, 1960, p. 228; Knowles, 1962). In fact, Stallings found "that the gains were greatest where Negro pupils remained

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by choice with Negro teachers," that is, all black schools. Second, neither study involved attempts to follow the same students through the system--test, retest. Instead, comparisons are based on the performance of successive classes of students at specific grade levels. Obviously changes in student characteristics between classes could account for the observed differences in achievements. This is particularly true for Hansen's study which covered a five year period. Third, neither study adequately controls for the possible effects of other independent variables. For example, in Washington a major program to improve the quality of education was introduced at the same time the school system was desegregated. Thus the improvement in academic performance could be attributed to these changes. Stallings suggests that the improved performance of black students in Louisville may have been due to the increased motivation of both black students and teachers stimulated by the end of legal segregation. Finally, in Hansen's study the results are not reported separately for blacks and whites and it is impossible to determine which group, if either, was responsible for the reported improvements.

Non-bussing Studies

All of the other studies included in this section also utilize nominal definitions of the assumed independent variable. These studies, however, focus on the racial composition of specific schools or classrooms rather than the "desegregation" of entire school districts. Despite this similarity, these studies do differ in terms of the

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research designs employed (St. John, 1970). They also vary in terms of such things as the age or grade level of the students studied, the racial composition of previous educational settings, and the existence of special programs to reduce racial segregation.

Katzenmeyer studied the growth in measured intelligence of 193 black and 1061 white students who entered selected kindergartens in Jackson, Michigan during the Fall of 1957 (Katzenmeyer, 1963). The independent variable is described as a "mixed" school program designed to enhance the opportunity for social interaction among students. Academic achievement is measured by the results of Lorge-Thorndike Intelligence tests administered at the beginning of kindergarten and repeated during the early part of the second grade. The scores of white students were significantly higher than those of blacks on both tests, but growth was significantly greater among blacks (6.7 points) than among whites (1.2 points). Based on this finding Katzenmeyer concluded "that the Negro childs' performance on an intelligence test depends on a communality of exposure with white students."

Unfortunately, this conclusion is not justified by the actual study. First, the study design did not include a control group; thus, no evidence is offered concerning the achievement of black students who did not attend "mixed" schools or who were not exposed to the experimental program. In addition, no information is provided concerning the family backgrounds of students or how they or the schools were selected to participate in the program. Thus we cannot ignore the possibility that

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the black participants represented a select group who were particularly responsive to the program. Finally, Katzenmeyer totally fails to provide any evidence that the reported increases in achievement actually varied with the degree of social interaction with white students.

The next group of studies are cross-sectional rather than longitudinal in character; that is, comparisons are made between an experimental and a control group but pre-study measures of achievement are not utilized. Working in New York City, Lesser found that blacks, as well as Puerto Rican, Chinese, and Jewish students from more integrated schools, showed significantly higher performance when compared to students from racially imbalanced schools (Lesser, 1964). In Plainfield, New Jersey, Wolff found higher academic achievement (reading scores and grade point average) at the high school level among black students who had attended an integrated elementary school (33 percent black) than the graduates of an all black school (Wolff, 1962). Unfortunately, neither study reports an effort to control for additional variables such as the socio-economic status of students.

Other cross-sectional studies have attempted to control for the possible invalidating effects of third variables. Samuels compared the academic achievement of black students who had attended racially "segregated" schools with students from "mixed" schools (Samuels, 1958). Students were matched on I.Q., pre-school readiness, attendance, health, and socio-economic status. Academic achievement was measured by the results of Metropolitan and Stanford achievement tests and the marks given by classroom teachers. At the first and second grade levels

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students from segregated schools had higher scores but from the third through the sixth grades, students in the integrated schools had higher scores.

In his study of the effects of residential segregation on school achievement among sixth grade students in Berkeley, California, Wilson included data on 99 black students (Wilson, 1960 and 1963). Among these black students academic achievement was lowest for those students attending the lowest SES schools--Flats. These were also the schools with the highest proportion of black students, 62 percent compared to 14 percent in the higher SES Foothills schools. Wilson reports that school strata continued to have an independent effect on the academic achievement of blacks even after attempts to control for variations in Family SES (Wilson, 1963, p. 126).

In New York City, Jessup found that black and Puerto Rican students attending a non-segregated elementary school (75 percent white) had higher academic achievement scores than students in a segregated (96 percent non-white) school (Jessup, 1967). This finding is based on a comparison of I.Q., math, and reading test scores for sub-samples of 18 integrated and 80 segregated low SES students.

Lockwood studied the academic achievement of 217 sixth grade black students attending both racially balanced (less than 50 percent black) and unbalanced schools in the state of New York (Lockwood, 1966). He reports that the academic achievement of those students who attended racially balanced schools for two or more years was significantly greater than the achievement of students attending unbalanced schools.

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This was true even after controls for variations in I.Q. had been introduced. Lockwood also reports that differences in achievement were not significant for students who attended balanced schools for less than two years. This raises the possibility that the benefits of attending racially balanced schools are cumulative and that the effects could increase with the number of years of exposure. It should be noted, however, that this finding may only reflect changes in the characteristics of those students recruited, regardless of the reason or process, by racially balanced schools.

Additional support for the possible cumulative effects of integrated education for blacks is provided by a study of the academic achievement of blacks in segregated and desegregated schools in Tennessee (Anderson, 1966). Anderson reports that the segregated and desegregated schools were "equivalent with respect to tangible factors" and students matched on age, family structure, third grade I.Q. scores and previous academic achievement. Using a sample of 75 students from each type of school, Anderson found that students in the desegregated schools had significantly higher Metropolitan Achievement Test scores. Moreover the differences in scores were stronger the earlier students had entered desegregated schools.

Bussing Studies

The last group of studies included in this section were conducted in school systems in which efforts to reduce the racial separation of students had become a special issue. In fact, most of these studies

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were based on the results of bussing programs specifically designed to enroll black students in predominately white schools. Only two of these studies did not involve specific bussing programs (Meketon, 1966, and Gordon, 1966). Among the bussing program studies three resulted in the elimination of "de facto" segregation within the school district, five involved "compensatory" programs for students remaining in the segregated schools, and three were based on the bussing of central city students to suburban school districts.

The two non-bussing studies were both based on the integration of previous all white schools under hostile conditions. Meketon compared the achievement on three standardized tests of fifth and sixth grade black students in three unidentified elementary schools in Kentucky. The schools were described as 1) de-facto segregated, 2) peacefully integrated, and 3) integrated under "anxiety arousing circumstances." The first two schools were in the same school district and integration of the previously all-white school was initiated to reduce overcrowding in the segregated school included in the study. School three was in a separate community and integration represented the total assimilation of a previously all black school into an all-white school under pressure from the black community and against the stubborn resistance of the white community including school officials. Meketon reports that black students in school three had significantly higher scores than de-facto segregated students on two tests and than peacefully integrated students on all three tests. When controlled for I.Q. no significant differences were found between students in the de-facto segregated and peacefully

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integrated schools. Unfortunately, comparable controls could not be applied for the third school and higher I.Q. among students in this school may account for the reported differences in achievement.

Gordon (1966) reports on the academic achievement of students in the Oak Park, Michigan High School where students had been admitted from the all black Carver elementary school district. It should be noted that the integration of the Oak Park district took place only after strong intervention on the part of various state officials. Gordon reports a general rise the academic achievement of black students without any decrease in the achievement of white students. This effect had the result of closing the achievement gap between black and white students particularly for boys. However, this study does not provide evidence that the reported effect is due to attending a majority white high school.

Three of the bussing studies reviewed resulted in the reported elimination of de-facto segregation in their respective school districts. As a result all three studies suffer from the lack of appropriate control groups. In White Plains, New York the bussing of over 900 black students to predominately white schools was initiated in 1964 (White Plains Board of Education, 1967). Two years later the achievement gains--I.Q., Stanford Reading and Arithmetic Test scores--of 33 black students who entered the integrated third grade in 1964 were compared with those of 36 black students who had entered segregated third grades in 1960. The results of this comparison are mixed. Integrated students showed greater gains on two tests--paragraph meaning

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and math. But the segregated students showed greater gains on the word meaning portion of the reading test.

In the fall of 1965 the Board of Education of the Riverside, California, Unified School District initiated a bussing program to eliminate de-facto segregation of its minority group children, blacks and Mexican Americans (Purl, 1967, 1969, 1970). By the fall of 1967 all of the target students--those attending three 100 percent minority group schools--were attending integrated schools. Stanford Reading Test scores were compared for three groups of students: bussed minority group students; receiving school students--essentially white Anglo-Saxon; and non-receiving school students--majority white Anglo-Saxon. Progress reports on this project indicate mixed, if any, results. At the lower grade levels the average score of bussed students has improved since integration. Among fourth and fifth grades it has decreased. None of these differences are statistically significant, however, and similar results are reported for both of the comparison groups (Purl, 1970, p. 8). Additional analyses reveal that these findings may be the result of differential effects for "low" and "high" achieving students. That is, performance of high achieving students has improved more since desegregation than that of low achieving students. Great care should be exercised in the use of these findings, however, because no efforts have been made to control for possible variations in the family background of students, previous levels of achievement, or variations in school programs and environment.

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Carrigan (1969) reports on a similar program in Ann Arbor, Michigan. As in the Riverside study, comparisons are made between three different groups: transfer students (black); receiving school students (white); and non-transfer students (50/50 racial split). When controlled for race and sex, all three comparison groups were similar in demographic characteristics such as place of birth, family size, and parental educational and occupational levels. Academic achievement is measured by the results of standardized tests--aptitude, reading, and arithmetic--taken before and one year after the initiation of the program in 1965. Statistically significant differences between the three groups were found--receiving over non-transfer, and non-transfer over transfer. But these differences disappeared when the analysis was controlled for race and sex.

It must be noted that neither the Riverside or the Ann Arbor study really tests the effects of "integrated" education on previously segregated students. In both cases comparisons are made with students who were already attending integrated schools. It would be rather naive or simplistic to expect the transfer students to make significant gains over students who had and continued to enjoy the benefits--whatever they may be--of integrated education. However, these studies do provide some evidence that transfer does not retard the academic achievement of previously segregated students.

Five studies are based on the results of central city bussing programs coupled with "compensatory" education programs for students who remained in segregated schools. Wolman (1964) reports on the transfer

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of black students from a black elementary school to majority white schools in New Rochelle, New York. Two years after the program was initiated Metropolitan Achievement Test results indicated that students who remained in the segregated school achieved as well as the transfer students. The only exception to this finding was at the kindergarten level where transfer students received a larger proportion of high reading scores. It should be noted that contrary to normal expectations the transfer population contained more children from lower than upper class families (Luchterhand and Weller, 1965). This meant the family socio-economic status of non-transfer students was higher than that of bussed students. Coupled with the compensatory education program provided by the segregated school, this fact may help explain Wolman's finding of higher achievement among the segregated students.

Reports on the four remaining bussing programs are superior to Wolman's because they include pre-program measures of achievement and are thus able to compare the gains in achievement made by segregated and desegregated students. In Syracuse, New York, 24 black students bussed to predominately white schools were matched with students from the same area who remained in a segregated school with a compensatory education program. After one year the bussed students showed a 9.4 month gain in reading compared to 4 months for their matched counterpart (U.S. Commission,1967, Vol. 1, p. 129). In a larger study derived from the same project, Baker (1967) reports no significant differences in the gains reported for bussed students and different control groups

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in segregated schools. Support for Beker's finding is provided by a third but non-bussing study conducted during this same period. The academic achievement of black students attending schools that were 80 percent or more black but with compensatory education programs, was compared with the achievement of black students from the same social class but normally enrolled in majority white schools. No significant differences in the achievement of the two groups were found (U.S. Commission, 1967, Vol. 2, p. 247).

In Berkeley, California a bussing program was initiated in 1965 when 230 black students from majority-Negro schools were transferred to predominately white middle class schools. Six months later bussed students in the 3rd, 4th, and 5th grades showed greater improvement in reading test scores than students who remained in the racially segregated schools with compensatory education programs (U.S. Commission, 1967, Vol. 1, p. 131). Similar results are also reported for the following year's program (Jonsson, 1967, and Sullivan, 1968). It should be noted that these differences may have resulted from selection criteria which favored the choice of non-problem--academically, emotionally, and behaviorally--students from motivated families (Jonsson, 1966, p. 26). Such differences are clearly indicated by the fact that bussed students had higher achievement scores than non-bussed students at the beginning of the project.

The U.S. Commission on Civil Rights also reports on the results of bussing versus compensatory education program (EIP) in Philadelphia. The academic achievement of bussed students was compared with the achieve-

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ment of two different groups of black students of comparable socio-economic status and early reading achievement. The Commission found: "by the third grade the median reading level of the bussed students had surpassed that of the EIP students, and had climbed to a position equal to that of the students of slightly higher social class in the nearly all-Negro schools without the EIP program" (U.S. Commission, 1967, Vol. 1, p. 135). These results were particularly pronounced for higher achieving students. This study suffers from several serious methodological limitations, however, and it is likely that the reported differences are the result of the criteria or procedures used to select the bussed students (Lewis, 1967). St. John (1970) reports that another study--probably based on the same program--found significant differences in the reading score gains of bussed students even when compared to a matched control group from the segregated sending school.

Three of the bussing studies are based on programs in which central city students were bussed to suburban schools. In 1965 such a program was initiated between Rochester, New York and the nearby suburban West Irondequit Central School District (Rock et. al. 1966, 1967, 1968). That year and for two following years 25 first grade students were randomly selected from a pool of 50 students to attend predominately white suburban schools. These students were considered to be average ability or above by their kindergarten teachers. The remaining 25 students served as the control group. Over the three year period 27 comparisons were made between the achievement of bussed and control students on standardized tests (group 1 = 15, group 2 = 8, and group 3 = 4). In all,

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13 of the comparisons were significant and all favored the bussed students (Rock et. al., 1968). However, careful analysis of the tables presented in this study reveals that only the differences in math achievement were consistently significant--6 out of the 13 significant comparisons. Moreover, the results of this study are somewhat confused by the extremely large loss of control group members during the first two years of the program and by the fact that these non-returning students were apparently the higher achieving members of the control groups.

In the fall of 1966 a similar program was initiated between Hartford, Connecticut and five suburban communities (Mahan, 1968). Starting that year 266 Hartford students from grades K-5 were bussed to 124 different classrooms in 35 different school buildings in the cooperating communities. Entire classes--rather than individuals--were randomly selected to participate from eight segregated (85% or more non-white) elementary schools in the low socio-economic status North End of Hartford. Additional students from the same schools and grade levels were selected as control group members. The study is based on the gains in academic achievement of four different groups. They are:

Control 1 - non-bussed and no special educational services, "supportive assistance." (186)

Control 2 - non-bussed with "supportive assistance." (58)

Experimental 1 - bussed with no "supportive assistance." (37)

Experimental 2 - bussed with "supportive assistance." (160)

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For the two year period covered by the study, Mahan concluded:

1. Youngsters placed in suburban classrooms at grades K-3 have a significantly greater tendency to show growth in mental ability scores than those remaining in inner city classrooms.

2. Measures of reading readiness, reading ability and mathematical ability show a similar pattern.

3. There is no evidence that special supportive assistance is an effective intervention within the inner city schools.

4. Suburban placement combined with special supportive assistance is a more effective intervention than is suburban placement by itself. (Mahan, 1968, p. 48)

Even these conclusions should be accepted with care, however. In fact, a careful examination of the tables and text upon which these conclusions are based reveals several problems. For grades K-3 total achievement gains for the two year period do tend to favor bussed students. But yearly changes are less consistent both in size and direction. Moreover, most of the statistically significant changes favoring the bussed students are concentrated in two grade levels--kindergarten and third--rather than distributed over all four grade levels. Finally, at the two highest grade levels (4th and 5th) all of the significant differences favored the non-bussed students.

The most recent bussing study included in this review is a Boston program conducted by the Metropolitan Council for Educational Opportunity (METCO). This program had been in existence several years but did not have the support of the Boston Public School System. Nevertheless, in the fall of 1968 over 700 students (grades 3-12) were bussed to suburban school districts (Walberg, 1969). Because the Boston school system

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would not cooperate by supplying information on its students, a control group was created by selecting a sibling from each of the participating METCO families. Standardized reading and math tests were administered in October 1968 and again in May 1969. Experimentals and controls at all grade levels had similar scores on the October pre-test. Walberg found no significant differences in the reading score gains of METCO students and their sibling controls. Similar results were obtained on the math test except at the 5-6 grade level where control group members achieved significantly greater gains than the bussed METCO students. Walberg also reports that additional tests using year in the program, sex, and initial achievement level did not produce any differences in the findings. It should be noted, however, that there was a drastic loss in control group members during the study period and Walberg does not provide any information on the characteristics of these dropouts. Thus it is possible that only the more motivated and/or higher achieving students actually took both the pre- and post-tests.

B. Racial Composition

The studies in this section have been grouped together because each represents some attempt to develop a measure of the independent variable more sophisticated than the mere dichotomy racially segregated vs desegregated, etc... The earliest of these studies was conducted among all of the black students enrolled at the junior level in two integrated New Haven high schools (St. John, 1962). Four different measures of

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the degree of segregation during their elementary school years were developed including the Average School Percent Negro during grades one through nine. Academic achievement was measured by the results of standardized tests and the average of academic marks given by teachers. St. John reported that when controlled for socio-economic status, there were no significant relationships between academic achievement and any of the racial composition measures.

In 1966, St. John also conducted an extensive study of the academic achievement of 1388 black ninth graders in Pittsburgh (St. John and Smith, 1969). These students were attending a representative sample of secondary schools having forty or more black students in the ninth grade, and they accounted for 72 percent of all the black ninth graders in the city. Academic achievement was measured by the results of Metropolitan Achievement Tests--reading and arithmetic. Three different measures of school racial composition were used:

1. Present School Percent Black (PSPB)

2. Average School Percent Black (ASPB)--the average percentage of black students in schools attended in grades one to nine

3. School Racial Composition Pattern--various combinations of school racial composition in grades 1-3, 4-6, 7-9. The patterns used are: 1) Segregated, 2) Majority Black, 3) Resegregated, 4) Desegregated, and 5) Minority Black. (St. John and Smith, 1969, p. 13)

It should be noted that the third measure (patterns) is a nominal rather than a continuous variable. Nevertheless, the results for all three variables are similar. Even after adjusting for the effects of

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family and school socio-economic status, I.Q., and sex through regression analysis, math achievement had a significant negative relationship with school percent black. That is, the greater the school percent black, either present or average, the lower the math achievement of black students. The major limitation of this study is the lack of longitudinal data on [ability or early] achievement comparable to the racial composition data.

Coleman (1966) reports on the effects of school racial composition on the academic achievement of both black and white students. This study, The Equality of Educational Opportunity Survey (EEOS), is based on a sample of over 4,000 elementary and secondary schools throughout the country from which data was collected on over 600,000 students in grades 1, 3, 6, 9, and 12. Coleman's findings are the results of regression analyses based on systematic samples of 1,000 students from twenty different strata (Coleman, 1966, pp. 571 ff). Measures of school racial composition were obtained by calculating the proportions in each school from student reports of their own race. The primary measure of academic achievement is the results of a verbal achievement test administered as part of the survey. Because of the size of the EEOS sample, the public and professional attention given its findings, and the fact that other major studies have been based on the same data, this study should be considered in some detail.

Coleman's findings raise serious questions about the existence of an independent effect of school racial composition on the academic achievement of students. First, he reports that only a small portion--

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between 5 and 25 percent--of the total variance in the achievement test scores of both white and black students can be attributed to differences between rather than within schools (Tables 3.21.1, p. 293 and 3.22.1, p. 296). It should be noted, however, that between-school differences accounted for more variation in the achievement of blacks than whites.

Second, he argues that the between school component of the total variance is an upper limit but that it is not necessarily attributable to the effects of schools. Table 3.22.1 reveals that the between schools component of verbal achievement is as large at the first grade level as it is at higher grade levels. This finding suggests that some portion of the between schools component should be attributed to original differences in ability rather than to the effects of school experience. Support for this inference is provided by the finding that some portion of the between schools variance component (up to 29 percent for blacks) is attributable to family background factors (Table 3.221.2, p. 299).

Finally, Coleman found that when he controlled for the social class background of individuals, for school educational quality, and for student body characteristics, the proportion of white students in a school accounted for almost none of the variance in the academic achievement of students (Table 3.23.4, p. 310). Moreover, this table also shows that, once the social class backgrounds of the individual students is controlled, it is the characteristics of the student body rather than measures of school quality that produce the largest reduction in the variance explained by school racial composition.

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Despite its methodological sophistication, however, Coleman's study does have limitations which influence the inferences that can be made from his findings. First, the study is cross-sectional in design and subject to all of the limitations of cross-sectional studies. Moreover, no data were collected on the original ability or early achievement of students and as a result it was not possible to control for differences between segregated and non-segregated students. Third, the use of present school percent white made it impossible to study the cumulative effects of variations in school racial composition. This is particularly important at the higher grade levels, where current conditions may not have provided a good estimate of previous experience. Finally, because it is based on group means, regression analysis may fail to reveal effects if there are contrary trends between sub-groups. For example, differential effects for boys and girls might result in a finding of no relationship when both groups are studied as part of the same population. (Additional methodological criticisms of the Coleman study--particularly the measures of SES and school quality--may be found in Bowles and Levin, 1968; Dyer, 1968; Lewis, 1967; St. John, 1970; U.S. Commission, 1967.)

Perhaps the most sophisticated study of the effects of school racial composition on academic achievement was conducted in the San Francisco Bay area during the spring of 1965 (Wilson, 1967). The study is based on a stratified random sample (5,545 out of 17,000) students attending junior and senior high schools. It should be noted, however, that only three-

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fourths (4077) of the sampled students completed the questionnaires as required to be included in the study.

Measures of the independent variable--school racial composition--were obtained in the following manner:

1. The local schools attended by sampled students were identified by grade level and year.

2. The percent black for each school and year were calculated by aggregating the characteristics of the students who reported attending the school that year.

3. These percentages were then averaged over four educational grade levels: 1-3, 4-6, 7-9, and 10-12 for each student.

Similar measures of school SES and neighborhood racial and SES composition were developed in this fashion. Measures of academic achievement were based on the results of standardized tests administered at the sixth and eighth grade levels.

Wilson's basic approach involves an investigation of the effects of school racial composition on academic achievement above and beyond those that may be attributed to school social class composition. Additional variables such as first grade I.Q. and family background characteristics are statistically controlled. Using regression analysis Wilson found no independent effect of primary school racial composition on the sixth grade reading scores of the sampled students (Wilson, 1967, p. 181). The relationship with primary school SES was significant, however. A separate analysis of the sources of variation in the eighth grade verbal ability tests confirmed this finding for both blacks and whites. Wilson concluded that, "Given similar social class compositions, the racial

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balance of a school has slight bearing on the academic performance of students (Wilson, 1967, p. 202).

Wilson's findings are impressive particularly because he was able to approximate a longitudinal study through statistical controls for original differences in the abilities of students and both family and school SES. Unfortunately, the quasi-longitudinal aspect of the study is also responsible for its most serious limitation. In order to have measures of early achievement and both school racial and social class composition, the study population was actually restricted to those students who started first grade and remained in the Contra Costa County schools. It is doubtful that such students constitute a representative sample of their classmates during the earlier school years. In fact, because of systematic differences in the characteristics of families moving in and families moving out of the area it is likely that low SES and black families are over represented in the sample. This is particularly true for the older students who started first grade as early as 1953. Given the procedures used to calculate school racial and social class composition this raises the possibility that the proportions black and low SES are over estimated for the older students. When combined with less biased figures for the younger students these over estimates could have influenced the results of the analysis.

Three studies have focused on the effects of classroom rather than school racial composition on the academic achievement of students. The earliest was conducted in a Northern California suburban school district (Natzen, 1965). The subjects were 1065 black and white students enrolled

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in 21 fifth and 18 seventh grade classrooms. At the zero order level correlations between the classroom percent black and the results of achievement tests were negative and statistically significant for both white and black students. When controlled for I.Q. and SES, however, the resulting second-order partial correlations were not significant for either racial group.

The two other studies are both based on the EEO survey described above. The United States Commission on Civil Rights conducted an extensive cross-tabular re-analysis of this data using classroom racial composition (percent white) the previous year as the independent variable. These analyses were based on data for black ninth and twelfth grade students from the metropolitan Northeast (U.S. Commission, 1967, Vol. 2). Extensive efforts were made to control for the effects of other variables which might influence the academic achievement of students. The Commission's primary finding was that classroom percent white had a positive effect on the academic achievement of both black and white students even after controlling for various combinations of family SES, school SES, classroom SES, student body characteristics, and measures of school quality (U.S. Commission, 1967, Vol. 2, Tables 4.1 - 7.30). Similar but usually weaker effects were found for school racial composition and the earliest grade integrated.

McPartland (1968) also conducted a study based on the EEO data. Like the Commission he focused attention on black ninth graders from the metropolitan Northeast. Academic achievement was measured by the results of the standardized verbal achievement tests administered as

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part of the survey. McPartland found that differences in achievement consistently favored the more integrated students. This was true even when the analysis controlled for family background (p. 153 f), program of study or academic tract (p. 165), instructional quality (p. 269), and classroom SES (p. 276). McPartland also reports that the effects of classroom racial composition are stronger and more consistent than the effects of school racial composition (p. 165).

The Commission explained that the inconsistency between their own and Coleman's findings may be caused by: 1) limitations in Coleman's sample; 2) limitations in regression analysis; 3) and, limitations through use of school rather than classroom as a measure of the racial composition of educational settings (U.S. Commission, 1967, Vol. 2, p. 41). McPartland's findings give additional emphasis to the third point. St. John points out, however, that at the ninth grade level (the grade level studied by both the Commission and McPartland) "many pupils move from segregated elementary schools to desegregated secondary schools. Last year's experience may be a proxy for eight years' experience and, therefore, more influential than a few weeks' experience 'this year'." (St. John, 1970, p. 120). It is also possible that some of the residual effects which both the Commission and McPartland attribute to classroom racial composition may result from limitations in the measures used to control for other variables, particularly family and school or classroom SES (Lewis, 1967, p. 41 f).

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C. Summary and Conclusions

Despite their individual limitations the studies reviewed in this chapter do provide some evidence concerning the relationship between the academic achievement of students and the racial composition of educational settings.

For black students most studies have found that desegregation--of entire school systems or individuals--has either a positive effect or no effect at all on academic achievement. That is black students generally perform better but definitely not worse in desegregated (pre-dominantly white) educational settings. It should be noted that for the few cases in which they occur negative effects can apparently be attributed to sampling or methodological difficulties.

In general studies in which nominal definitions such as segregated or non-segregated were used all report a positive effect on the academic achievement of black students from being in majority white settings (Anderson, 1966; Hansen, 1960; Jessup, 1967; Katzenmeyer, 1963; Lesser, 1964; Lockwood, 1967; Samuels, 1958; Stallings, 1959; Wilson, 1959 and 1963; Wolff, 1962). Similar results have been reported even after controlling for third variables such as family background and previous achievement (Anderson, 1966; Jessup, 1967; Katzenmeyer, 1963; Lockwood, 1967; Wilson, 1959 and 1963).

On the other hand the results of special programs to bus black students to pre-dominately white schools are inconclusive. Several of these studies report finding a positive effect on the academic achievement of black students (Mahan, 1968; Rock et. al., 1968; U.S. Commission,

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1967, Vol. 1, p. 127 ff). But comparable programs report no effect (Beker, 1967; Carrigan, 1969; Purl, 1970; Walberg, 1969). The lack of consistency in the findings of these studies is particularly important because in many ways they offered the best opportunities to approximate the conditions of experimental research designs. That is, they provided the opportunity to utilize experimental and control groups and to obtain both pre and post test measures of achievement. Unfortunately none of the studies could completely conform to the requirements of experimental designs. This is particularly true in terms of the comparability of experimental and control group members. In fact, it seems likely that formal selection procedures combined with parental preference biased most of the studies in favor of the bussed students. Similar limitations exist in terms of the conditions to which students were exposed. For example, two of the studies which report gains favoring the bussed students were based on programs in which the bussed students were attending presumably superior suburban schools (Mahan, 1968; Rock et. al., 1968).

Conflicting findings are also reported by those studies in which the racial composition of educational settings is defined as a continuous variable. Four of these studies report no significant effect for racial composition after controlling for a variety of third variables but particularly family and school SES (Coleman, 1966; Metzen, 1966; St. John, 1962; Wilson, 1967). Three other studies report a residual effect even after controlling for similar third variables. (McPartland, 1968; St. John and Smith, 1969; U.S. Commission, 1967, Vol. 2). Two of the studies reporting a residual effect were based on classroom

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rather than school racial composition, and this may help account for their conflicting findings (McPartland, 1968; U.S. Commission, 1967, Vol. 2). Despite these difficulties, however, all of these studies do present rather convincing evidence that social class composition of either schools or classrooms does have an effect on the academic achievement of black students.

There are fewer findings concerning the effects of racial composition on the academic achievement of white students. Hansen (1960) and Stallings (1959) both report that the desegregation of entire school systems did not have a negative effect on the academic performance of white students in these systems. However, the elimination of formal segregation did not necessarily produce any changes in the actual racial composition of schools or classrooms. Thus it is very likely that these white students continued to attend de-facto segregated white schools. Several more recent studies have reported a negative relationship between percent black and the academic achievement of white students (Coleman, 1966; Matzen, 1966; U.S. Commission, 1967, Vol. 2; Wilson, 1967). But with the exception of the Civil Rights Commission findings this relationship is reduced to zero after controlling for family and school SES.

Our analysis of the best available evidence suggests the following conclusions concerning the relationship between the racial composition of educational settings and the academic achievement of both black and white students.

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First, "integration"--however defined--does not appear to have a negative effect on the academic achievement of black students. Nor is there any evidence of a negative effect even when white students are in a numerical majority. In fact, only four studies reported higher levels of achievement among the segregated students (Samuels, 1958; Wolman, 1964; Mahan, 1968; Walberg, 1969). In all of these cases, however, the negative results are not particularly convincing. In Samuel's study the same integrated students who had lower test scores at the second grade level had higher scores that the segregated students from the third through the sixth grades. In Wolman's study there is evidence that students from higher SES families tended to remain in the segregated school. Mahan's sample was extremely small and he reported positive effects at the lower grade levels. Due to the lack of co-operation from the Boston Public school system, Walberg was limited in terms of obtaining control group members for his study. As a result the negative finding is based on an extremely small number of students (29) who were not carefully matched with participating METCO students. Despite our conclusion it should be borne in mind that negative effects could be masked by inadequate measures of important control variables such as family background or school characteristics.

Second, there is no evidence that integration--merely attending school with blacks--has a negative effect on the academic achievement of white students. Nor is there sufficient evidence to indicate a negative effect even when white students are enrolled in majority black settings. Those few studies that do present findings for white students

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either report finding no original differences in achievement or no differences after controlling for third variables--particularly family SES. The only exception to this pattern are the residual effects reported by the Civil Rights Commission. As indicated above, however, these residual effects may be exaggerated because of limitations in the items used to measure control variables.

Finally, there is little evidence of a positive relationship between the academic achievement of black students and the proportion of white students they have as school or class mates. Most reports of a positive statistical relationship are apparently the result of common causal relationships with third variables and are therefore spurious. Thus after controlling for variables such as family background, school quality, and school environment, the original relationship between racial composition and academic achievement disappear or are drastically reduced.

The major exceptions to this pattern are the studies by St. John and Smith (1969), the U.S. Commission (1967), Anderson (1966), and McPartland (1968). All of these studies however, were cross-sectional in design and did not control for possible differences in the original abilities of the students being compared. The results of bussing studies [from which such information could have been available] are inconclusive. Two of the studies which report gains in achievement favoring the bussed students were based on programs in which central city students were bussed to presumably superior suburban schools (Rock, 1968 and Mahan, 1968). The findings from programs which combined bussing with compensatory education programs for the segregated students are ambigu-

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ous. In fact, conflicting reports have been issued concerning two of the programs--Syracuse and Philadelphia. Finally, and despite its own limitations, Wilson's study found no independent effects for school racial composition after controlling for variations in early achievement and school SES. This was true even at the elementary grade level where school and classroom racial composition are most likely to be similar.

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III. Inter-racial Social Acceptance as a Conditioning Variable

A. Background

In Chapter 2 we concluded that present evidence does not indicate the existence of a causal relationship between academic achievement and the racial composition of educational settings. This conclusion, however, was not meant to preclude the possibility that such a relationship may exist. It should be noted that third variables are not always introduced as a test for spurious relationships. In fact, third variables may also function as:

> Intervening Variables - both the independent (X) and the dependent (Y) variables are part of a developmental sequence in which the independent variable has an effect on a third variable (t) which in turn has an effect on the dependent variable. (X ---- t ---- Y)
>
> Conditional Variable - the relationship between the independent variable (X) and the dependent variable (Y) is influenced by different conditions of a third variable (t). (Hyman, 1955, p. 283 f)

In the latter case it is possible for the relationship to be directly opposite under different conditions of the third variable. This study is intended to determine whether or not the effects of racial composition on academic achievement may be conditioned by the quality of inter-racial social relationships between students in bi-racial educational settings.

In his review of the evidence concerning the effects of school desegregation, Katz (1964) suggested several situational factors (conditions) which might influence the intellectual performance of blacks in

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desegregated educational settings. These factors included the social behavior of their white classmates and teachers, their (the blacks) own level of expectancy with regard to academic success, and their perception of the social consequences of failure. Of particular importance to our purposes in this paper is his suggestion that social acceptance by the white majority might facilitate but lack of acceptance might retard the academic performance of black students in majority white situations.

Although not made clear by Katz this suggestion is supported by two separate lines of reasoning. The first is based on reference group theory and the concept of anticipatory socialization. Essentially reference group theory argues that the attitudes and behavior of individuals will be influenced by the characteristics of those with whom they have or desire some form of social contact (Kelley, 1952; Merton, 1957; and Newcomb and Wilson, 1966). According to Merton, anticipatory socialization is a process in which individuals anticipate their membership in new groups by adopting the characteristics of the group in which they hope to achieve membership (Merton, 1955, p. 265). Assuming systematic differences in the characteristics of black and white students, Katz argues: 1) that for desegregated black students the academic standards and expectations of their white classmates will be higher than their own; 2) that blacks will desire acceptance by their white classmates; 3) and, "if this desire for acceptance is not inhibited or destroyed by sustained unfriendliness from white children, Negro pupils should tend to adopt the scholastic norms of the higher-status majority group."

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(Katz, 1964, p. 381). It should be noted that it is this line of reasoning which provides a basis for believing that socially accepted desegregated black students should perform better academically than black students who remain in segregated situations.

The second line of reasoning is derived from studies dealing with the effects of psychological stress on the task performance capabilities of individuals. Katz argues: that existing studies have demonstrated that psychological stress tends to impair an individuals' ability to perform complex and/or intellectually oriented tasks. Second, that other studies have shown that an individuals' vulnerability to stress is influenced by his social environment. That is whether or not social support is available from persons viewed as significant others in the social environment. Third, that for blacks stress-provoking conditions do exist in desegregated educational settings. For example, black students may fear (both realistically and unrealistically) competition with their white classmates. Finally, he concludes:

> given the prestige and power of the white majority group, rejection of Negro students by white classmates or teachers should tend to elicit emotional responses (fear, anger, and humiliation) that are detrimental to intellectual functioning. .....
> .....
> On the other hand acceptance of Negroes by white peers and adults should have a social facilitation effect upon their ability to learn. (Katz, 1964, p. 396)

The reader must note that this second line of reasoning does not involve the acceptance by desegregated blacks of new scholastic norms, etc., as a necessary step toward improved academic achievement. Rather

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it deals with the effect of social acceptance by whites on the academic achievement of desegregated blacks through its ability to exacerbate or ameliorate the psychological stress generated by a variety of other factors in the situation.

B. Black Students in Majority White Settings

Reference Groups and Scholastic Standards

Katz basically directed his suggestions to the particular problems faced by "desegregated" blacks. This is situations marked by a substantial and dramatic increase in the proposition of white peers and adults. However, much of his reasoning would be appropriate to the situation generally faced by black students in majority white educational settings. Existing research clearly supports the assumption that black students in majority white situations will be exposed to higher scholastic standards. Several studies have shown that average (schoolwide or classroom) scholastic achievement, motivation, and aspirations are generally higher in predominately white as opposed to majority black (or non-white) schools (Coleman, 1967; U.S. Commission, 1967; Wilson, 1967; McPartland, 1968; St. John and Smith, 1969). For example, McPartland reported this finding even for predominately white classrooms in majority black schools (McPartland, 1968, p. 114). Studies have also shown that even within majority white settings the average achievement level of black students is generally less than that of their

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white school or classmates. As a result, black students in majority white educational settings will be exposed to a peer environment that has scholastic standards which are higher than their personal standards as well as being higher than those in majority black settings.

As indicated above, a logical basis for believing these conditions could influence the academic achievement of students is afforded by reference group theory (Kelley, 1952; Merton, 1957; and Newcomb and Wilson, 1966). This theory argues that the attitudes and behavior of individuals will be influenced by the characteristics of those with whom they have (or desire) some form of social contact. Kelley further suggests that two distinct reference group functions can be identified:

1. Normative - A group functions as a normative reference group for a person to the extent that its evaluations of him are based upon the degree of his conformity to certain standards of behavior or attitude and to the extent that the delivery of rewards or punishments is conditional upon these evaluations.

2. Comparative - A group functions as a comparison reference group for an individual to the extent that the behavior, attitudes, circumstances, or other characteristics of its members represent standards or comparison points which he uses in making judgments and evaluations (Kelley, 1952).

Clearly schoolmates and/or classmates may qualify as either or both types of reference groups. We will, however, focus attention on the normative function.

It is not so clear, however, exactly how the social class characteristics or scholastic standards of classmates would operate to actually

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influence the performance of individual students. In terms of peers there are many different levels of social organization among students. These levels range from small interpersonal friendship groups through formal sub-divisions of a school to the entire student body. Participation in each level obviously has different implications for the individual student. Coleman suggests that the source of influence also varies with each level:

> The impact of the broadest level of the environment is through the awarding or withholding of informal status and recognition; that of the intermediate level of formal organizations on campus is through admittance, formal position, and informal status; and that of the level of disapproval and maintaining or breaking of the relation (Coleman, 1966, p. 253).

In his own work, Coleman has emphasized the existence of a schoolwide value system toward which all students are oriented and thus willing to modify their behavior. It is obvious that differences in the social class background of students would influence the character of these value systems (Coleman, 1961 and 1966; McDill and Coleman, 1965). At the opposite extreme, others argue that social class composition merely operates to determine the availability of students with particular characteristics but that influence on the behavior or attitudes of individuals is accomplished through personal association between students (Campbell and Alexander, 1965). In either case it is obvious that some form of social acceptance--or the potential for acceptance--is necessary in order to motivate individuals to conform.

The most direct evidence of the socializing influence of fellow students comes from a recent study of the response of freshmen to their

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first year in college (Wallace, 1966). Wallace found that during the course of the school year the expressed attitudes of freshmen toward getting good grades and graduate work tended more and more to conform to the attitudes of upper-classmen. Moreover, freshmen with the largest proportion of non-freshmen in their interpersonal environment were most likely to change in the direction of upper-classmen. He also reports that freshmen having large proportions of students with a positive orientation toward grades in their interpersonal environments were less likely to lower their own grade orientation.

Care must be exercised, however, in attempting to apply this finding to the position of blacks in majority white schools because the conditions may not be identical. The freshmen in the study were new recruits to an organization and they were essentially isolated from their original social environments. It is questionable whether such dramatic changes would have occurred among students who had an established social system of their own and/or who were able to maintain intense contacts with other social systems. It should also be noted that non-freshmen occupied a position presumably desired by freshmen and that the probability of freshmen upward mobility and ultimate acceptance by non-freshmen was high. Nevertheless, it seems reasonable to assume that because they have a numberical majority white students will tend to dominate the student social system(s) and thus function as a normative reference group for members of the black minority.

Some evidence of a possible effect from exposure to higher educational standards may be derived from the consistent finding of a strong

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positive relationship between social class integration and the academic achievement of both black and white students. That is the higher the SES of the educational setting the greater the academic achievement of the students. This finding persists even after controlling for various combinations of family background characteristics, previous achievement, and even measures of school quality (Coleman, 1967; McPartland, 1968; U.S. Commission, 1967; and Wilson, 1959, 1963, 1967). In addition to the studies reviewed above, a number of other studies have found a strong independent effect for school SES on academic achievement (Michael, 1961; Turner, 1964; and Boyle, 1966). Similar results have also been reported when educational or occupational aspirations are the dependent variable (Michael, 1961; Alexander and Campbell, 1964; Krauss, 1964; Turner, 1964; Campbell and Alexander, 1965; Sewell and Orlestein, 1965; Sewell and Armer, 1966; and Boyle, 1966).

These findings are not sufficient to establish the existence of a causal relationship between the academic achievement of students and the scholastic characteristics of their classmates. For example, the effects attributed to school SES may be over-estimated because of limitations in our measures of family background characteristics and/or school quality. However, combined with our knowledge of the social class differences between blacks and whites, the entire line of reasoning provides a basis for expecting socially accepted black students in majority white settings to perform better academically than black students who remain in majority black settings. Conversely one would not expect the achievement of non-accepted blacks to be influenced by the white environment;thus, their achievement should remain similar to that of their segregated counterparts.

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Social Acceptance--Facilitator and Threat

It is also possible to apply Katz's second line of reasoning to the general situation faced by black students in majority white educational settings. The experimental studies reviewed by Katz indicate that participation in bi-racial task-performing situations may be a stress-provoking experience for blacks. In addition, there is evidence that the self-confidence, personal satisfaction, and even performance capabilities of blacks may be inhibited in these situations. Finally, the vulnerability of blacks to stress was found to be greater in white dominated as compared to black dominated bi-racial situations. Clearly, majority white classrooms or schools must at least approximate the stress provoking conditions utilized in these experiments.

There is also good and consistent evidence of a positive relationship between the academic achievement of students and various measures of social acceptance or recognition received from classmates (Gronlund, 1959, Chapter 7). Although not as large as some would like, this finding is reported for studies based on the relationship between sociometric status and the results of both I.Q. and standardized achievement tests (Bonney, 1943, 1944, 1955; Bonney and Powell, 1953; Buswell, 1953; Grossman and Wrighter, 1948; Laughlin, 1954). Similar results are reported when academic marks are used (Brown, 1954; and Feinberg, 1953). In fact, the results are the same even when students are identified by classmates as scholastically oriented. For example, Coleman found that both boys and girls identified as scholars received more than the average number of choices as friends (Coleman, 1961, p. 146).

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Despite the consistency of this finding there is little evidence concerning the causal direction of the relationship. One explanation is that social recognition for academic achievement is part of a larger syndrome in which various kinds of achievement are rewarded with some form of social recognition or acceptance. In other words, achievement--including academic achievement--preceeds social acceptance. Some support for this line of reasoning is provided by the fact that students tend to choose classmates with characteristics similar to their own as friends (Gronlund, 1959, p. 201). Moreover, there is evidence that these similarities are considered when friendship choices are made (Austen and Thomson, 1948; Brown, 1954).

An alternative explanation argues that satisfactory interpersonal relations provide psychological support which frees the individual to devote more energy to academic pursuits and this results in higher grades. This would obviously be true only in an environment in which academic achievement was emphasized and/or rewarded to some degree. Despite variations in degree classrooms and schools clearly meet this criterion. This explanation is obviously similar to the one offered by Katz to explain the effects of social acceptance by whites on the academic achievement of desegregated black students. That is, social acceptance by significant others may hinder or facilitate task performance by increasing or decreasing the psychological stress to which an individual is exposed. Following this line of reasoning one would expect that in majority white settings the academic achievement of black stu-

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dents who are socially accepted by their white classmates would be higher than the achievement of their non-accepted counterparts.

Additional Evidence

It should be noted at this point that most of the studies reviewed in Chapter 2 did not take account of the possible effects that the relations between blacks and whites could have on the academic achievement of blacks. This is particularly unfortunate because in these studies all of the "desegregated," "integrated," or racially "balanced" settings actually represented situations in which whites were in the numerical majority. Thus, following either of the lines of reasoning presented above, social acceptance by their white classmates could have influenced the academic performance of those black students considered to be in integrated settings. There is, however, some evidence that this may be the case. Even after controlling for family and school SES the Civil Rights Commission reports finding that:

> Negro student achievement and attitudes in desegregated classes are related to the degree of interracial tension within the school. (U.S. Commission, 1967, Vol. 2, p. 42)

> Negro students in desegregated situations who have close white friends are somewhat higher in average academic performance, in college aspirations, and in their feelings of environment control. (U.S. Commission, 1957, Vol. 2, p. 43)

McPartland reports similar results in his re-analysis of the E.E.O.S. data for black ninth graders (McPartland, 1968, p. 296 f).

A careful analysis of the Commissions' data, however, reveals that the reported positive effect of having close white friends in desegre-

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gated settings really only applies to majority white settings--where the proportion of white classmates was more than half (U.S. Commission, 1967, Vol. 2, Table 6.9). In fact, the effect decreases as the proportion white decreases and is actually negative in all black settings. That is, in all black classes the academic achievement of black students who did not have white friends was greater than the achievement of students with close white friends. This was true even when controlled for various combinations of family and school SES. Moreover, the negative effect was strongest in the high SES schools regardless of parental background. That is, the negative effect of having close white friends was greatest in those all-black settings having the greatest proportions of students from high SES families.

C. White Students in Majority Black Settings

Although not intended by Katz it would seem that his ideas concerning the importance of social relationships between blacks and whites in bi-racial settings may also be applied to whites, particularly when the whites are in majority black educational settings. Such settings would generally be of lower average SES than majority white settings. Thus when compared to majority white settings we can assume that the scholastic standards of classmates would generally depress rather than enhance the academic achievement of students including whites.

Unfortunately, most studies do not provide comparisons of the characteristics of blacks and whites in majority black educational settings.

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This may be because most of the underlying motivation for such studies was directed toward demonstrating that blacks performed better in integrated or majority white settings. Or in showing that the enrollment of a few blacks did not have a detrimental effect on the achievement level of the white majority. In any case it is not clear whether the lower scholastic standards in majority black classrooms would be higher, lower, or the same as these held by the average white student exposed to them. Logical arguments can be developed for any of the three alternatives.

Table 3-A was created from two separate tables published by the Civil Rights Commission (U.S. Commission, 1967, Vol. 2, Tables 4:11 and 8.6). This table shows that, even when controlling for family and school SES, white students in majority black settings had higher verbal achievement scores than black students in the same type of setting. If valid this would provide some evidence for believing that in majority black setting the average white student will be exposed to scholastic standards lower than his own. Unfortunately, this one finding is not enough to warrant predictions concerning the effects of systemwide scholastic standards on the academic achievement of the average white student.

(Table 3-A)

The appropriateness of the facilitation--threat function of social acceptance appears to be more obvious. First, as indicated, social acceptance under any circumstances may facilitate academic achievement by providing psychological support which frees the individual to devote more energy to academic pursuits. It seems reasonable to assume that

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Table 3-A

AVERAGE VERBAL ACHIEVEMENT OF METROPOLITAN NORTHEAST 12TH GRADE STUDENTS IN MAJORITY BLACK CLASSES BY PARENT'S EDUCATIONS, AVERAGE SCHOOLWIDE PARENT'S EDUCATION, AND RACE

Parent's Education	Schoolwide Average Parent's Education	Blacks	Whites
Less than H.S. graduate	Less than H.S. graduate	266	276
	H.S. graduate or more	273	284
H.S. graduate	Less than H.S. graduate	265	279
	H.S. graduate or more	273	288
At least some college	Less than H.S. graduate	269	289
	H.S. graduate or more	283	297

* This table was constructed from data presented in Tables 4:11 and 8.6 of the U.S. Commission Report - 1967, Vol. 2.

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this would apply to the acceptance of whites by blacks in majority black settings. Second, the task performance capabilities of whites as well as blacks may be inhibited by psychological stress. Third, it seems reasonable to expect that for whites, attending school in majority black settings may exacerbate the normal stress provoking aspects of school. Some evidence that whites may respond in a negative manner to such situations is provided by Katz himself. In one study of equal status bi-racial work teams, Katz found that high "authoritarian" whites demonstrated less negative responses to blacks than "non-authoritarians" (Katz and Benjamin, 1960). Katz suggests that this was due to attempts on their part to conceal their real attitudes toward blacks. Findings from a second study indicate that whites who were forced to work on equal terms with blacks were less willing to have the same partner in future experiments than whites who had been allowed advantages over their black partners (Katz and Cohen, 1962). Finally, Justman has found that white students were friendlier to non-white (mostly black) students as the proportion of black students in the classroom increased.

There is also some evidence that the quality of social relationships between blacks and whites does influence the academic achievement of white students in majority black settings. Although unemphasized by the Civil Rights Commission, Table 8:12 of their report shows that even after controlling for family background the academic achievement of white students decreased as teacher reports of school racial tensions increased (U.S. Commission, 1967, p. 142). That is, white students in majority black settings apparently performed better academically in those situations in

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which interracial tensions were minimal. It seems reasonable to assume that in some way these tensions rates reflect the degree of social acceptance between the races. Thus it appears that the lack of social acceptance from blacks may have a depressing effect on the academic achievement of white students in majority black settings.

D. Hypotheses

Following the two lines of reasoning developed by Katz and elaborated above we propose to investigate the relationships between classroom racial composition, the character of social relations between students, and academic achievement for a sample of sixth grade public school students. Three separate sets of hypotheses will be tested using data for both black and white students. In addition, all analyses will be conducted separately for both boys and girls. When appropriate separate findings will be presented for each of the four race-sex cohorts. This approach has been taken in anticipation of the possibility of differential results for girls and boys. For example, Armor found that being in integrated schools had a different impact on the college aspirations of black girls and boys (Armor, 1967).

Racial Composition and Friendship Choices

The first set of hypotheses deals with the effects of classroom racial composition on the friendships developed between students in the same classrooms. In the development of his ideas concerning the conditional effects

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of social acceptance on academic achievement, Katz emphasized that desegregated blacks were likely to be subjected to social isolation and rejection. He dramatized this point using the experiences of black students who had just participated in the desegregation of several Southern colleges and universities. Additional support was drawn from studies based on the inter-racial friendship choices of northern students. These studies found that even from an early age children demonstrated a preference for members of their own racial (or ethnic) group as friends (Criswell, 1937, 1939; Lundberg and Dickson, 1952a, 1952b; Webster, 1960; St. John, 1964; Gottlieb and TenHouten, 1965; Gorden, 1966; Justman, 1968).

A re-analysis of this literature reveals that conclusions concerning the social isolation or rejection between students of different races is not warranted by the finding of own-group preference. First, being selected as a best friend is obviously influenced by factors other than race. For example, studies have shown that students tend to choose friends from the same socio-economic strata as their own (Bonney, 1946; Hollingshead, 1949; Lundberg and Beazley, 1948; Neugarten, 1946). Other studies have shown that they also tend to choose persons who live near them as friends (Gallagher, 1958). Finally, at least two studies have found that the tendency for students to prefer members of their own sex as friends is greater than their preference for members of their own racial group (Criswell, 1937; Raths and Schweickart, 1946).

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Second, and this should be obvious, the failure to choose individuals as best friends does not necessarily imply social rejection--except perhaps for the role of best friend. Even here we must be careful. Most sociometric studies have placed arbitrary limits on the number of persons who can be chosen and usually use categories such as "best friend." The failure to choose individuals as best friend does not necessarily mean that they have been rejected. In fact, three studies not limited by this approach report finding a fairly high level of social acceptance between members of different racial groups. This was true even though the students demonstrated a preference for members of their own racial group (Raths and Schweichart, 1946; Gronlund, 1959; Justman, 1968).

There is also evidence that suggests the relative size of different racial groups (racial composition) may have an effect on the quality of social relationships which develop between students. In an early study, Lundberg and Dickson (1952a and 1952b) compared own group self-preference scores of both non-Jewish whites and ethnic minority group members in two high schools. The two schools were 61 and 92 percent white. They found that the average self-preference score of whites was lower, but that minority group self-preference scores were higher in the school that was overwhelmingly white. This finding raises the possibility that the tendency of students to prefer members of their own race as friends may increase as the proportion of students from their own race decreases.

A related finding was reported in a recent study of an "Open Enrollment" bussing program in New York City (Justman, 1968). This program

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involved the bussing of students (blacks and Puerto Ricans) to predominately white schools. At the end of the school year students were asked to rate all of their classmates using the following scale: 1) good friend; 2) not a friend, but okay; 3) not okay. Using mean rating scores derived from this test, Justman reports that, "Open Enrollment children are accepted more readily by resident pupils when the number of Open Enrollment pupils in a class is relatively large, while resident pupils are accepted more readily by Open Enrollment pupils when the number of Open Enrollment pupils in a class is relatively small." (Justman, 1968, p. 34). That is both resident pupils (white) and Open Enrollment pupils (non-white) were friendlier to members of the other race as the proportion of own race students in the classroom decreased. Although not emphasized by Justman, both groups also tended to be friendlier to members of their own race as the proportion of students of their own race decreased.

These are interesting findings because they not only demonstrate that racial composition may have an effect on the social relationships between students, they also indicate that this effect may be similar for members of numerical minorities or majorities regardless of their racial identification. Combining the findings reported by Lundberg and Dickson (that own group reference decreases as percent own group decreases) with the findings reported by Justman (that students are friendlier to members of both their own and the other race as the percent own group decreases) we have developed the following hypotheses:

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1.a. Intra-racial Friendships

The greater the percent own race in the classroom the lower (less friendly) the friendship ratings given to classmates of the same race.

1.b. Inter-racial Friendships

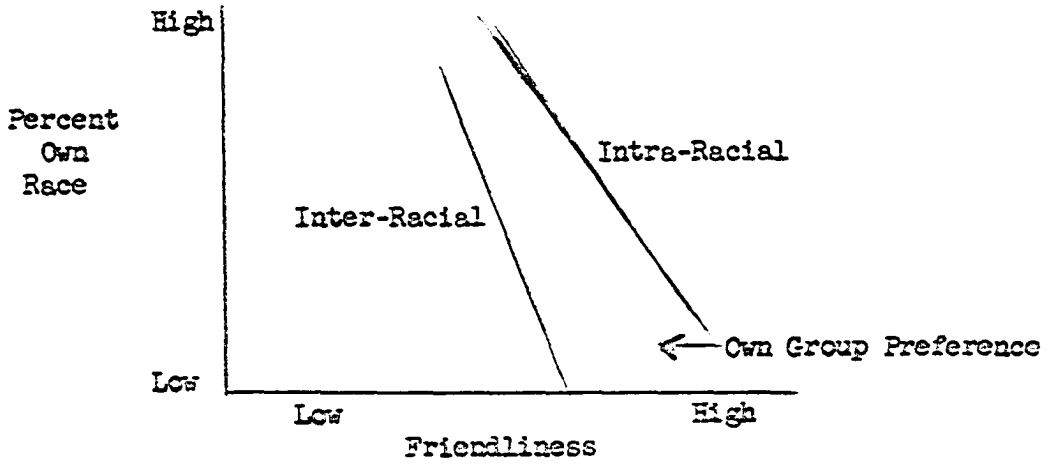
The greater the percent own race in the classroom the lower (less friendly) the friendship ratings given to classmates of the other race.

1.c. Own Group Preference

The greater the percent own race in the classroom the lower (less preference for own group) the tendency of students to prefer classmates of their own race as friends.

A graphic representation of all three hypotheses is presented below in Figure 3:1.

Figure 3:1 - Hypothesized Relationships Between Classroom Racial Composition and Intra-Racial and Inter-Racial Friendliness and Own Group Preference



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Social Acceptance and Academic Achievement

As reported above most studies have found a positive relationship between the social acceptance of students by their classmates and their academic achievement (Gronlund, 1958). That is the greater the social acceptance of students the higher their academic achievement. Our next set of hypotheses deals with the effects on this relationship of both the race of students and the racial composition of their classrooms. The two hypotheses are derived directly from the finding of a positive relationship between social acceptance and academic achievement. They are:

> 2.a. The greater their social acceptance by members of their own race (intra-racial) the greater the academic achievement of students.
>
> 2.b. The greater their social acceptance by members of the other racial group (inter-racial) the greater the academic achievement of students.

In previous sections we have argued that when students are in a racial minority social acceptance by members of the majority would facilitate--but lack of acceptance hinder--the academic achievement of students. That is we have assumed the existence of a positive relationship between the academic achievement of students and their social acceptance by members of the classroom majority regardless of the racial identification of either group. In this section we will determine whether or not this relationship actually exists. Specifically our hypothesis is:

> 2.c. In racially mixed classrooms the greater their social acceptance by majority group members the greater the academic achievement of minority group members.

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This hypothesis is derived from 1) the general finding of a positive relationship between social acceptance and academic achievement 2) and the assumption that members of a racial majority represent a socially significant group within the context of a classroom. Some support for this assumption may be derived from the finding that students tend to be friendlier to classmates of the other race as the proportion own race in the classroom decreases (Justman, 1968). In addition, there is evidence that school social systems are likely to be controlled by whichever racial group happens to be in the numerical majority (Gottlieb and Ten Houten, 1965).

This line of reasoning can also be extended to our expectations for the relationship between social acceptance and academic achievement for members of the majority group themselves.

> 2.d. In racially mixed classrooms the greater their acceptance by other members of the classroom majority the greater the academic achievement of majority group members.

Racial Composition and Academic Achievement

The final set of hypotheses to be tested is derived directly from our review of the literature on academic achievement and racial composition and our elaboration of the possible conditioning effects of social acceptance. Based on our review of existing studies our first hypothesis is that:

> 3.a. When family SES, average classroom SES, and previous academic achievement are controlled, there will be no relationship between the academic achievement of students--both black and white--and the racial composition of their classrooms.

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Because of different implications concerning academic standards in majority white or majority black settings the rationale for this hypothesis and those that follow will be presented separately for black and for white students. The hypothesis for black students is based on the following assumptions: 1) that scholastic standards are likely to be higher in majority white than in majority black classrooms; 2) that in majority white classrooms social acceptance by white classmates will encourage black students to accept these higher standards; 3) that in any setting social acceptance by members of the racial majority will facilitate--but lack of acceptance hinder--the academic performance of students. Combining these assumptions we have created a four-celled table in which the axes are classroom racial composition and social acceptance by majority group members.

Figure 3:2 - Classroom Racial Composition
By Majority Group Social Acceptance

	Classroom Racial Composition		
Majority Group Social Acceptance	Majority Other Race	Majority Own Race	
Yes	A	B	(A & B)
No	C	D	(C & D)
	(A & C)	(B & D)	

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In theory we could develop hypotheses concerning the relative levels of achievement between students in each of these cells. For example, based on our assumptions we would expect the academic achievement of students in cell A to be higher than the achievement of students in any of the other cells. Conversely we would expect students in cell D to have the lowest level of achievement. Our primary interest, however, is to determine whether or not social acceptance by members of the white majority conditions the effects of classroom racial composition on the academic achievement of black students. Therefore, we have not developed hypotheses concerning the relationship of achievement levels between most of the cells.

The specific hypotheses to be tested for black students are:

3.b. The academic achievement of black students in majority white classrooms who are socially accepted by their white classmates will be greater than the academic achievement of black students in majority black classrooms. (A greater than B & D)

3.c. The academic achievement of black students in majority white classrooms who are not socially accepted by their white classmates will be lower than the academic achievement of black students in majority black classrooms. (C less than B & D)

Hypothesis "3.b." is based on the assumption that social acceptance by members of the white majority will encourage black students to accept the higher scholastic standards plus enhance their performance capabilities by reducing the psychological stress to which they are subjected. Conversely, hypothesis "3.c." assumes that the scholastic standards of non-

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accepted students will not be increased and that their performance capabilities will actually be reduced because of the psychological stress to which they are exposed.

The hypotheses for white students are derived from the same line of reasoning used for black students. However, our basic assumptions have different implications. Specifically, we assume: 1) that the scholastic standards are likely to be lower in majority black than in majority white classrooms; 2) in majority black classrooms social acceptance by blacks will encourage white students to accept (or maintain) these lower standards; 3) and, in any setting social acceptance by members of the racial majority will facilitate--but lack of acceptance hinder--the academic performance of students.

Based on these assumptions we can hypothesize that:

> 3.d. The academic achievement of white students in majority black classrooms who are socially accepted by their black classmates will be less than the academic achievement of white students in majority white classrooms. (A less than B ÷ D)

This hypothesis is based on the assumptions that socially accepted white students will accept lower scholastic standards and thus have a lower level of achievement even though their performance capabilities are not hindered by social rejection or isolation on the part of the black majority.

Our second hypothesis for white students is:

> 3.e. The academic achievement of white students in majority black classrooms who are not socially accepted by their black classmates will be less than the academic achievement of white students in majority white classrooms. (C less than B ÷ D)

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This hypothesis is based on the assumption that non-accepted students will maintain their original scholastic standards (presumably higher) but their performance capabilities will be hindered by their lack of acceptance from the black majority.

Summary of Hypotheses

1. Racial Composition and Friendship Choices

   a. Intra-racial Friendships

      The greater the percent own race in the classroom the lower (less friendly) the friendship ratings given to classmates of the same race.

   b. Inter-racial Friendships

      The greater the percent own race in the classroom the lower (less friendly) the friendship ratings given to classmates of the other race.

   c. Own Group Preference

      The greater the percent own race in the classroom the lower (less preference for own group) the tendency of students to prefer classmates of their own race as friends.

2. Social Acceptance and Academic Achievement

   a. The greater their social acceptance by members of their own race (intra-racial) the greater the academic achievement of students.

   b. The greater their social acceptance by members of the other race (inter-racial) the greater the academic achievement of students.

   c. In racially mixed classrooms the greater their social acceptance by majority group members the greater the academic achievement of minority group members.

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d. In racially mixed classrooms the greater their acceptance by other members of the classroom majority the greater the academic achievement of majority group members.

3. Racial Composition and Academic Achievement

a. When family SES, average classroom SES, and previous academic achievement are controlled there will be no relationship between the academic achievement of students--both black and white--and the racial composition of their classrooms.

b. The academic achievement of black students in majority white classrooms who are socially accepted by their white classmates will be greater than the academic achievement of black students in majority black classrooms.

c. The academic achievement of black students in majority white classrooms who are not socially accepted by their white classmates will be lower than the academic achievement of black students in majority black classrooms.

d. The academic achievement of white students in majority black classrooms who are socially accepted by their black classmates will be less than the academic achievement of white students in majority white classrooms.

e. The academic achievement of white students in majority black classrooms who are not socially accepted by their black classmates will be less than the academic achievement of white students in majority white classrooms.

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IV. Procedures

A. The Sample

Preliminary work on this project was initiated during the Fall of 1966 when Dr. Nancy St. John requested the cooperation of the Boston School Department in a study of the educational effects of school racial composition (St. John, 1971). In response to this request School Department officials made available estimates by elementary school principals of the racial composition of their sixth grade classrooms. The sixth grade had already been selected as the level at which the study would be conducted for the following reasons:

1. We wanted to study pupils midway in their school careers, at a point at which we could evaluate the cumulative effect of elementary education and could get a Time I measurement for a possible longitudinal examination of the effect of integrated secondary schooling.

2. We wanted to reach students at an age at which they must make important career decisions; but before most of the eventual dropouts had yet left school.

3. We wanted to study one of the grade levels chosen by Coleman so as to be able to compare our findings with his. (St. John, 1971)

This racial census revealed that as of October 1, 1966, 46 out of 166 elementary schools had five or more black students registered in the sixth grade. These 46 schools and their principals were visited during the early part of December, and additional information concerning each school was obtained. This information included:

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1. identification of special educational programs especially those designed for "culturally deprived" or "gifted" students,

2. the racial composition of the teaching staff,

3. estimates of the average social class of students in the school.

The information obtained as to the racial and social class compositions of the schools was then used to draw a sample of schools representing all of the social class and racial mixture of schools in which black students were enrolled. Specifically, the 46 schools with five or more black sixth graders were classified according to two criteria: current school racial composition and current school social class. The determination of school racial composition was based on the official school racial census as of October, 1966, conducted under the direction of the Massachusetts Department of Education. Five school percent black strata were used for sampling purposes--under 20%, 21% - 40%, 41% - 60%, 61% - 89%, and 90% - 100%. Estimates of school social class composition were obtained through the judgment of experts. Specifically, the principal of each school was asked to estimate the social class level of his school using a four point scale ranging from low to high. These estimates were then reviewed and in a few cases revised by the School Department Assistant Superintendent in charge of Elementary Education and the "school liaison officer" from the Boston Redevelopment Authority.

The classifatory procedures used resulted in twenty racial-social class strata. The distribution of schools according to these strata is presented in Table 4-A. No schools fell into six of the strata and four

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of these empty cells are in the highest social class category. In fact, only one school, the Stuart, was rated as "high" social class by our panel. This is not particularly surprising, given that we were working in a central city school system and had selected only those schools with at least five black students enrolled in the sixth grade. For sampling purposes the Stuart school was included in the next lowest social class strata and the total number of sampling strata reduced from twenty to fifteen.

(Table 4-A)

Several schools were eliminated from the final sampling populations:

1. one-sex schools--schools officially described as enrolling students of one sex. (Dearborn, Dudley, Gaston, and Hart)

2. a school that was part of an experimental sub-system within the Boston Public School System. (Boardman)

3. those schools which were 20% or more black and had only one sixth grade classroom. (Emerson, Fenwick, Bacon, Rochambeau, Audobon, Prince, Faneuil, Academy Hill, Higginson, Farragut, and Perkins)

The elimination of these schools left thirty schools in thirteen different strata. Six of the strata contained only one school and each of these schools were included in the study. One school was randomly selected for inclusion in the study from those strata having more than one school. The only exceptions to these procedures were: the inclusion of all but two of the schools with black enrollments of less than 20% and the inclusion of the Stuart school because of its original high

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Table 4-A - Stratification Matrix for Sample Schools

School	School Social Class Level		
Percentage Black	Low	Medium	High
5 blacks to 20% black		*Perry (3) Rochambeau (1)	*T. Roosevelt (1) *Stone (2) *Parkman (2) *Taft (2) *Hamilton (2) F.D. Roosevelt ( )
21 - 40%	*Jefferson (3)	*Wolcott (4) Winship (2) Gaston (4) Kennedy (3) Hart ( )	*Tileston (2) Kenny (3) Thompson (3) Prince (1) Faneuil (1) *Stuart (3)
40 - 60%	*Mason (2) Emerson (1)	*Paine (2) Audobon (1) Farragut (1)	*Mackey (3)
61 - 89%	*Tobin (2) Fenwick (1) Dearborn (4) Winthrop (3) Gibson (3)	*Hurley (3) Perkins (1)	
90 - 100%	*Dickerman (2) Bacon (1) Brooks (2)	*Baker (2) Dudley (2) Dillaway (2) Greenwood (4) Howe (3)	*Ellis (5) Academy Hill (1) Higginson (1) Garrison (2) Boardman (1)

* School included in the final sample of 18 schools

(N) Number of sixth grade classrooms in the school

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rating on school social class. Thus the actual sample of 18 schools is representative of co-educational elementary schools with two or more sixth grade classrooms and five or more black students enrolled at that grade level.

The sampling design called for two classrooms from each of the selected schools to be included in the study. Twelve of the 18 selected schools had only two sixth grade classrooms, and each of these were automatically included in the study. One school with only one classroom, the T. Roosevelt, was included to increase the number of black students attending schools with racial composition of less than 20 percent black. In four of the five schools with three or more classrooms, two classrooms were randomly selected to be included in the study. In the Perry school all three classrooms were included in order to increase the number of black students in majority white schools. These procedures resulted in the final selection of 36 sixth grade classrooms from 18 different schools.

The size and racial composition of the 36 selected classrooms is presented in Table 4-B. An analysis of this table reveals that for 21 of the 36 classrooms, the racial composition of the classrooms was within 5 percent of the racial composition of the school in which they were located. In an additional nine cases the racial composition of the school and its classrooms were within 10 percent of each other. For the remaining six classrooms (8, 12, 17, 18, 22, and 26) the difference between school and classroom racial composition never exceded 21 percent. In four of the five schools represented by these six cases the racial composition--percent black--of both sixth grade classrooms are equal to

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or greater than that of the school. Thus, the 36 selected classrooms appear to adequately reflect the racial composition of the schools from which they were selected.

(Table 4-B)

The figures presented in Table 4-B also rule out the possibility of racially segregated classrooms within schools. The difference in classroom racial composition for classrooms in the same school was less than 5 percent for nine of the seventeen schools with two or more classrooms. In five more schools the differences between classrooms were 10 percent or less and were accounted for by the additional enrollment of two or three black students. In the three remaining schools--Jefferson, Paine, and Perry--at least four black students were enrolled in every classroom. In fact, blacks represented at least 15 percent of the enrollment in each of these classrooms and shifts of no more than four black students would have resulted in similar racial compositions even between these classrooms.

The students included in the target sample were all those enrolled in the selected sixth grade classrooms during the week--March through May--that project staff members visited the school and for whom cumulative school records were available. In all, 957 students met these criteria. Five students were eliminated because a cumulative school record was not available. The distribution of these students by race or ethnicity and sex is presented in Table 4-C. The race and sex of students were determined by staff members through observations and consultations with class-

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Table 4-B - School and Classroom Racial Composition
Percent Black and Percent White

School	Class Room #	School % Black	Classroom N	% Black	% White
Baker	01	97	25	92 (23)	4 (1)
	02		24	92 (22)	8 (2)
Dickerman	03	99	26	92 (24)	4 (1)
	04		29	97 (28)	---
Ellis Annex	05	100	11	100.0 (11)	---
	06		13	100.0 (13)	---
Hamilton	07	20	22	27 (6)	64 (14)
	08		22	36 (8)	64 (14)
Hurley	09	72	27	67 (18)	15 (4)
	10		26	68.0 (17)	12.0 (3)
Jefferson	11	31	24	25.0 (6)	71 (17)
	12		23	52 (12)	48 (11)
Mackey	13	45	27	44 (12)	30 (8)
	14		33	46 (15)	24 (8)
Mason	15	44	24	42 (10)	58 (14)
	16		26	35 (9)	54 (14)
Paine	17	60	26	77 (20)	23 (6)
	18		28	39 (11)	61 (17)
Parkman	19	10	34	12 (4)	82 (28)
	20		33	12 (4)	88 (29)

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Table 4-B - Continued

School	Class Room #	School % Black	Classroom N	% Black	% White
Perry	21	7	27	15 (4)	82 (22)
	22		26	31 (8)	69 (18)
	23		26	15 (4)	81 (21)
T.Roosevelt	24	38	33	42 (14)	55 (18)
L.Stone	25	6	29	7 (2)	93 (27)
	26		29	17 (5)	83 (24)
Stuart	27	28	19	26 (5)	74 (14)
	28		24	29 (7)	67 (16)
Taft	29	23	24	13 (3)	87 (21)
	30		25	16.0 (4)	84.0 (21)
Tilestone	31	29	32	28 (9)	66 (21)
	32		32	34 (11)	66 (21)
Tobin	33	66	33	64 (21)	30 (10)
	34		31	60.0 (18)	40.0 (12)
Wolcott	35	29	32	34 (11)	66 (21)
	36		32	41 (13)	59 (19)

(N) = Number

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room teachers. The final sample of 957 students includes one student for whom we failed to determine the sex and the two students for whom we failed to determine race. Unfortunately, these ommissions were not discovered until after the data collection stages of the project had been completed and the Boston School system had closed for the summer. This dissertation will focus on the 909 students identified as black or white. Data on the 48 students identified as orientals, Puerto Rican, and other (American Indian) will be ignored because of their limited numbers.

(Table 4-C)

B. Data Collection

The data for this study were derived primarily from three main sources: official records of the Boston School Department; questionnaires administered to students, teachers, and principals; and observations of the selected classrooms by project staff members. All data were collected by members of the project staff during a period of at least a week spent in each of the selected schools.

Official School Department cumulative records for each student provided information concerning:

1. family background--specifically parental employment and occupational status, which parents were living at home, and the number of siblings;

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Table 4-C - Distribution of Sampled Students
By Race and Sex

	Race or Ethnicity					
Sex	Black	White	Oriental	Puerto Rican	Indians	Total
Boy	181	272	8	11	6	478**
Girl	231	224	11	10	---	476
Total	412 (43%)	*497 (52%)	19 (2%)	21 (2%)	6 (1%)	957

* The sex of one white student is unknown

** The race of two boys is unknown

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2. educational experience--previous schools attended, attendance record, failures, conduct and effort marks;

3. academic achievement--I.Q., arithmetic and reading achievement test scores, and marks in academic subjects.

During the week spent in each school, staff members obtained the names of every student officially enrolled in the selected classrooms. The cumulative school records of these students were checked and the types of information specified above extracted from the records. Cumulative records were not available for a few students. These were students who had recently entered the Boston school system for the first time, and for whom systematic information on previous educational experiences was not recorded. As indicated above, these students were dropped from the sample population.

Questionnaires were also developed to obtain information directly from students and members of the school's staff. Conceptual areas covered by student questionnaires included: educational and occupational aspirations, self-concept, racial attitudes, attitudes toward school, and friendship patterns within the classroom. The specific items used in this study will be described below in the section dealing with dependent, independent, and third variables. These questionnaires were administered to the target population of students in regular classroom settings. Whenever possible, students who were absent on the day that instruments were administered were given questionnaires on subsequent visits to the school. As in most cases where questionnaires or tests are administered by persons outside of the official school system, some students never filled

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out questionnaires. These students were included in the sample population, however, as long as cumulative school record data were available.

C. Description of Study Variables

Dependent Variables

A number of measures of classroom friendship have been used in this study, all of them derived from a sociometric test administered in the classroom. Specifically, alphabetical lists of all the students in a classroom were prepared for each of the 36 selected classrooms. Copies of the appropriate list were distributed in each classroom and a project staff member gave the following instructions to the students:

> Put a (1) in front of the names of all of your very best friends in this class.
>
> Now put a (2) in front of the names of your good friends--not best friends but good friends.
>
> Now put a (3) in front of the names of the kids who are not your friends but who are ok.
>
> Now put a (4) in front of the names of the students you don't know very well.

Later, the names of each list that remained unnumbered were assigned a (5) by members of the project staff. This was done on the assumption that these were classmates that the respondent did not like. These procedures produced a situation in which each student gave every other student in his classroom a friendship rating and in turn received a friendship rating from each of his classmates.

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The results of the friendship rating test have been averaged across a variety of sub-groups to create two distinct types of sociometric data for each student:

1. Popularity--the mean friendship rating received by him from specified sub-groups within his classroom.

2. Friendliness--the mean friendship rating given by him to members of specified sub-groups within his classroom.

It should be noted that this procedure will allow us to make comparisons between classrooms regardless of variations in the racial composition of the classrooms.

The distinction between the two sociometric variables is whether a particular student (or group of students) is the receiver (popularity) or the giver (friendliness) of the friendship rating. This distinction will be important in attempting to identify the social characteristics of popular or friendly students. It should be noted, however, that these variables are inter-changeable when our interest is focused on the character of social relationships between groups. For example, the average popularity score received by whites from blacks is merely an alternative way of describing the average friendliness score given by blacks to whites. The only difference between them is whether blacks or whites are the subject or object of the expression. Thus the conclusion that whites are more popular with blacks in majority black classrooms would be identical to the statement that blacks are friendlier to whites in majority black classrooms.

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Table 4-D presents the average popularity score received by each of the four race-sex cohorts from each of the four race-sex cohorts. For example, the figure 3.9 in the upper right hand cell of this table represents the average friendship rating received by (popularity) black girls from white boys. Conversely, Table 4-E presents the average friendship rating given by each cohort to the other cohorts. Thus in Table 4-E the upper right hand cell represents the average friendship rating given to (friendliness) black girls by white boys. Differences in mean scores and "N's" between the two tables are due to the fact that students who did not take the test received but did not give ratings. For example, 268 white boys were rated by other white boys (popularity) but only 249 white boys did the rating. Comparing the figures in the corresponding cells of each table we find that in eight cases the results are identical and that in only three of the remaining cases does the difference go as high as .2. Thus our empirical results demonstrate the converse nature of the relationship between our measures of popularity and friendliness.

(Table 4-D and Table 4-E)

In this paper we will use one table to discuss both popularity and friendliness whenever possible. For practical reasons the variable used in this case will be the popularity variable. This choice was made because the popularity variable provides the opportunity to control for the characteristics of the individual subject when looking at the relationship between peer group popularity and other variables.

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Table 4-D - Average Popularity Rating Received By Race-Sex Cohorts By Race and Sex of Givers

Race and Sex of Cohort Giving Rating	Popularity Ratings Received By			
	White Boys	White Girls	Black Boys	Black Girls
White Boy	2.3 (268)	3.8 (224)	2.4 (155)	3.9 (204)
White Girl	3.7 (264)	2.2 (221)	3.7 (119)	2.3 (153)
Black Boy	2.3 (248)	3.4 (202)	2.2 (174)	3.3 (222)
Black Girl	3.4 (271)	2.4 (224)	3.3 (180)	1.9 (230)

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Table 4-E - Average Friendships Ratings Received By Race-Sex Cohorts By Race and Sex of Givers

Race and Sex of Cohort Giving Rating	Friendship Ratings Received By White Boys	White Girls	Black Boys	Black Girls
White Boy	2.3 (249)	3.9 (248)	2.41 (238)	3.9 (252)
White Girl	3.8 (210)	2.2 (210)	3.9 (202)	2.4 (210)
Black Boy	2.5 (139)	3.5 (114)	2.2 (155)	3.3 (159)
Black Girl	3.6 (187)	2.4 (149)	3.4 (210)	1.9 (211)

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Both popularity and friendliness scores were created for each of the following sub-groups: white boys, white girls, black boys, and black girls. These scores have been used to create four separate variables (eight if popularity and friendliness are considered separately) for each student. They are:

1. Intra-racial within-sex popularity (Average friendship rating received from classmates of the same race and sex).

2. Inter-racial within-sex popularity (Average friendship rating received from classmates of the other race but the same sex).

3. Intra-racial popularity cross-sex (Average friendship rating received from classmates of the same race but the opposite sex).

4. Inter-racial cross-sex popularity (Average popularity rating received from classmates of the other race and opposite sex).

In order to test our hypothesis concerning the effect of classroom racial composition on the tendency of students to prefer members of their own race as friends we have also created a measure of the relative friendliness of students. This variable is defined as:

> the average friendliness rating given by each student to members of the other race minus the average rating given to members of his own race.

This formula produces a variable that ranges from a negative value (if the student is more friendly to members of the other race) to a positive value (if he is more friendly to members of his own race).

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Two different measures of academic achievement during the sixth grade year have been utilized in this study.

> Spring Reading Sixth Grade - the grade equivalent score for the average of paragraph and work meaning sub-tests of the Metropolitan Achievement Test administered in the spring of the sixth grade year.
>
> Grade Point Average Sixth Grade (GPA) - the numerical average of all marks received in academic subjects during the first three marking periods of the sixth grade.

High performances on both measures are part of the formal expectations for students. Moreover, there is usually a positive relationship between the performance of students on both measures. Thus, one would expect both grade point average and reading score to have similar relationships with other variables used in this study. It should be noted, however, that these measures do differ in terms of the implications that can be drawn from their use. The results of standardized tests are not usually known by students. Thus they cannot be used as the basis for ranking other students or in the selection of friends. On the other hand, students generally have some knowledge of the academic marks received by their classmates and could use this information in the selection of friends. These distinctions will clearly be important to any attempts to determine the causal direction of observed relationships between peer group popularity and academic achievement.

Independent Variables

Both peer group popularity and classroom racial composition are used as primary independent variables for this study. Our measures of peer group popularity have been described above and will not be repeated in this section.

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Classroom racial composition is defined as the percent own race in the sixth grade classroom in which each student was enrolled. Thus, classroom racial composition was determined separately for both white and black students. Table 4-B presents the racial composition--both percent white and percent black--for all 36 classrooms. For whites classroom percent own race ranged from a low of 4 percent to a high of 93 percent. Comparable figures for black students were 7 percent and 100 percent. It should be noted that our measure of classroom racial composition is based on the total number of students in each classroom despite the fact that blacks and whites did not always account for the entire number. In fact, 48 students were classified as Chinese or other. With the exception of four cases, however, these students accounted for less than 10 percent of each classroom and they have not been included in the analyses.

Third Variables (Controls)

Five different variables have been specifically selected for this study as third, or control, variables. They include a measure of family socio-economic status (Family SES), classroom SES, two measures of previous academic achievement (sixth grade I.Q. and Fall reading score sixth grade) and absences from school during the sixth grade. Each of these measures has been selected because of a known or expected relationship with one or both of the dependent variables for this study--peer group popularity or academic achievement.

The measurement of family SES presented a particularly difficult problem. Numerous measures were considered but the only information

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generally available from which such a measure could be developed was the occupation of the head of the household listed on the cumulative school records. There were, however, several limitations to the use of even this information. First, the occupation of a male head of household was missing for 11 percent of the white students and 27 percent of the black students. Even when the occupation of a male head of household was available it was not that of a father presently living with his child for 35 percent of the black students and 23 percent of the white students. This seemed to indicate a fairly high level of family instability among both our white and black students. Second, 21 percent of the white mothers and 35 percent of the black mothers were employed either as sole bread winners or in addition to their husbands. Finally, in many cases the school records seemed to indicate that the family was receiving public welfare. All in all it seemed advisable to create a family SES measure that would reflect family stability and the mother's as well as the father's contribution to the family's status.

The family SES measure finally used in this study is based on the head of household information coded according to Hollingshead's seven point scale (Hollingshead, 1949). The actual values assigned to each student were:

1. father's occupation--if the father was living with the family and the mother was not employed

or

2. the mean of father's and mother's occupation--if the father was living with the family and the mother was employed

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or

3. mother's occupation--if the father was not living with the family or if he was not employed

or

4. the lowest occupational level--if neither parent was employed and there was no visible source of income.

Table 4-F presents the family SES scores and the actual number of students meeting each criteria. Table 4-G presents the actual distribution of students on our final measure of family SES.

(Table 4-F and Table 4-G)

Table 4-H presents the zero order correlations between our measure of family SES and several measures of academic achievement. For three of the race-sex cohorts there is a statistical relationship between family SES and all four measures of achievement. For white boys, however, there is a statistical relationship only with Fall reading score and GPA. Moreover, the statistically significant correlations tend to be smaller for white boys than for any of the other cohorts. The lack of a consistent relationship between the family SES of white boys and their academic achievement was hard to believe and became the subject of additional analysis. We found that for white boys, father's occupation alone correlates better with academic achievement than our family SES measure. For example, the correlation with Fall reading is r = .23 for father's occupation compared to r = .14 for family SES. Even when father's occupation was used, however, the relationship with academic

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Table 4-F - Family SES Scores, By Basis of Assignment and Race

	Whites		Blacks	
	N	$\bar{X}$	N	$\bar{X}$
Father's Occupation	280	2.74	117	2.44
Mean Father and Mother	62	2.65	78	2.30
Mother's Occupation	41	2.39	67	2.22
No Income	76	1.00	114	1.00
Total	459	2.41	376	1.94
No Assignment	38		36	
	497		412	

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Table 4-G - Percentage Distribution of Family SES Scores by Race

Family SES Scores	Black $\bar{x}$ = 1.935	White $\bar{x}$ = 2.407
1	42 (159)	27 (124)
1.5	3 (11)	2 (6)
2.0	25 (94)	27 (124)
2.5	4 (13)	3 (15)
3.0	19 (72)	23 (106)
3.5	1 (5)	2 (7)
4.0	4 (15)	11 (54)
4.5	-- (1)	-- (2)
5.0	1 (2)	3 (14)
5.5	-- (1)	--
6.0	1 (3)	2 (9)
6.5	--	--
7.0	--	-- (1)
	(376)	(459)

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achievement was not as strong for white boys as for other cohorts. In fact, the correlation between father's occupation alone and I.Q. is not even statistically significant; r = .078.

(Table 4-H)

It is our conclusion that the lack of a relationship between SES and academic achievement is probably due to the over representation of low achieving middle class boys in our sample. This condition is apparently the result of a complicated relationship between parochial school attendance, SES, and academic achievement. Our evidence for this conclusion is as follows:

1. Boys are over represented in the white sample (55 percent). This would suggest that our sample has an additional recruitment source for white boys. One possible source would be differences in parochial school attendance.

2. In our sample fewer boys than girls have attended parochial school at previous grade levels (7 percent compared to 14 percent). This relationship holds true for each of the five preceeding grade levels. For example, 6 percent of the boys but 11 percent of the girls attended parochial school at the first grade level.

3. The SES (either father's occupation alone or our family SES measure) of boys who attended parochial schools is the same as the SES of boys who attended Boston Public schools for all six grades but their academic achievement is lower. Among the girls those who attended parochial school were lower in both academic achievement and SES. This would suggest the possibility that lower class parents tend to send girls rather than boys to parochial school regardless of their academic potential.

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Table 4-H - Zero Correlations of Family SES and Academic Achievement Measures By Race and Sex

Acedemic Achievement	Race-Sex Cohorts			
	White		Black	
	Boy	Girl	Boy	Girl
Fall Reading 6th	.14*	.26**	.31**	.27**
I.Q. 6th	.04	.26**	.33**	.21**
Spring Reading 6th	.07	.26**	.23**	.31**
GPA 6th	.17*	.28*	.16*	.22**

* Statistically significant at or below the .05 level for a two-tailed test

** Statistically significant at or below the .01 level for a two-tailed test

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4. The academic achievement of students whose fathers had the lowest occupational status (1) is greater than the academic achievement of the next highest group. This suggests that low achieving high SES students may be over represented in the sample.

5. The relationship between SES and academic achievement is stronger for those boys known to have spent all six years in the Boston Public schools than for the total sample of white boys. For example, using our measure of family SES the correlation with Fall reading is r = .236 compared to r = .14. For I.Q. it is r = .09 compared to r = .04. This suggests that low achieving but higher SES boys are entering the public school system from the parochial schools.

The net result of these trends would be a situation in which low achieving middle class boys were over represented and their presence would produce a weak (if any) relationship between SES and academic achievement. Regardless of the accuracy of our explanation, the lack of a consistent relationship between SES and achievement for white boys should be borne in mind when our findings are presented.

Family SES scores were averaged for all students in each of the 36 classrooms to create a classroom level measure of socio-economic status (class SES). This score was then assigned to every student in each of the separate classrooms. Because they are derived from the same data base our measures of family SES and class SES are not independent. Nevertheless the inclusion of a measure of classroom level social class is conceptually relevant and particularly important for white boys because of its high correlation with their academic achievement.

The remaining control variables are:

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Reading Fall 6th grade - the grade equivalent score for the average of paragraph and word meaning sub-tests of the Metropolitan Achievement Test administered in the Fall of the sixth grade.

I.Q. 6th grade - the score received on Kuhlman Anderson group test administered in the Fall of the sixth grade.

Absences 6th - the number of absences from school during the first three marking periods of the sixth grade.

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V. Student Social Relationships and the Effect of Classroom Racial Composition

The findings presented in this chapter focus on the social relationships between students in the 36 sampled classrooms and the effects of classroom racial composition on these relationships. The primary source of data for this analysis is the friendship rating test described above in Chapter IV. Briefly, this test asked each student to rate his degree of friendship with every other student in his classroom. Thus all students had the same opportunity to receive any of the five possible ratings regardless of the racial composition of the classroom. The results of this test were then averaged for a variety of sub-groups to create measures of the popularity (average rating received from) and friendliness (average rating given to) each of the sub-groups. These measures were then used to create eight different variables for each student.

Intra-racial within-sex popularity (and friendliness)
The average friendship rating received from (or given to) classmates of the same race and sex.

Inter-racial within-sex popularity (and friendliness)
The average friendship rating received from (or given to) classmates of the other race but of the same sex.

Intra-racial cross-sex popularity (and friendliness)
The average friendship rating received from (or given to) classmates of the same race but the opposite sex.

Inter-racial cross-sex popularity (and friendliness)
The average friendship rating received from (or given to) classmates of the other race and the opposite sex.

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As we reported in Chapter IV there is a converse relationship between our measures of friendliness and popularity. For example, the friendliness of whites to blacks is the converse of the popularity of blacks with whites. Whenever possible we will take advantage of this relationship and use only one table to discuss both popularity and friendliness. The actual variable used will depend upon our particular interests in each case. Thus popularity rather than friendliness will be used to test our first two hypotheses because it provides the opportunity to control for variations in the characteristics of the students who are being rated.

Before turning to our hypotheses concerning the effects of classroom racial composition we must be aware of the overall pattern of social relationships between students in our sample. Table 5-A presents the average friendship ratings given by each race-sex cohort to members of their own and the three other cohorts. In this case the friendliness variable has been used because we are specifically interested in the tendency of students to prefer members of their own race as friends. Looking at this table we find that each cohort appears to be friendlier to classmates of their own race (intra-racial) than to classmates of the other race (inter-racial). This is true both for the friendship ratings given to classmates of the same sex (within-sex) and those given to members of the opposite sex (cross-sex). In fact we find a consistent ordering in the values of the friendship ratings given by each cohort. All students appear to be friendliest to classmates of the same race and sex, less friendly to the other race but same sex, still less friendly to the

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same race but opposite sex, and least friendly to classmates of both the other race and opposite sex.

(Table 5-A)

The statistical significance of the differences between intra-racial and inter-racial friendship ratings have been tested using the standard formula for the difference between means for two correlated observations:

$$t = \frac{M_d - 0}{\sqrt{s_d^2 / N}}$$

Where:

N = number of unit observations

d = difference in observations $(x_1 - x_2)$

M = mean of difference observations $(\sum_d / N)$

S = variance of difference observations

$$\sum (d - M_d)^2 / N - 1$$

This test was selected because it makes allowances for the fact that the distributions of observations to be tested are derived from the same rather than independent populations (Winer, 1962, p. 39-43).

The results of these tests are presented in Table 5-B. Looking at this table we find that for all eight comparisons the resulting t-values are statistically significant at or below the .01 level for a two-tailed test. Given these results we can conclude that members of each cohort had a definite preference for members of their own race as friends. This is true both for classmates of the same and the opposite sex, despite the

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Table 5-A - Average Intra-Racial and Inter-Racial Friendship Rating* Given by Members of the Four Race-Sex Cohorts (Friendliness)

	Friendliness Measures			
	Within-Sex		Cross-Sex	
Race-Sex Cohorts	Intra-Racial	Inter-Racial	Intra-Racial	Inter-Racial
White Boys	2.3 (249)	2.4 (238)	3.9 (248)	3.9 (252)
White Girls	2.2 (210)	2.4 (210)	3.8 (210)	3.9 (202)
Black Boys	2.2 (155)	2.5 (139)	3.3 (159)	3.5 (114)
Black Girls	1.9 (211)	2.4 (149)	3.4 (210)	3.6 (187)

*Lower Score Means Friendlier Rating

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strong preference for members of their own sex demonstrated by members of all four cohorts. It appears, however, that black and white students may differ in the strength of their tendency to prefer friends of their own race. Looking at both the difference scores and the t-values in Table 5-B we find that preference for friends of their own race is greater among blacks than whites and greatest among black girls. At the other extreme white boys appear to have the least tendency to prefer classmates of their own race as friends. Our confidence in these differences is enhanced by the fact that the order of cohorts is identical for both within-sex and cross-sex choices.

(Table 5-B)

Several additional points must be made concerning the overall pattern of social relationships between students. First, we find, as did Raths and Schweickart (1946), that the average within-sex inter-racial friendship rating by all cohorts reveals a high degree of social acceptance between blacks and whites. In fact, the average inter-racial friendliness score represents a rating half way between being "okay" and being a "good friend." Thus blacks and whites do not appear to be drastically isolated from each other socially even though they do prefer members of their own race as friends. Moreover, members of each cohort are friendlier to classmates of the same sex (regardless of race) than to classmates of the same race but the opposite sex. Thus we find as did Criswell (1937) and Raths & Schweickart (1946) that the tendency to prefer classmates of the same sex as friends is greater than the preference for persons of the same race.

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Table 5-B - Difference in Means ($\bar{X}_1 - \bar{X}_2$) and t-Values for t-Tests of Differences in Means Between Intra-Racial and Inter-Racial Friendliness Ratings

	Difference in Friendliness to Own & Other Race Measures			
	Within-Sex		Cross-Sex	
Race-Sex Cohorts	Difference	t-Value	Difference	t-Value
White Boys	.16 (235)	3.0	.08 (248)	2.6
White Girls	.23 (210)	3.8	.15 (202)	3.5
Black Boys	.39 (135)	5.4	.22 (114)	3.7
Black Girls	.54 (148)	6.9	.21 (185)	4.4

All t-Values Statistically Significant At or Below the .01 Level for a Two-Tailed Test

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A. Intra-racial Friendships

The findings presented in this section are based on the effects of classroom racial composition on the social relationships between students of the same race (intra-racial). In Chapter III our hypothesis was presented in terms of the friendliness of students. As indicated above, however, we will actually test the relationship between classroom racial composition and the intra-racial popularity of students. Thus the hypothesis to be tested is:

> The greater the percent own race in the classroom the lower (less popular) the friendship ratings received from classmates of the same race.

In order to test this hypothesis Pearsonian correlation coefficients were calculated for classroom percent own race and the popularity ratings which students received from classmates of the same race. The results of these calculations are presented in Table 5-C.[1] In this table the columns identify the race-sex cohorts and the rows identify the specific popularity variable which has been correlated with classroom racial composition.

(Table 5-C)

Looking at Table 5-C we find that all of the correlation coefficients are in the predicted direction and that six of them are statistically significant at or below the .025 level for a one-tailed test. For whites

---

[1]Unless otherwise stated the numerical values of popularity measures (or friendliness) have been reversed in all tables, so that high numerical values correspond to high popularity.

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Table 5-C - Zero Order Correlations of Intra-Racial Popularity Measures on Classroom Percent Own Race

	Race-Sex Cohorts			
Intra-Racial Popularity Measures	Whites		Blacks	
	Boys	Girls	Boys	Girls
Within-Sex	-.07	-.10	-.16*	-.24**
Cross-Sex	-.18**	-.21**	-.15*	-.15*

* P = .025 for a one-tailed test

** P = .005 for a one-tailed test

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(both boys and girls) classroom percent white does not have an effect on popularity with (or friendliness to) classmates of the same sex. In all other cases, however, it appears that our hypothesis is confirmed. White students are more popular with white classmates of the opposite sex as the classroom percent white decreases. For black students classroom percent black has an effect on both their within-sex and their cross-sex popularity ratings. Conversely this means that black students tend to be friendlier to black classmates of both sexes as the percent black in the classroom decreases. Thus it appears that the effects of variations in classroom racial composition are more pervasive for blacks than for whites.

Despite these findings it seemed possible that the apparent relationship between classroom racial composition and the intra-racial popularity of students could be spurious. That is the observed relationships could be due to the effects of third variables that are related to both classroom racial composition and the intra-racial popularity of students. In order to examine this possibility multiple regression analysis has been employed to remove the effects of selected third variables when testing the relationship between classroom racial composition and intra-racial popularity (Hays, 1963).

These control variables are family SES, classroom SES, grade point average sixth grade (GPA), and absences sixth grade. Both family and classroom SES were included because of their known relationships with a variety of variables, including classroom racial composition and the academic achievement and sociometric status of students. (See Chapter IV above.) GPA was selected on the assumption that if achievement leads to

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popularity GPA would be one of the major indicators available to students concerning the academic achievement of their classmates. In addition, it was assumed that the tendency of teachers to grade on a curve would provide some control for achievement rank within classrooms rather than merely controlling for absolute levels of achievement. The number of absences during the sixth grade was included on the assumption that excessive absences could have a depressing effect both on academic achievement and the likelihood of being selected as a close friend. The zero order correlations between these four control variables are presented in Table 5-D. Their correlations with our independent and dependent variables are presented in Table 5-E.

(Table 5-D and Table 5-E)

Table 5-F presents the relationship between classroom racial composition (percent own race) and intra-racial popularity after adjusting for the effects attributable to our four control variables. It should be noted that the results are presented in the form of standardized regression coefficients (beta weights) even though our primary interest is in the partial relationship. The choice of beta weights rather than partial correlation coefficients is possible because their results are very similar although not identical (Hays, 1963, p. 575). Thus by using beta weights we obtain not only the partial correlation between our independent and dependent variables but also an indication of the amount of change in popularity produced by changes in classroom racial composition.

(Table 5-F)

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Table 5-D - Zero Order Correlations Between Four Selected Control Variables (Family SES, Classroom SES, GPA 6th, and Absences)

Control Variables	Race-Sex Cohorts			
	Whites		Blacks	
	Boys	Girls	Boys	Girls
Family SES & Classroom SES	.37**	.43**	.25**	.30**
GPA 6th	.17**	.28**	.16*	.22**
Absences 6th	-.14	-.04	-.28**	-.20**
Classroom SES & GPA 6th	.17**	.23**	-.10	-.08
Absences 6th	-.10	-.12	-.07	-.20**
GPA 6th & Absences 6th	-.30**	-.35**	-.21**	-.31**

* P = .05 for a two-tailed test

** P = .01 for a two-tailed test

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Table 5-E - Zero Order Correlations of Classroom Percent Own Race and Intra-Racial Popularity Measures With Four Selected Control Variables

	Race-Sex Cohorts			
	Whites		Blacks	
	Boys	Girls	Boys	Girls
Percent Own Race & Family SES	.09	-.08	.13	.03
Classroom SES	.32**	.20*	-.13	-.28**
GPA 6th	.10	-.11	.08	.06
Absences 6th	.05	.17*	-.19*	.06
Intra-Racial Popularity Within-Sex & Family SES	.07	-.02	.17*	.09
Classroom SES	.00	-.15*	.18*	.24**
GPA 6th	.17**	.24**	.22*	.14*
Absences 6th	-.19**	-.12	-.16*	-.27**
Intra-Racial Popularity Cross-Sex & Family SES	-.13**	.08	-.02	-.03
Classroom SES	-.34**	-.12	.06	.13
GPA 6th	.09	.10	.25**	.06
Absences 6th	-.03	-.02	-.11	-.08

* P = .05 for a two-tailed test

** P = .01 for a two-tailed test

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Table 5-F - Standardized Regression Coefficients (Betas) for Intra-Racial Popularity Scores on Classroom Percent Own Race (Family SES, Classroom SES, GPA 6th, and Absences 6th Entered in the Equations)

Intra-Racial Popularity Measures	Race-Sex Cohorts: Whites Boys	Whites Girls	Blacks Boys	Blacks Girls
	(r = -.07)	(r = -.10)	(r = -.16*)	(r = -.24**)
Within-Sex	b = -.08	b = -.11	b = -.19**	b = -.20**
	(r = -.18**)	(r = -.21**)	(r = -.15*)	(r = -.15*)
Cross-Sex	b = -.10	b = -.18**	b = -.17*	b = -.11

* P = .05 for a two-tailed test

** P = .01 for a two-tailed test

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Looking at Table 5-F we find that the results are very similar to those obtained at the zero order level. All of the beta weights are in the direction specified by our hypothesis. That is, intra-racial popularity tends to decrease as classroom percent own race increases. In terms of within-sex popularity the results of the multiple regression analysis are identical to those obtained at the zero order level. Classroom percent white has no effect on the intra-racial popularity of whites but black students are more popular with black classmates of the same sex as the classroom percent black decreases. Controlling for third variables does make a difference in terms of our findings for cross-sex popularity. At the zero order level there is a significant relationship between classroom racial composition and cross-sex popularity for all four race-sex cohorts. When control variables are included the relationship is significant only for white girls and black boys. That is, white girls are more popular with white boys as the percent white in the classroom decreases and black boys more popular with black girls as the percent black decreases.

These findings provide confirmation for our hypothesis in the case of: 1) the within-sex and cross-sex popularity of black boys; 2) the within-sex popularity of black girls; 3) and, the cross-sex popularity of white girls. Thus as we suggested above the effects of classroom racial composition appear to be more pervasive for black than for white students. Moreover, when viewed in terms of the friendliness rather than the popularity of students our findings reveal that it is the friendship choices of black girls that are most influenced by variations in class-

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room racial composition. Thus as classroom percent black decreases black girls become friendlier not only to other black girls but to black boys as well. At the other extreme, variations in classroom percent white apparently have no effect on the intra-racial friendship choices of white girls. Among boys our findings are less extreme but still conflicting. Black boys become friendlier to other black boys as the classroom percent black decreases, but as classroom percent white decreases white boys become friendlier to white girls. We will return to these findings after we have examined the relationships between classroom racial composition and the inter-racial choices of students.

B. Inter-racial Friendships

The second hypothesis to be tested in this chapter focuses on the effects of classroom racial composition (percent own race) on the social relationships between black and white students (inter-racial). As indicated in the beginning of this chapter we will actually test the hypothesis:

> The greater the percent own race in the classroom the higher (more popular) the friendship ratings received from classmates of the other race.

In order to test this hypothesis the correlations between classroom percent own race and the inter-racial popularity ratings received by students were calculated. The results of these calculations are presented in Table 5-G. Looking at this table we find that all of the correlation coefficients are in the predicted direction--positive. However, only two of them are statistically significant at or below the .025 level for a

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one-tailed test. Interestingly, both of them involve the cross-sex friendship choices of girls. That is white boys are more popular with black girls as the classroom percent white increases. Similarly, black boys appear to be more popular with white girls as the percent black in the classroom increases.

(Table 5-G)

As in the cases of intra-racial popularity it seemed possible that third variables could either be masking or exaggerating the relationship between classroom percent own race and the inter-racial popularity of students. Multiple regression analysis has also been employed to examine the relationship between classroom percent own race and the inter-racial popularity of students after adjusting for effects attributable to our four control variables. Table 5-H presents the correlation coefficients for the relationships between these four control variables and classroom percent own race and both inter-racial popularity variables.

(Table 5-H)

Table 5-I presents the standardized regression coefficients for the relationship between classroom percent own race and the inter-racial popularity of students after all four control variables have been entered into the analysis. Looking at this table we find that none of the beta weights are statistically significant. Thus our hypothesis is not confirmed by any of our findings and we must conclude that classroom racial composition does not have an effect on the inter-racial popularity of

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Table 5-G - Zero Order Correlations of Inter-Racial Popularity Measures and Classroom Percent Own Race

Inter-Racial Popularity Measures	Race-Sex Cohorts			
	Whites		Blacks	
	Boys	Girls	Boys	Girls
Within-Sex	.11	.07	.14	.07
Cross-Sex	.15*	.07	.19*	.08

* P = .025 for a one-tailed test

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Table 5-H - Zero Order Correlations of Classroom Percent Own Race and Inter-Racial Popularity Measures With Four Selected Control Variables

	Race-Sex Cohorts			
	Whites		Blacks	
	Boys	Girls	Boys	Girls
Percent Own Race & Family SES	.09	-.08	.13	.03
Classroom SES	.32**	.20*	-.13	-.28**
GPA 6th	.10	-.11	.08	.06
Absences 6th	.05	.17	-.19*	.06
Inter-Racial Within-Sex Popularity & Family SES	.01	-.04	.15	-.04
Classroom SES	.08	.02	-.10	-.38**
GPA 6th	.09	.19**	.18*	.24**
Absences 6th	-.24**	.18**	-.17*	.00
Inter-Racial Cross-Sex Popularity & Family SES	.02	-.04	-.12	.10
Classroom SES	.16**	.02	-.43**	.10
GPA 6th	.23**	.08	.25*	.00
Absences 6th	-.17**	.09	-.28**	-.03

* P = .05 for a two-tailed test

** P = .01 for a two-tailed test

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students. Conversely this means that students do not become friendlier to classmates of the opposite race as the percent opposite race in the classroom increases.

(Table 5-I)

C. Own Group Preference

The third hypothesis tested in this chapter deals with the effects of classroom racial composition on the tendency of students to prefer classmates of their own race as friends. The specific hypothesis is:

> The greater the percent own race in the classroom the lower the tendency of students to prefer classmates of their own race as friends.

In order to test this hypothesis a measure of relative friendliness was created for each student. This variable measures the tendency of students to prefer members of their own race over members of the other race as friends. Specifically, the variable represents:

> the mean friendship rating given by each student to members of the other race (inter-racial friendliness) minus the mean friendship rating given to members of his own race (intra-racial).

This formula produces a variable that ranges from a negative value (if the student is more friendly to members of the other race) to a positive value (if he is more friendly to members of his own race). The average result of these calculations for each race-sex cohort were presented above in Table 5-B.

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Table 5-I - Standardized Regression Coefficients (Beta Weights) for Inter-Racial Popularity Scores on Classroom Racial Composition - Percent Own Race - (Family SES, Classroom SES, GPA 6th, and Absences 6th Entered in the Equations)

	Race-Sex Cohorts			
Inter-Racial Popularity Measures	Whites		Blacks	
	Boys	Girls	Boys	Girls
Within-Sex	(r = .11)	(r = .07)	(r = .14)	(r = .07)
	b = .11	b = .02	b = .09	b = .07
Cross-Sex	(r = .15*)	(r = .07)	(r = .19*)	(r = .08)
	b = .10	b = .04	b = .09	b = .11

* P = .025 for a one-tailed test

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Table 5-J presents the zero order correlations between classroom percent own race and the relative friendliness scores of students. Looking at this table we find that for white students none of the correlation coefficients are statistically significant. There is one unexpected finding, however. In terms of their cross-sex choices white girls appear to have a greater preference for white boys over black boys as the percent white in the classroom increases. This is in direct contrast to the relationship specified by our hypothesis and with the findings of other studies such as Lundberg & Dickson (1952a and 1952b). Classroom percent black does not appear to have an effect on the own group preference of black boys. For black girls, however, the relationship between classroom percent black and their relative friendliness to white and black girls is in the predicted direction and statistically significant. Thus our hypothesis is confirmed for the within-sex friendship choices of black girls. Finally, even though the correlation coefficient is not statistically significant it should be noted that black girls also tend to increase their preference for boys of their race as classroom percent own race increases rather than decreases.

(Table 5-J)

D. Summary

Table 5-K presents a summary of our findings concerning the effects of classroom racial percent own race on both the intra-racial and the

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Table 5-J - Zero Order Correlations of Classroom Percent Own Race and Relative Friendliness Measures

Relative Friendliness Measures	Race-Sex Cohorts			
	Whites		Blacks	
	Boys	Girls	Boys	Girls
Within-Sex	-.02	-.07	-.02	-.21*
Cross-Sex	-.09	.13	-.09	.07

* P = .05 for a two-tailed test

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inter-racial popularity of students. In this case, however, the findings have been combined and rearranged in what one would assume to be the order of their relevance to the individual students. That is, from the least to the closest relationships. Looking at this table we find that all of the correlation coefficients are in the directions specified by our hypotheses. Thus as classroom percent own race increases intra-racial popularity ratings (all eight) decrease but inter-racial popularity ratings (all eight) increase. Obtaining these results would be very unlikely if there were no relationship between classroom racial composition and the social relationships between students. Using the binomial distribution and assuming negative and positive effects to be equally likely ($P = .5$ and $Q = .5$) than the probability of all eight correlation coefficients being in the predicted direction is $p = .004$ (Burington and May, 1958, p. 247). Thus we can conclude that there is a tendency for students to become less popular with members of their own race but more popular with members of the other race as classroom percent own race increases. In terms of the friendliness of students our findings are similar to those reported by Justman (1968). That is, students tend to become friendlier to members of both their own and the other race as classroom own race decreases.

Despite this tendency only eight of the correlation coefficients (six intra-racial and two inter-racial) are statistically significant even at the zero order level. When adjusted for the effects of our four control variables the number of statistically significant correlations is reduced to four. They are:

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1. the intra-racial within-sex popularity of black boys (black boys are more popular with black boys as percent black decreases)

2. the intra-racial within-sex popularity of black girls (black girls are more popular with black girls as percent black decreases)

3. the intra-racial cross-sex popularity of white girls (white girls are more popular with white boys as percent white decreases)

4. the intra-racial cross-sex popularity of black boys (black boys are more popular with black girls as percent black decreases)

Given these findings it seems reasonable to conclude that it is black students and particularly black girls whose social relationships are influenced by variations in classroom racial composition. It also seems reasonable to suggest that these findings may result from the tendency of black students to feel isolated (rejected or threatened) in majority white settings (Katz, 1964). Surely such feelings could exist even where there is a high degree of inter-racial social acceptance such as we reported above. Following this line of reasoning we would suggest that black students attempt to compensate for these feelings by intensifying their relationships with the least threatening group available, other blacks of the same sex.

Moreover, we would suggest that the tendency of black girls to become friendlier to black boys as well as to black girls stems from their greater inability to gain status in white dominated social systems. First, as Gottlieb and Ten Houten (1965) have shown, the social systems of schools tend to be dominated by whichever racial group is in a numerical majority. Second, numerous studies have shown that there are positive relationships

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between the sociometric status of students and such characteristics as physical ability, social skills, physical appearance, and socio-economic status. Third, there is some evidence that girls place greater emphasis on ascriptive characteristics such as physical appearance (both looks and dress) and socio-economic status than do boys (Coleman, 1961, p. 84 and Gronlund, 1958, p. 200). Finally, black girls usually do not possess the ascriptive characteristics emphasized by white dominated social systems. For example, they generally come from lower SES families than do white girls and do not conform to white standards of beauty, etc. Given these facts it seems reasonable to suggest that black girls attempt to compensate for their social vulnerability by intensifying their relationships with black boys.

Using our knowledge concerning the effects of classroom racial composition on the intra-racial and inter-racial popularity of students the explanation of our failure to obtain an effect on the own group preference of students is reasonable straight-forward. First, as we reported above, members of all four race-sex cohorts tend to prefer members of their own race as friends. This is true for both the within and cross sex friendship choices of students. Second, variations in classroom racial composition have similar effects on the intra-racial and the inter-racial social relationships of both black and white students. That is, students tend to become friendlier to classmates of both their own and the other race as the classroom percent own race decreases. Thus the preference for classmates of the same race is preserved (but not increased) even though the intensity of relationships involved may vary with classroom racial composition.

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The only exception to this general pattern are black girls. Black girls tend to become much friendlier to other black girls as the classroom percent black decreases; r = .24. On the other hand, the effect on their friendliness to white girls is much smaller; r = .07. Combined, the result of these trends is an increase in their preference for black girls over white girls as friends. It must be emphasized, however, that this effect is due to an intensification of their friendliness to other black girls and in no way represents a rejection of white girls.

(Table 5-K)

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Table 5-K - Zero Order Correlations and Standardized Regression Coefficients for Popularity Measures on Classroom Percent Own Race

	Race-Sex Cohorts			
	Whites		Blacks	
	Boys	Girls	Boys	Girls
Intra-Racial	r = -.07	r = -.10	r = -.16*	r = -.24**
Within-Sex	b = -.08	b = -.11	b = -.19**	b = -.20**
Inter-Racial	r = .11	r = .07	r = .14	r = .07
Within-Sex	b = .11	b = .02	b = .09	b = .07
Intra-Racial	r = -.18**	r = -.21**	r = -.15*	r = -.15*
Cross-Sex	b = -.10	b = -.18**	b = -.17*	b = -.11
Inter-Racial	r = .15*	r = .07	r = .19*	r = .08
Cross-Sex	b = .10	b = .04	b = .09	b = .11

* P = .05 for a two-tailed test

** P = .01 for a two-tailed test

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VI. Academic Achievement and Classroom Social Acceptance

This chapter focuses attention on the effects of social acceptance by classmates on the academic achievement of students. Specifically, we will test hypotheses 2.a. through 2.d. which predict a positive relationship between social acceptance and academic achievement. (See Chapter III above.) In order to test these hypotheses we have utilized our popularity variables (both intra-racial and inter-racial popularity) as measures of the social acceptance students receive from their classmates. (See Chapter IV above for a detailed description of the creation of these variables.) As in Chapter V our hypotheses will be tested separately for each of the race-sex cohorts. In this chapter, however, our analyses will be restricted to the effects of social acceptance by classmates of the same sex--i.e., within-sex popularity. This choice was made under the assumption that academic achievement is most likely to be influenced through social acceptance by classmates with whom close friendships could be developed. Given the social distance between boys and girls reported in Chapter V, close cross-sex friendships were obviously not very common among the students in our sample.

Two different variables have been included as measures of academic achievement.

> Spring Reading Score Sixth Grade - the grade equivalent score for the average of paragraph and word meaning sub-tests of the Metropolitan Achievement Test administered during the late spring of the sixth grade.

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> Grade Point Average Sixth Grade (GPA) - the numerical average of all marks received in academic subjects during the first three marking periods of the sixth grade.

Basic statistics for both variables and the relationship between them are presented in Table 6-A.

These academic achievement variables have been utilized because high performance on both of them are part of the formal expectations for students, but they are not identical measures. This is obvious from the fact that the correlations between them range from a high of $r = .73$ for white girls to a low of $r = .49$ among black girls. Moreover, the implications that can be drawn from findings based on their use are also different for each variable. For example, the results of standardized reading tests are not usually known by students. Thus they cannot be used as the basis for ranking other students or as a criteria in the selection of friends. On the other hand, students generally have some knowledge of the academic marks received by their classmates and could use this information in the selection of friends. Such distinctions will obviously be extremely important to any attempts to determine the causal direction of observed relationships between the academic achievement of students and social acceptance by their classmates.

(Table 6-A)

A. Overall Relationships (Social Acceptance and Academic Achievement)

As we reported in Chapter III previous studies have found a positive relationship between the academic achievement of students and their social

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Table 6-A - Basic Statistics for Academic Achievement Measures and the Zero Order Correlations Between Them

	Race-Sex Cohorts			
	Whites		Blacks	
	Boys	Girls	Boys	Girls
Spring Reading 6th				
Mean	6.1 (248)	6.0 (199)	5.3 (153)	5.4 (208)
SD	1.6	1.4	1.5	1.2
GPA 6th				
Mean	3.5 (262)	3.7 (215)	3.3 (175)	3.5 (223)
SD	0.7	0.7	0.7	0.6
I.Q. Fall 6th				
Mean	102.4 (234)	103.3 (174)	93.8 (137)	95.9 (180)
SD	16.4	14.8	13.6	11.4
Zero Order Correlations				
I.Q. & Reading	.67	.65	.60	.56
I.Q. & GPA	.59	.73	.61	.51
Reading & GPA	.63	.73	.52	.49

(N) = Number of Students

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acceptance by classmates. The hypotheses to be tested in this section are derived from these findings:

> the greater their social acceptance by members of their own race (intra-racial) the greater the academic achievement of students;
>
> and, the greater their social acceptance by members of the other race (inter-racial) the greater the academic achievement of students.

Table 6-B presents the zero order correlations between the academic achievement of students and the popularity ratings they received from classmates of the same sex.[1] Looking at this table we find that, with the exception of white boys, neither of our hypotheses is supported in terms of the reading achievement of students. In fact, among black girls there is a statistically significant negative relationship.[2] In terms of GPA, however, all of the correlation coefficients are in the direction predicted by our hypotheses and seven of the eight are statistically significant at or below the .05 level for a two-tailed test. Given these findings it seems reasonable to conclude that both of our hypotheses are supported, when GPA is the dependent variable. Thus our two measures of academic achievement appear to produce very different results.

(Table 6-B)

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[1]Unless otherwise stated the numerical values of popularity measures (or friendliness) have been reversed in all tables so that high numerical values correspond to high popularity.

[2]It should be noted, however, that the negative effect is conditioned by the racial composition of the classrooms in which students are enrolled. Thus when blacks are in the minority (less than 50 percent black) the correlation coefficient is $r = -.00$ compared to $r = -.34$ when they are in the majority.

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Table 6-B - Zero Order Correlations of Within-Sex Popularity (Intra-Racial and Inter-Racial) and Two Academic Achievement Measures (Spring) Reading 6th and GPA 6th)

	Race-Sex Cohorts			
	Whites		Blacks	
	Boys	Girls	Boys	Girls
Spring Reading 6th				
Intra-Racial Popularity	.19**	.05	.14	.09
Inter-Racial Popularity	.16*	.05	.14	-.18**
GPA 6th				
Intra-Racial Popularity	.17*	.24**	.22**	.14*
Inter-Racial Popularity	.09	.19**	.18*	.24**

* P = .05 for a two-tailed test

** P = .01 for a two-tailed test

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Before attempting to account for this conflict, however, we will look at the same relationships after adjusting for the effects attributable to selected third variables. The results of these calculations are presented in Table 6-C as standardized regression coefficients (beta weights). The three variables included in the analyses as control variables are family SES, classroom SES, and I.Q. sixth grade. These variables were selected because of their known relationships with both the academic achievement and popularity of students. In addition, they were selected because each may be viewed as preceeding both our dependent and independent variables in time. Thus when controlling for these variables a reduction in the correlation between academic achievement and popularity to zero would indicate that the original correlation was essentially spurious. For example, the sixth grade I.Q. scores of students have a strong relationship with both their spring reading scores and their GPA. (Table 6-A) Moreover, since the I.Q. test was administered during the early Fall we are actually controlling for the academic performance of students prior to their sixth grade experiences.

(Table 6-C)

When the beta weights are compared to the zero order correlations it becomes obvious that adjusting for effects attributable to third variables results in a general reduction in the correlation between academic achievement and popularity. However, the correlations are not always reduced to zero and the effect appears to be stronger for girls than for boys. Thus we find that, even after controlling for the effects of our third variables,

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Table 6-C - Standardized Regression Coefficients (Beta Weights) of Academic Achievement (Spring Reading & GPA) on Within-Sex Popularity Ratings (Family SES, Classroom SES, and 6th Grade I.Q. Included in all Equations)

	Race-Sex Cohorts			
	Whites		Blacks	
	Boys	Girls	Boys	Girls
Spring Reading				
Intra-Racial Popularity	.11*	.02	-.01	-.00
Inter-Racial Popularity	.06	-.03	-.00	-.13*
GPA 6th				
Intra-Racial Popularity	.07	.19**	.11	.15**
Inter-Racial Popularity	.02	.11*	.03	.19**

* P = .05 for a two-tailed test

** P = .01 for a two-tailed test

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spring reading has a statistically significant positive relationship with the intra-racial popularity of white boys and a negative relationship with the inter-racial popularity of black girls.[1] In terms of GPA there are statistically significant positive relationships with the intra-racial and inter-racial popularity of girls (both black and white) but not boys.

The general failure to have our hypotheses confirmed in terms of the reading achievement of students was unexpected. As we reported in Chapter III previous studies have found a positive relationship between the social acceptance of students and their academic achievement even when measured by the results of standardized achievement or intelligence tests. Several factors may account for this discrepancy. First, those studies reporting the strongest relationships are based on comparisons of achievement scores for students who were identified as "high" or "low" in terms of their social acceptance rather than on the correlation between variables for the entire group as in this study (Bonney, 1955: Buswell, 1953; Grossman & Wrighter, 1948). Second, many of the reported positive relationships have been based on relatively small correlations (r = .14 - r = .36) even at the zero order level (Bonney, 1943; Laughlin, 1954).

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[1]The persistence of this negative relationship is not only surprizing but confusing. First it is contrary to the findings of previous studies and to our findings among the three other cohorts. Second, and more important, there is a positive relationship between the GPA of black girls and their inter-racial popularity. Thus we are confronted with findings which seem to indicate that the reading achievement of black girls decreases but their GPA increases as their popularity with white girls increases. We will return to this problem after we have examined the relationships between the academic achievement of students and their social acceptance by classroom racial majorities.

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Third, none of these studies attempted to control for the "intelligence" of students. Table 6-D shows that adjusting for the effects of family SES and classroom SES alone does not generally result in large reductions in the correlations. Finally, none of the previous studies conducted separate analyses for the various race-sex cohorts as we did. Nor did they attempt to differentiate social acceptance in terms of the race and sex of the classmates doing the choosing or rating. Using procedures similar to those employed by previous studies the correlation between the spring reading scores of our students and their "total" classroom popularity is r = .15 and r = .16 for whites and blacks respectively. Both of these correlation coefficients are statistically significant below the .01 level and both exceed the lowest results reported by other studies. Thus it appears that our findings are not dramatically different from those reported by previous studies.[1]

(Table 6-D)

In terms of GPA it appears that our hypotheses are supported only among the girls. That is, the GPA of girls does increase as their social acceptance (by both girls of their own and the other race) increases even after adjusting for the effects of third variables. Among boys the correlation between GPA and social acceptance is reduced to zero when our three

---

[1]The only exception to this conclusion is our finding of a negative relationship between the spring reading achievement of black girls and their popularity with white girls (inter-racial popularity). As indicated above we will attempt to account for this contradiction after we have presented our findings for the last two hypotheses.

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Table 6-D - Partial Correlations for the Regression of Academic Achievement (Spring Reading and GPA) on Within-Sex Popularity Rating (Family SES and Classroom SES Included in all Equations

	Race-Sex Cohorts			
	Whites		Blacks	
	Boys	Girls	Boys	Girls
Spring Reading				
Intra-Racial Popularity	.21	.09	.11	.01
Inter-Racial Popularity	.13	.06	.10	-.10
GPA 6th				
Intra-Racial Popularity	.16	.28	.23	.17
Inter-Racial Popularity	.08	.21	.14	.21

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control variables are included in the regression equations. An analysis of these equations reveals that it is the inclusion of the I.Q. variable that apparently accounts for this reduction. For example, after adjusting for the effects attributable to both family and classroom SES the partial correlation between the GPA and the intra-racial popularity of white boys is r = .16 compared to the zero order correlation of r = .19. (Table 6-D) When I.Q. has been included the partial correlation is r = .09. (Table 6-C) Among girls the effects of I.Q. on the partial correlation are not as strong. This is true even though the reductions associated with the inclusion of both family and classroom SES are similar for girls and boys of both races. This finding suggests the possibility that the classroom achievement (GPA) of girls may be more sensitive to factors other than intelligence than the classroom achievement of boys.

It must be emphasized that despite our finding of a positive relationship between the GPA of girls and their social acceptance by other girls we can only speculate on the causal direction of the relationship. In theory both directions of influence are possible and it is likely that there is a constant interaction between them. The argument that achievement influences popularity gains some support from our general finding (even at the zero order level) that there is a relationship between the social acceptance of students and their publically known GPA but not their reading achievement scores. Some care should be exercised before accepting this argument, however. Despite the fact that GPA and reading achievement are both related to the intelligence of students it seems likely that they differ in terms of the potential influence of other

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factors. For example, in terms of classroom subjects, students may (if motivated) compensate for lower ability by studying harder or longer. Similar opportunities are not usually available when taking standardized tests. Thus the different results for GPA and reading achievement may only indicate that GPA is more sensitive to the influence of additional factors than are the results of standardized tests. On the other hand, our findings also provide some support for the argument that being socially accepted by classmates contributes to the academic achievement of students, at least for girls. The possibility that such a relationship exists is enhanced by the fact that statistically significant partial correlations were obtained even after controlling for the intelligence (or prior achievement) of students. Given the complexity of the factors influencing both academic achievement and social acceptance, however, we are still unable to choose between the alternative explanations.

B. Conditional Relationships (Social Acceptance and Academic Achievement in Majority & Minority Group Situations)

In Chapter III we argued that when students are racially in the minority social acceptance by members of the majority would facilitate--but lack of acceptance hinder--the academic performance of students. In this section we will determine whether or not such a relationship actually exists. This line of reasoning has also been extended to our expectations for the relationship between the social acceptance and academic achievement

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of majority group members themselves. Thus in this section we will test the hypotheses:

> In racially mixed classrooms the greater their social acceptance by majority group members the higher the academic achievement of minority group members.
>
> In racially mixed classrooms the greater their social acceptance by other members of the classroom majority the greater the academic achievement of majority group members.

In order to test these hypotheses we reanalysed our data separately depending upon whether students were racially in the minority (less than 50 percent own race) or majority (50 percent or more own race) in their classrooms. Table 6-E presents the number of students enrolled in each type of setting. Looking at this table it is obvious that most white students attended predominately white schools. In fact, only 16 percent of the white boys and 10 percent of the girls were racially in the minority in their classrooms. It should be noted that classroom racial composition was determined separately for blacks and whites but in both cases percent own race was used. In all but two of our classrooms either black or white students accounted for a clear cut majority and the cutting point of fifty percent was used. In two classrooms, however, the racial distribution of students was approximately 45 percent black, 25 percent white, and 30 percent other (Chinese, Puerto Rican, etc.). White students in these classrooms were counted as being in a racial minority but black students were counted as being in a racial majority.

(Table 6-E)

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Table 6-E - Frequency Distribution of Students by Classroom Percent Own Race (Minority, Less Than 50 Percent and Majority, 50 Percent Own Race or More)

	Race-Sex Cohorts							
	Whites				Blacks			
	Boys		Girls		Boys		Girls	
	N	%	N	%	N	%	N	%
Racial Minority	43	16	23	10	64	36	93	41
Racial Majority	229	84	201	90	116	64	138	59
Total	272		224		180		231	

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As with the first two hypotheses in this chapter our within-sex popularity variables have been employed as measures of the social acceptance enjoyed by students. However, in order to meet the conditions specified by our hypotheses, we will present data only for the popularity ratings which students received from members of the classroom majority. Thus when students are racially in the minority (classroom less than 50 percent own race) our interest is focused on their social acceptance by classmates of the other race (inter-racial popularity). But when students are racially in the majority it is their acceptance by classmates of the same race (intra-racial popularity) in which we are interested. Table 6-F presents the zero order correlations between the academic achievement of students and their social acceptance under these different conditions.

(Table 6-F)

Looking at this table we find that there is a statistically significant relationship between spring reading achievement and inter-racial popularity with the classroom majority only for black boys. That is when white students are in the majority there appears to be a tendency for those black boys who are most popular with white boys to have the highest spring reading scores. For the three other race-sex cohorts we cannot reject the null hypotheses of no relationship. It should be noted, however, that the overall negative relationship noted in the previous section between the reading achievement of black girls and their popularity with white girls (inter-racial) ($r = -.18$) is reduced to zero when black girls are racially in the minority.

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Table 6-F - Zero Order Correlations of Academic Achievement (6th Grade Spring Reading and GPA) and Social Acceptance by Classroom Majorities

	Race-Sex Cohorts			
	Whites		Blacks	
	Boys	Girls	Boys	Girls
Minority Less than 50 percent own race (inter-racial popularity)				
Spring Reading	.12	.40	.37**	-.00
GPA	.03	.57**	.49**	.44**
Majority 50 percent or more own race (intra-racial popularity)				
Spring Reading	.18**	.04	.15	.17
GPA	.20**	.28**	.30**	.18*

* P = .05 for a two-tailed test

** P = .01 for a two-tailed test

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For GPA, however, the correlation coefficients are statistically significant for three of the four race-sex cohorts. That is, the greater their popularity with members of the classroom majority, the higher the GPA of students in a racial minority in sixth grade classrooms. The only exception to this pattern are white boys. Thus, in terms of the GPA achieved by students, our findings provide general support for the hypothesized relationship between social acceptance by members of the classroom racial majority and the academic achievement of members of the minority.

Similar results are obtained when students are in the racial majority and the coefficients are calculated for the correlation between their academic achievement and their popularity with members of their own race (intra-racial). Only the correlation coefficients between the reading achievement and intra-racial popularity of white boys is statistically significant. Thus we cannot reject the null hypothesis of no relationship for three out of the four race-sex cohorts. On the other hand, for GPA all four of the correlation coefficients are statistically significant at or below the .05 level for a two-tailed test and thus confirm our hypothesis. That is, when students are in the racial majority, their GPA appears to increase as their social acceptance by other members of the majority increases.

Given these results it seems that once again we are faced with contradictary findings depending upon whether spring reading achievement or GPA is used as our measure of academic achievement. Thus when spring reading achievement is used only two of the eight possible correlation

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coefficients are statistically significant and neither of our hypotheses is generally supported by our findings. It should be noted, however, that both of the significant correlations involve popularity ratings received from white boys when white students are in the racial majority. On the other hand, seven of the eight coefficients are significant when the GPA of students is considered. This would seem to be sufficient evidence to warrant the conclusion that a general relationship exists between the GPA of students and their social acceptance by members of the classroom majority, regardless of race.

Taken in isolation our findings concerning GPA may not appear to be particularly impressive. In fact, we reported almost identical results above when the analysis was conducted for all members of each race-sex cohort regardless of the racial composition of their classrooms. The effect of classroom racial composition on this relationship is interesting, however. Table 6-G presents the zero order correlations between the GPA of students and their popularity ratings in three different racial settings: minority own race (less than 50 percent); majority own race (51 - 100 percent); and segregated own race (81 - 100 percent).[1]

(Table 6-G)

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[1]Similar calculations were made using reading achievement rather GPA and the results did not differ from the findings already reported above. These calculations did reveal, however, that when blacks are in the racial majority there is a strong negative relationship ($r = -.34$) between the reading achievement of black girls and their popularity with white girls (inter-racial popularity).

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Table 6-G - Zero Order Correlations Between the GPA of Students and Their Popularity Ratings in Three Racial Settings

	Race-Sex Cohorts			
	Whites		Blacks	
	Boys	Girls	Boys	Girls
Minority Own Race (0 - 50 Percent)				
Minority Group Intra-Racial	-.04	.05	.15	.12
Majority Group Inter-Racial	.03	.57**	.49**	.44**
Majority Own Race (51 - 100 Percent)				
Minority Group Inter-Racial	.09	.16*	-.01	.03
Majority Group Intra-Racial	.20**	.28**	.30**	.18*
Segregated Own Race (81 - 100 Percent)				
Minority Group Inter-Racial	.03	.15	.05	--
Majority Group Intra-Racial	.15	.36**	.35*	.30**

* P = .05 for a two-tailed test

** P = .01 for a two-tailed test

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Table 6-G clearly shows that the GPA of students is related to their social acceptance by members of the classroom racial majority but not by members of the minority regardless of the race of the individual student or of the majority. Thus when students are racially in the minority there is a significant relationship between their GPA and their popularity with members of the other race. But when they are in the majority the significant relationship is between GPA and social acceptance by members of their own race. The latter relationship is even stronger among students who were in segregated classroom--81 percent or more own race.[1]

It must be noted that even when they are statistically significant the coefficients for the correlation between GPA and our popularity variables are not very large. Thus they do not account for very much of the variance in the GPA of students. Given these small correlations and the complex relationships between factors that influence both academic achievement and social acceptance, it seemed likely that our findings were the results of third variables related to both the GPA and popularity of students. In order to examine this possibility multiple regression analysis has been employed to control for the possible effects

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[1]Although not presented in Table 6-G separate analyses were conducted for students in settings, 51 - 80 percent own race. With one exception the correlation between GPA and intra-racial popularity among these students was greater than among minority students but smaller than among segregated students. Among white girls for example the correlation is $r = .05$ when whites are in the minority, $r = .24$ when 51 - 80 percent white, and $r = .36$ when 81 - 100 percent white. The only exception is among white boys.

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of selected third variables. The three variables included as control variables are family SES, classroom SES, and I.Q. sixth grade. These are the same control variables used in our analysis of the overall relationship between social acceptance and academic achievement, and our reasons for selecting them were presented in section A above.

Table 6-H presents the standardized regression coefficients (beta weights) for the effects of their popularity with majority group members on the GPA of students after adjusting for the effects attributable to our control variables.[1] This table shows that, even though it may be small, social acceptance by members of the majority does have an independent effect on the GPA of some students. When students are racially in the minority there is a significant relationship between the GPA of black girls and their popularity with white girls. But this is the only race-sex cohort among which a significant effect persists. Given this finding we are forced to conclude that the significant zero order correlations reported above were due to the tendency among members of these cohorts for students with high I.Q.'s to be both high achievers and popular with their classmates. Thus the hypothesis "the greater their social acceptance by majority group members the higher the academic achievement of minority group members" is confirmed but only for black girls.

---

[1]Identical analyses were conducted using spring reading scores as the dependent variable. In general the results merely confirmed the findings reported above--social acceptance does not appear to have an effect on the reading achievement of students. However, when blacks were in the majority the statistically significant relationship between the reading achievement of black girls and their popularity with white girls persisted, the partial correlation is $r = -.35$.

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(Table 6-H)

When students are in the racial majority, however, there is a consistent significant relationship between their GPA and their popularity with other members of the majority (intra-racial popularity). Thus with the apparent exception of black girls the second hypothesis tested in this section is confirmed by our findings. That is, "the greater their social acceptance by other members of the classroom majority the greater the academic achievement of majority group members." Table 6-G also shows that the significant relationship between the GPA of students and their popularity with other members of the majority persists even when the analysis is conducted separately for those students who were in classrooms of 80 percent or more their own race.

C. Summary

Reviewing our findings, it appears that social acceptance by classmates does have an effect on the GPA but not the sixth grade reading achievement of our sampled students. This distinction exists at the overall level and when the analyses are performed separately according to the racial composition of the classrooms in which students are enrolled. The only exception to this pattern in terms of reading achievement is the totally unexpected finding that the reading achievement of black girls decreases as their popularity with white girls increases ($r = -.18$). As reported above this relationship is conditioned by classroom racial

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Table 6-H - Standardized Regression Coefficients (Beta Weights) of GPA and Within-Sex Popularity Ratings in Three Racial Settings (Family SES, Classroom SES, and 6th Grade I.Q. Included in all Equations)

	Race-Sex Cohorts			
	Whites		Blacks	
	Boys	Girls	Boys	Girls
Minority Own Race (0 - 50 Percent)				
Majority Group Inter-Racial	.12	-.02	.15	.40**
Majority Own Race (51 - 100 Percent)				
Majority Group Intra-Racial	.14**	.21**	.23*	.08
Segregated Own Race (81 - 100 Percent)				
Majority Group Intra-Racial	.12	.26**	.20*	.23*

* P = .05 for a two-tailed test

** P = .01 for a two-tailed test

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composition. Thus when blacks are in the minority there is no relationship ($r = -.00$). But there is one when blacks are in the majority ($r = -.34$) and it persists even after adjusting for the effects of third variables.[1]

It is impossible to ignore this relationship but it is also difficult to account for it. We can, however, present additional evidence which suggests the continued influence of classroom racial composition. Table 6-I shows that despite the negative relationship for reading achievement ($r = -.34$), there is no relationship between the GPA of black girls and their popularity with white girls when the classroom percent black is between 50 and 80 percent black. Such contradictory findings could result if teachers tended to mark classroom subjects on a curve and if whites tended to have higher intelligence or be better prepared. Under such circumstances we would expect the relationship of the tested intelligence of black girls to be greater with the results of a standardized reading test than with their GPA. Table 6-I shows that this trend does exist although the difference in the size of the correlation coefficients is not overwhelming. Table 6-I also shows that there is no relationship between being popular with white girls and the sixth grade I.Q. of these black girls. Although not shown in this table even the results of a standardized reading test administered in the fall of

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[1]In fact, the relationship is confined to black girls who were enrolled in classrooms that were 50 through 80 percent black because no white girls were enrolled in segregated black (81 - 100 percent) classrooms.

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the sixth grade are not related to their popularity with white girls (inter-racial). Thus it seems that we can reject the possibility that the observed relationship existed at the beginning of the school year and was not influenced by experiences during the sixth grade year.

(Table 6-I)

We also checked on the possibility that the negative relationship could be due to differences in the characteristics of the black girls who were friendliest to white girls. For example, if the lowest achieving blacks were friendliest to white girls it would be quite natural for the white girls to respond by developing their closest friendships with these same girls. Table 6-H shows that this is not the case. If anything there is a tendency for the smartest black girls to be friendliest to the whites. We also determined that in these classrooms it is the smartest white girls who are friendliest to their black classmates. For example, the correlation between their (the white girls) friendliness to black girls and their own I.Q. is $r = .52$ and this is statistically significant below the .01 level (Table 6-J).

(Table 6-J)

Finally Table 6-I shows that classroom percent black has a positive relationship with the spring reading achievement of black girls but a negative relationship for their popularity with white girls. That is as the classroom percent black increases the reading achievement of black girls increases but their popularity with white girls decreases. Here

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Table 6-I - Zero Order Correlations Between Selected Variables for Black Girls When Classroom 50 - 80 Percent Black

	Inter-Racial Popularity	Spring Reading	GPA	I.Q.	Inter-Racial Friendliness	Classroom Percent Black
Inter-Racial Popularity	---					
Spring Reading	-.34*	---				
GPA	-.03	.49**	---			
I.Q.	-.01	.66**	.59**	---		
Inter-Racial Friendliness	.23	.26	.42**	-.01	---	
Classroom Percent Black	-.34*	.36*	-.04	.16	-.02	---

* P = .05 for a two-tailed test

** P = .01 for a two-tailed test

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Table 6-J - Zero Order Correlations Between Selected Variables for White Girls When Classroom 50 - 80 Percent Black

	Inter-Racial Friendliness	Spring Reading	GPA	I.Q.	Classroom Percent Black
Inter-Racial Friendliness					
Spring Reading	.08	---			
GPA	.50*	.55*	---		
I.Q.	.52*	.46	.82**	---	
Classroom Percent Black	.27	.46	.10	.01	---

* P = .05 level for a two-tailed test

** P = .01 level for a two-tailed test

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we must emphasize again that there is no relationship between the inter-racial popularity of black girls and the results of a standardized intelligence test administered in the fall of the sixth grade year. Nor is there a relationship between either of these variables and classroom percent black. Finally Table 6-J shows that there are no statistically significant relationships between classroom percent black and the characteristics of white girls.

Given all of these facts it seems that our most reasonable conclusion is that the apparent negative relationship between the spring reading achievement of black girls and their popularity with white girls is probably spurious and due to both of their relationships with classroom percent black. In fact any other conclusion would leave us with the unenviable task of attempting to account for either:

1. why the reading achievement but not the GPA of black girls should decrease as their popularity with white girls increases--particularly when GPA is more likely to be influence by factors other than intelligence

or

2. why (perhaps how) white girls should be friendlier to lower achieving black girls when academic achievement is measured by the results of a standardized reading test (the results of which are presumably not publically known) but not when GPA is used.

For GPA, however, we have found significant positive relationships with social acceptance by classmates. When entire cohorts are considered these relationships (both intra-racial and inter-racial) are statistically significant for girls even after adjusting for the possible effects of selected third variables (Table 6-C). We have also found that the rela-

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tionship between social acceptance and GPA is conditioned by classroom racial composition. At the zero order level there is a significant relationship between the GPA of students and their social acceptance by members of the classroom majority (regardless of race) but not by members of the minority (Table 6-F). Conversely this means that the relationship is restricted to whichever racial group is in the majority. For example, when whites are in the majority there is a significant relationship between the GPA of both black and white girls and their social acceptance by members of the white majority ($r = .44$ and $r = .28$ respectively). Finally, we have shown that this relationship persists for black girls even after controlling for the effects of third variables (Table 6-G). That is, when black girls are in the minority there is a positive relationship between their GPA and their social acceptance by white girls. For members of the other cohorts the only relationship that remains significant is for social acceptance by classmates of the same race when they are in the majority.

These findings are subject to alternative explanations concerning the causal direction of the relationship. That is whether the academic achievement of students is influenced by their social acceptance or their social acceptance influenced by their academic achievement. Either alternative could account for our findings. Thus on the one hand it may be that when students are in the majority they are able to be more selective in their choice of friends regardless of race. But when they are in a minority students may be forced to be friendly with other members of the minority regardless of their social characteristics and also forced to cultivate whatever friendships they can with members of the majority.

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On the other hand, following the line of reasoning presented in Chapter III, it may be that student performance in classroom subjects is facilitated by social acceptance (but hindered by the lack of acceptance) from members of the classroom majority. This possibility is enhanced by our finding a relationship between the GPA of students and their social acceptance by other members of the classroom majority even after controlling for initial differences in the intelligence of students. For black girls this effect appears to be more pervasive. Thus when they are in the minority there is a significant relationship between their GPA and their social acceptance by both white girls ($r = .40$) and also other black girls ($r = .26$) even after controlling for their I.Q. at the beginning of the sixth grade year. Black girls are the only cohort for whom such findings persist and it raises the possibility that black girls are uniquely vulnerable socially when they are in the minority.

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VII. Student Academic Achievement and Classroom Racial Composition

The final set of hypotheses to be tested is derived directly from our review of the literature dealing with the effects of racial composition on the academic achievement of students and from our elaboration of the possible conditioning effects of social acceptance by classmates on these relationships. Specifically, we will test one hypothesis concerning the overall relationship and four conditional hypotheses. In order to test these hypotheses we have utilized two different measures of academic achievement: spring reading score sixth grade and GPA sixth grade. (See Chapter IV) As in previous chapters our hypotheses will be tested separately for each of the four race-sex cohorts.

Before turning to our hypotheses, however, we must deal with the possibility of initial differences in the academic ability or performance of students enrolled in classrooms of varying racial composition. This is particularly important to us because of our interest in the effect of classroom racial composition on the academic achievement of students during the grade level covered by our study--the sixth grade. As we reported in Chapter II several previous studies have revealed that the students (both whites and blacks) enrolled in majority white educational settings tend to come from higher SES families and to have higher academic potential and/or previous records of academic achievement than students in black settings. If such initial differences existed in our study they would undoubtedly influence the academic performance of students during the sixth grade year and potentially invalidate our findings.

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Table 7-A presents the zero order correlation coefficients for the relationship between classroom percent own race and our two measures of pre-sixth grade academic performance. This table shows that for white students (both boys and girls) there is a statistically significant positive relationship between classroom percent white and the results of an I.Q. test and a standardized reading test, both of which were administered during the early fall of the sixth grade year. Table 7-B presents the mean scores on these two achievement variables when students are in classroom minorities and majorities. This table not only shows that the differences in achievement favors those students in white settings but that the differences in achievement are fairly large. Given both sets of findings it seems that we must conclude that there is a tendency for the smartest (or highest achieving) white students to have started the sixth grade year enrolled in those classrooms with the largest proportions of white students.

(Table 7-A and Table 7-B)

For black students the correlation coefficients presented in Table 7-A indicate no relationship between academic achievement and classroom percent black. These findings are basically supported by the similarity in the mean achievement scores of blacks when they are in the classroom racial minority or majority. It should be noted, however, that there was some tendency for black girls in minority black classrooms to have higher achievement scores. Our failure to find a relationship between classroom racial composition and the academic achievement of black stu-

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Table 7-A - Zero Order Correlation Between Classroom Percent Own Race and Two Pre-Sixth Grade Measures of Academic Achievement, Family SES, and Classroom SES

	Race-Sex Cohorts			
	Whites		Blacks	
	Boys	Girls	Boys	Girls
Classroom Percent Own Race And				
I.Q. 6th	.16*	.20**	.13	-.10
Fall Reading 6th	.24**	.15*	.07	-.08
Family SES	.09	-.08	.13	.03
Classroom SES	.32**	.20**	-.13	-.28**

* P = .05 for a two-tailed test

** P = .01 for a two-tailed test

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Table 7-B - Means for Two Pre-Sixth Grade Measures of Academic Achievement, Family SES, and Classroom SES for Two Classroom Racial Composition Settings (Minority and Majority Own Race)

	Race-Sex Cohorts			
	Whites		Blacks	
	Boys	Girls	Boys	Girls
Minority Own Race				
(0 - 50 Percent)	N = 43	N = 23	N = 64	N = 93
I.Q. 6th	95 (37)	98 (18)	93 (51)	99 (75)
Fall Reading 6th	4.4 (37)	4.6 (18)	4.4 (56)	4.8 (80)
Family SES	2.1 (39)	2.3 (20)	2.0 (59)	2.0 (83)
Classroom SES	1.9 (43)	1.8 (23)	2.3 (64)	2.3 (93)
Majority Own Race				
(51 - 100 Percent)	N = 229	N = 201	N = 116	N = 138
I.Q. 6th	104 (197)	104 (156)	94 (86)	94 (105)
Fall Reading 6th	5.3 (184)	5.1 (164)	4.4 (91)	4.5 (106)
Family SES	2.4 (213)	2.5 (186)	2.0 (107)	1.9 (126)
Classroom SES	2.3 (229)	2.3 (201)	2.0 (116)	1.9 (138)

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dents at the zero order level was unexpected because previous studies have reported such a relationship.

One possible explanation for this discrepancy could have been our use of classroom percent black rather than percent white to measure racial composition. This would be particularly important if members of other racial and/or ethnic groups were present (and they were) so that low proportions of blacks would not necessarily mean high proportions of whites. In order to explore this possibility the correlations between the pre-sixth grade academic achievement of black students and classroom percent white were calculated. The results of these calculations were similar in magnitude to those presented in Table 7-A when classroom percent black was used. Given these findings it seems reasonable to conclude at least for our sample that the highest achieving black students were not necessarily enrolled in those classrooms with the largest proportions of whites students. Thus we are in a position to investigate the effects of classroom racial composition on their academic achievement during the sixth grade year without diverting most of our attention to problems created by the existence of initial differences in the achievement characteristics of our students.

Table 7-A and 7-B also present data on the relationship between classroom percent own race and both family and classroom SES. Looking at Table 7-A we find that the correlation coefficients for classroom percent own race and family SES are not statistically significant for any of the cohorts. Table 7-B shows that there are no large differences in means although for whites family SES is slightly higher among students in

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majority white classrooms. It should be noted that our failure to find a relationship between classroom racial composition and the social class background of our students may be due to the fact that the overwhelming majority of students (both blacks and whites) came from lower SES families. For example, 70 percent of the blacks and 56 percent of the whites had family SES scores of 2.0 or less on our modified version of the Hollingshead seven point occupation scale. (See Chapter IV for a detailed description of this variable.)

On the other hand, Table 7-A shows that there is a significant relationship between classroom percent own race and average classroom SES. For whites the greater the classroom percent own race (white) the higher the average SES of the classroom. But for black students the greater the percent black the lower the average SES of the classroom. The same trends are indicated by the mean scores presented in Table 7-B. Thus it seems that both black and white students were more likely to be exposed to higher SES classmates as classroom percent white increased (or as percent black decreased).

A. Overall Relationship-Student Academic Achievement and Classroom Racial Composition

Based on our review of existing studies the first hypothesis to be tested in this chapter is:

> When family SES, average classroom SES, and previous academic achievement are controlled there will be no relationship between the academic achievement of students--both black and white--and the racial composition of the classrooms.

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In order to test this hypothesis multiple regression analyses have been performed using our measures of family SES, classroom SES, and I.Q. sixth grade as our third variables. The zero order correlations between these three control variables and our two measures of academic achievement during the sixth grade (spring reading sixth and GPA sixth) are presented in Table 7-C. This table shows that with few exceptions there are statistically significant positive relationships between each of these control variables and our dependent variables among members of all four race-sex cohorts. Given these findings it becomes obvious that the correlations between our control variables and both our independent and dependent variables could actually mask or exaggerate the relationship between classroom racial composition and the academic achievement of students.

(Table 7-C)

Table 7-D presents our findings on the correlations between classroom percent own race and the academic achievement of students both at the zero order level and after adjusting for the effects attributable to our control variables. Looking at this table we find that for black students there is no relationship between classroom percent black and their academic performance during the sixth grade even at the zero order level. Moreover the results are similar even after we have adjusted for the effects attributable to our third variables. That is controlling for the effects of these variables does not reveal a hidden relationship between classroom percent black and either the spring reading scores or the GPA of black students. Among whites the zero order correlations are somewhat

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Table 7-C - Zero Order Correlations Between Control Variables (Family SES, Classroom SES, and I.Q.) and Sixth Grade Academic Achievement Variables (Spring Reading and GPA)

	Race-Sex Cohorts			
	Whites		Blacks	
	Boys	Girls	Boys	Girls
I.Q. 6th and				
Family SES	.04	.26**	.33**	.21**
Classroom SES	.31**	.24**	.04	.23**
Spring Reading	.67**	.65**	.60**	.56**
GPA 6th	.59**	.73**	.61**	.51
Family SES and				
Classroom SES	.37**	.43**	.25**	.30**
Spring Reading	.07	.26**	.23**	.31**
GPA 6th	.17**	.28**	.16*	.22**
Classroom SES and				
Spring Reading	.37**	.29**	.03	.31**
GPA 6th	.17**	.23**	-.10	-.08
Spring Reading and GPA 6th	.63**	.73**	.52**	.49**

* P = .05 for a two-tailed test

** P = .01 for a two-tailed test

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larger. In fact, for white boys there is a statistically significant positive relationship between classroom percent white and both spring reading scores and GPA during the sixth grade. None of these relationships are significant, however, when all three of the third variables are included in the regression equations. This reduction in the size of the correlations is consistent with the fact that the highest achieving white students were enrolled in those classrooms with the largest proportions of white students even at the beginning of the sixth grade year.

(Table 7-D)

Given these findings it seems reasonable to conclude that there is no independent relationship between the academic achievement of the students in our study (both blacks and whites) and the racial composition of the classrooms in which they were enrolled. That is, classroom percent own race does not have an effect on the academic achievement of students at least while they are enrolled in that classroom. This conclusion is similar to the one arrived at by both Coleman (1966) and Wilson (1967) although their findings are based on school rather than classroom racial composition. On the other hand, our findings are in direct contrast to those reported by the U.S. Civil Rights Commission (1967) and McPartland (1968) who concluded that classroom percent white does have a residual but positive effect on the academic achievement of black students.

One possible explanation for the contradiction between our findings and those of the Civil Rights Commission and McPartland is that we utilized Pearsonian correlation techniques but that they directly compared the aca-

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Table 7-D - Zero Order Correlations and Standardized Regression Coefficients for Academic Achievement (Spring Reading and GPA) on Classroom Percent Own Race

	Race-Sex Cohorts			
	Whites		Blacks	
	Boys	Girls	Boys	Girls
Spring Reading Scores				
Zero Order	.21*	.11	.06	-.04
Beta Weight (1)	.22**	.14*	.05	-.03
Beta Weight (2)	.12	.10	.04	.03
Beta Weight (3)	.07	-.03	-.03	.05
GPA				
Zero Order	.15*	.10	.08	.06
Beta Weight (1)	.15*	.15*	.10	.09
Beta Weight (2)	.13*	.11	.08	.04
Beta Weight (3)	.08	-.03	.01	.07

(1) Family SES included in all equations

(2) Family SES and classroom SES included in all equations

(3) Family SES, classroom SES, and 6th I.Q. included in all equations

* P = .05 for a two-tailed test

** P = .01 for a two-tailed test

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demic achievement of students in different racial settings. Table 7-E presents the mean academic achievement scores for our students in three different settings (minority own race, 51 - 80 percent own race, and 81 - 100 own race). For blacks the achievement scores (both reading and GPA) are almost identical in all three settings. These figures provide additional support for our original conclusion that classroom percent black has no effect on the sixth grade academic achievement of black students.

(Table 7-E)

For whites, Table 7-E reveals that students enrolled in classrooms less than 50 percent white did not perform as well academically as students in majority white classrooms. But that there was no difference in achievement between students in 51 - 80 percent white or 81 - 100 percent white classrooms. These results exist for both spring reading scores and GPA but the differences between settings are greater for spring reading scores. It is doubtful, however, that these differences are merely the result of variations in performance during the sixth grade. For example, Table 7-B above shows that in the fall of the sixth grade year there was a nine month difference in the tested reading ability of white boys in minority white and majority white classrooms. Similar findings exist for white girls. Thus it seems reasonable to conclude that the observed differences in academic achievement are the result of initial differences in the abilities of white students rather than their performance during the sixth grade year. Thus our hypothesis of no overall relationship

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Table 7-E - Mean Sixth Grade Academic Achievement Scores (Spring Reading and GPA) for Students in Three Classroom Racial Composition Settings

	Race-Sex Cohorts			
	Whites		Blacks	
	Boys	Girls	Boys	Girls
Spring Reading 6th				
0-50% Own Race	5.3 (41)	5.3 (16)	5.3 (56)	5.5 (87)
51-80% Own Race	6.3 (108)	6.0 (109)	5.4 (47)	5.4 (60)
81-100% Own Race	6.2 (99)	6.0 (74)	5.3 (50)	5.3 (61)
GPA 6th				
0-50% Own Race	3.3 (39)	3.6 (22)	3.2 (62)	3.5 (92)
51-80% Own Race	3.5 (115)	3.8 (113)	3.4 (61)	3.6 (67)
81-100% Own Race	3.5 (108)	3.8 (80)	3.3 (52)	3.6 (64)

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between classroom racial composition and student academic achievement is also confirmed for white students.

B. Conditional Effects of Social Acceptance on the Relationship Between Student Academic Achievement and Classroom Racial Composition

Our final series of hypotheses deals with whether or not social acceptance by members of the classroom majority facilitates (or hinders) the academic achievement of students who are members of the minority. Figure 7-1 provides a graphic representation of the problem in which we are interested. Specifically, we have created a four celled table for which the axes are classroom racial composition and social acceptance by members of the classroom racial majority. For example, when we are dealing with black students cell A would represent the situation in which classroom racial composition is less than 50 percent black for black students who are socially accepted by members of the white majorities. All four of our remaining hypotheses focus on the sixth grade academic achievement of students in cells A or C compared to students of the same race when they represent the classroom majority (cell B plus cell D).

Figure 7-1: Classroom Racial Composition By Majority Group Social Acceptance

Majority Group Social Acceptance	Classroom Racial Composition		
	Majority Other Race	Majority Own Race	
Yes	A	B	(A+B)
No	C	D	(C+D)
	(A+C)	(B+D)	

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In order to test these hypotheses we classified our students depending upon whether they were racially in the minority (less than 50 percent own race) or the majority (50 percent or more own race) in their classrooms. Table 7-F presents the proportion of students enrolled in each type of setting. It should be noted that classroom racial composition was determined separately for blacks and whites and in each case percent own race was used. In all but two of our classrooms either black or white students accounted for a clear majority and the cutting point of fifty percent was used. In two classrooms, however, the racial distribution of students was approximately 45 percent black, 25 percent white, and 30 percent other. White students in these classrooms were counted as being in a racial minority but black students were counted as being in a racial majority.

(Table 7-F)

As in previous chapters our within-sex popularity variable has been employed as our measure of the social acceptance enjoyed by students. But in order to meet the conditions specified by our hypotheses we will present data only for the ratings students received from members of the classroom racial majority. Thus when students are racially in the minority (classroom less than 50 percent own race) our interest is focused on their social acceptance by classmates of the other race. Unlike previous chapters, however, in this chapter we have utilized our popularity measures as discreet rather than continuous variables. Specifically, for students in each racial setting we have classified above average popularity scores

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Table 7-F - Percentage Distribution of Students By Classroom Percent Own Race

Classroom Percent Own Race	Race-Sex Cohorts							
	Whites				Blacks			
	Boys		Girls		Boys		Girls	
	%	N	%	N	%	N	%	N
Racial Minority (0 - 50 Percent)	16	(43)	10	(23)	36	(64)	40	(93)
Racial Majority (51 - 100 Percent)	84	(229)	90	(201)	64	(116)	60	(138)
Total		272		224		180		231

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as indicating social acceptance and below average scores as indicating the lack of acceptance. The mean popularity ratings used to determine these cutting points are presented in Table 7-G. Looking at this table we find that all of the ratings range between 2.0 and 2.5. In terms of the original sociometric test a "2" was given to "good friends" and a "3" given to "kids who are not friends but who are ok." (See Chapter IV for a detailed description of this test.) Thus in terms of verbal equivalents our definition of social acceptance ranges from being "very best friends" to slightly less than "good friends."

(Table 7-G)

Table 7-G also presents the average sixth grade I.Q. ratings for each of our race-sex cohorts. These means have also been used as cutting points when I.Q. is included in the analysis as a control variable. These figures show that for members of both races there is very little difference between boys and girls in terms of I.Q. There is, however, a fairly large difference in sixth grade I.Q. between blacks and whites and this difference favors the white students. Table 7-G also shows that this difference in I.Q. scores is associated with a difference in family SES ratings which also favors white students.

We have tested this set of hypotheses by comparing the academic achievement during the sixth grade of students in specified racial settings. Specifically, we have determined the statistical significance of observed differences between means using the "Welch" alternative (t') technique (Data-Text System, 1967, pp. 349 ff. and Winer, 1962, pp.

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Table 7-G - Mean Scores for Social Acceptance Variables and Two Control Variables (I.Q. 6th and Family SES)

	Race-Sex Cohorts			
	Whites		Blacks	
	Boys	Girls	Boys	Girls
Classroom Majority Other Race	(N = 43)	(N = 23)	(N = 64)	(N = 93)
($\bar{X}$ Inter-Racial Popularity)	2.5	2.3	2.5	2.5
Classroom Majority Own Race	(N = 229)	(N = 201)	(N = 116)	(N = 138)
($\bar{X}$ Intra-Racial Popularity)	2.3	2.2	2.2	2.0
$\bar{X}$ I.Q. 6th	102	103	94	96
$\bar{X}$ Family SES	2.4	2.5	2.0	1.9

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36 ff.). Just as with the standard t-test this technique is appropriate for testing the difference between the means of independent groups. Unlike the standard t-test, however, the Welch alternative (t') does not require the assumption that the population variances are equal. Moreover, this technique provides a correlation in the value for degrees of freedom which is useful when (as in our case) there are large differences in the size of the groups for which the comparisons are being made (Hays, 1963, p. 322). Using this technique the adjusted value for degrees of freedom will range somewhere between the number of units in each group rather than N_1 N_2 - 2, as in the case of the standard t-test.

The alternative "Welch" (t') is defined as

$$t' = \frac{M_1 - M_2}{\sqrt{S_1^2 / (N_1 - 1) + S_1^2 / (N_2 - 1)}}$$

$$\text{with dt} = \frac{(N_1 - 1) \quad (N_2 - 1)}{(N_1 - 1) \quad C^2 + (N_2 - 1) \quad (1 - C)^2}$$

$$\text{where C} = \frac{S_1^2 / (N_1 - 1)}{S_1^2 / (N_1 - 1) + S_2^2 / (N_2 - 1)}$$

N = Number of Units (Subjects) in Group

M = Mean Value of Data Observations for Group

S^2 = Variance of Observations in Group

(Data-Text System, 1967, p. 359)

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Black Students

The two hypotheses for black students are based on the following assumptions: 1) that scholastic standards are likely to be higher in majority white than in majority black classrooms; 2) that in majority white classrooms social acceptance by white classmates will encourage black students to accept these higher standards; 3) that in any setting social acceptance by members of the racial majority will facilitate--but lack of acceptance hinder--the academic performance of students. Combining these assumptions we have generated two hypotheses designed to determine whether or not social acceptance by members of the white majority conditions the effects of being in majority white classrooms on the academic achievement of black students.

The specific hypotheses to be tested are:

> The academic achievement of black students in majority white classrooms who are socially accepted by their white classmates will be greater than the academic achievement of black students in majority black classrooms.
>
> The academic achievement of black students in majority white classrooms who are not socially accepted by their white classmates will be lower than the academic achievement of black students in majority black classrooms.

Our first hypothesis is based on the assumption that social acceptance by members of the white majority will encourage black students to accept the higher scholastic standards and will enhance their performance capabilities by reducing the psychological stress to which they are subjected. Conversely, our second hypothesis assumes that the scholastic standards of non-accepted students will not be increased and that their

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performance capabilities will actually be reduced because of the psychological stress to which they are exposed.

Table 7-B above indicates that black students in majority white classrooms (less than 50 percent black) were exposed to classroom racial majorities with higher pre-sixth grade achievement and family SES than they would have been in majority black classrooms. As we reported above there is very little difference between the pre-sixth grade academic performance of black students in majority or minority black classrooms. On the other hand Table 7-B shows that in majority white classrooms white students started the sixth grade at higher achievement levels and with higher family SES than their black classmates. For example, white boys in these settings had an average I.Q. of 104 and a fall reading score of 5.3 compared to an average I.Q. of 93 and a fall reading score of 4.4 for black boys in these classrooms. Differences of a similar magnitude exist between white girls and black girls. Thus our assumption concerning the existence of higher scholastic standards in majority white settings is given some support by our data.

Table 7-H compares the mean sixth grade academic achievement of socially accepted black students in majority white classrooms with the achievement of black students in majority black classrooms. With minor exceptions the results of these comparisons are consistent with our first hypothesis. That is, black students in majority white classrooms who are socially accepted by members of the white majority tend to perform better academically than black students in majority black classrooms. This tendency persists even after controlling for differences in their intelli-

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gence at the beginning of the sixth grade. This trend is similar to that reported by the U.S. Civil Rights Commission (1967) and McPartland (1968). Nevertheless, our findings do not provide statistical confirmation of our hypothesis. Table 7-H also shows that the observed differences between the academic achievement means are not statistically significant. That is they are not greater than those one would expect by chance. The only exceptions to this finding are the overall results for black girls. In their case, however, controlling for initial differences in intelligence demonstrates that the observed differences in sixth grade achievement are spurious. Thus we must conclude that our hypothesis concerning the academic performance of socially accepted black students is not confirmed by our findings.

(Table 7-H)

Table 7-I presents our findings for the second hypothesis. Specifically it compares the mean sixth grade academic achievement of black students in majority white classrooms who are not socially accepted by the white majority with the achievement of black students in majority black classrooms. This table shows that in general the observed differences in sixth grade academic achievement favor black students in majority black classrooms and that the t' values for the differences in GPA are statistically significant even after controlling for initial differences in the ability of students. Thus it would appear that our hypothesis concerning the depressing effect of non-acceptance is confirmed, at least in terms of GPA.

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Table 7-H - Between Group Differences in Academic Achievement Means and Welch (t') Values Between Socially Accepted Black Students in Majority White Classrooms and Black Students in Majority Black Classrooms

	Black Boys				Black Girls			
	N	$\bar{X}$	diff	t'	N	$\bar{X}$	diff	t'
Spring Reading								
All Students								
Socially Accepted	30	5.6			47	5.6		
Majority Black	97	5.3	.3	.96	121	5.2	.4	1.67*
Low I.Q.								
Socially Accepted	13	5.0			17	4.8		
Majority Black	33	4.5	.5	1.12	54	4.9	-.1	-.37
High I.Q.								
Socially Accepted	14	6.4			26	6.2		
Majority Black	43	6.0	.4	.96	42	6.1	.1	.34
GPA								
All Students								
Socially Accepted	33	3.5			47	3.9		
Majority Black	113	3.3	.2	1.50	131	3.6	.3	3.37**
Low I.Q.								
Socially Accepted	14	3.2			17	3.5		
Majority Black	40	3.1	.1	.60	62	3.4	.1	.88
High I.Q.								
Socially Accepted	15	3.9			26	3.9		
Majority Black	45	3.7	.2	1.30	41	4.0	-.1	-.79

* P = .05 for a one-tailed test

** P = .025 for a one-tailed test

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(Table 7-I)

At least one major question can be raised concerning the importance of this finding. It may be argued that the lower GPA of these students merely reflects the fact that they were enrolled in classrooms with a generally higher achieving white majority. That is, the lower GPA of black students in white settings is due to the caliber of students with whom they are competing rather than their failure to be accepted by the white majority. As we reported above, initial differences in academic achievement (or ability) were fairly large and did favor white students. (See Table 7-B above.) Given these differences and the general tendency of teachers to mark classroom subjects on curves, this explanation must be given serious consideration.

It is our conclusion, however, that this explanation is not sufficient to account for the lower GPA of socially non-accepted students. First, Table 7-I clearly shows that the same pattern exists among high I.Q. students in terms of their spring reading scores. Since standardized reading tests are not graded on classroom curves these results provide additional support for the possibility that these students really did not perform up to their academic potential. Second, our findings for socially accepted black students are in direct contrast to the results one would expect if differences in the initial abilities of blacks and whites were the primary influence. Since these students were also competing with higher achieving whites, one would have expected their GPA also to be lower. In fact, socially accepted blacks in majority white classrooms performed as well if not better than comparable students in majority

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Table 7-I - Between Group Differences in Academic Achievement Means and Welch (t') Values Between Socially Not Accepted Black Students in Majority White Classrooms and Black Students in Majority Black Classrooms

	Black Boys				Black Girls			
	N	$\bar{X}$	diff	t'	N	$\bar{X}$	diff	t'
Spring Reading								
All Students								
Not Accepted	26	4.9			40	5.5		
Majority Black	97	5.3	-.4	-1.58	121	5.2	.3	1.42
Low I.Q.								
Not Accepted	16	4.6			10	4.7		
Majority Black	33	4.5	.1	.35	54	4.9	-.2	.55
High I.Q.								
Not Accepted	5	5.2			16	5.6		
Majority Black	43	6.0	-.8	-1.20	42	6.1	-.5	-1.33
GPA								
All Students								
Not Accepted	29	2.9			45	3.3		
Majority Black	113	3.3	-.4	-3.25**	131	3.6	-.3	-3.57**
Low I.Q.								
Not Accepted	16	2.8			11	3.3		
Majority Black	40	3.1	-.3	-1.94*	62	3.4	-.1	-.79
High I.Q.								
Not Accepted	5	3.0			20	3.5		
Majority Black	45	3.7	-.7	-2.68**	41	4.0	-.5	-3.52**

* P = .05 for a one-tailed test

** P = .025 for a one-tailed test

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black classrooms. Finally, as we reported in Chapter VI, when black students are in the minority there is a significant positive relationship between their GPA and their popularity with members of the white majority. (See Table 6-E.)

Given all of these facts it seems most reasonable to conclude that the failure to be accepted socially by their white classmates does have a depressing effect on the academic performance of black students in majority white classrooms. That this effect should emerge in terms of GPA but not for the results of a standardized reading test is consistent with our earlier suggestion that marks in classroom subjects are more sensitive to the influence of factors other than mere intelligence. For example, students may compensate for low academic potential by working harder on classroom subjects or respond to the lack of acceptance by devoting their energy to activities other than academic performance.

Additional insight into the possible effects of social acceptance (or the lack of acceptance) by white classmates on the academic achievement of black students in majority white classrooms is provided when we compare the performance of these students with that of comparable students in majority black classrooms. Table 7-J compares the performance of black students who were:

(A) in majority white classrooms and socially accepted by whites;

(B) in majority black classrooms and socially accepted by blacks;

(C) in majority white classrooms but not accepted socially by whites;

(D) in majority black classrooms but not accepted socially by blacks.

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The academic achievement means in this table are presented in terms of their rank order (from high achievement to low achievement) for students with above and below average sixth grade I.Q. scores.

(Table 7-J)

Looking at this table we find that with only two exceptions socially accepted black students in majority white classrooms (A) performed as well or better academically than any other group. This is true even after controlling for initial differences in ability. The two exceptions (spring reading achievement for low I.Q. girls and GPA for high I.Q. girls) both represent minor deviations from this pattern. Taken by itself this finding may not appear to be impressive. In fact, one could argue that it is not at all surprising to find that the highest achieving black students are enrolled in white classrooms. This point becomes particularly obvious when one considers the possibility of residual differences in the ability of students, the generally higher achievement levels among white students and additional factors such as the quality of school programs. For example, both Coleman (1966) and Wilson (1967) have concluded that family background and the social characteristics of other students (but not racial composition) have an independent effect on the academic achievement of black students.

What is surprising, however, is the finding that it is non-accepted black students in majority white classrooms (C) who have the lowest academic performance during the sixth grade. Table 7-J shows that this is true for reading achievement and GPA of both boys and girls even after

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Table 7-J - Rank Ordering of Academic Achievement Means for Black Students in Two Racial Settings (Majority White and Majority Black) Who Were Both Accepted and Not Accepted Socially by Members of the Classroom Racial Majority

	Black Boys	Black Girls
Spring Reading		
All Students	($\bar{X}$ = 5.3) A 5.6 > B 5.4 > D 5.1 > C 4.9	($\bar{X}$ = 5.4) A 5.8 > B 5.5 = C 5.5 > D 4.9
Low I.Q. Students	($\bar{X}$ = 4.6) A 5.0 > D 4.7 > C 4.6 > B 4.4	($\bar{X}$ = 4.9) B 5.0 > D 4.8 = A 4.8 > C 4.7
High I.Q. Students	($\bar{X}$ = 6.0) A 6.4 > D 6.1 > B 6.0 > C 5.2	($\bar{X}$ = 6.1) A 6.2 = B 6.2 > D 6.0 > C 5.6
GPA		
All Students	($\bar{X}$ = 3.3) A 3.5 = B 3.5 > D 3.1 > C 2.9	($\bar{X}$ = 3.5) A 3.7 = B 3.7 > D 3.4 > C 3.3
Low I.Q. Students	($\bar{X}$ = 3.1) A 3.2 = B 3.2 > D 3.0 > C 2.8	($\bar{X}$ = 3.4) A 3.5 > B 3.4 = D 3.4 > C 3.3
High I.Q. Students	($\bar{X}$ = 3.7) A 3.9 > B 3.7 > D 3.6 > C 3.0	($\bar{X}$ = 3.8) B 4.0 > A 3.9 = D 3.9 > C 3.6

A - Majority White Classroom Socially Accepted by Whites

B - Majority Black Classroom Socially Accepted by Blacks

C - Majority White Classroom Not Accepted Socially by Whites

D - Majority Black Classroom Not Accepted Socially by Blacks

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controlling for I.Q. The only exception to this pattern is the reading achievement of low I.Q. boys. If, as we have argued above, these students had all of the advantages of being enrolled in white classrooms it is difficult to account for this finding without considering the possibility that the lack of social acceptance did have a depressing effect on their academic performance.

Our confidence in the existence of such an effect is enhanced by two facts. First, the general pattern we have described exists for spring reading achievement as well as GPA. Thus we can discount the possibility that the observed effect is merely an artifact of classroom marking procedures or other such factors. Second, the effect of social acceptance (or non-acceptance) appears to be more consistent and stronger among black students in majority white classrooms (A vs C) than among comparable students in majority black classrooms (B vs D). For example, socially accepted students in white classrooms consistently performed better academically than non-accepted students. But when I.Q. is controlled non-accepted students in majority black classrooms did as well or better than socially accepted students in three of the eight comparisons. Moreover, these differences are also larger in majority white than in majority black classrooms. Among high I.Q. boys for example there is over a year's difference in spring reading achievement which favors the socially accepted students. Among comparable students in majority black classrooms there is a one month difference in reading achievement. In other words, these scores represent the difference between being about one-half year and almost two years behind the reading level expected at the end of the sixth grade.

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It is our conclusion that the data presented in Table 7-J clearly raises the possibility that the academic achievement of black students is more sensitive to social acceptance (or the lack of acceptance) by members of the classroom majority when it is white than when it is black. Contrary to expectations, however, our findings do not support the hypothesis that the academic achievement of socially accepted students is improved. Instead, our findings indicate that it is the depressing effect of the lack of acceptance that accounts for most of this apparent sensitivity. This finding is consistent with the suggestion by Katz (1964) that the lack of acceptance by members of the white majority may function as a social threat and as a result hinder the academic performance of non-accepted students. In fact, at least among the students in our study, the alleged benefits of being in majority white classrooms may be outweighed by the potential negative effects of not being socially accepted by the members of that majority.

White Students

Our hypotheses for white students are derived from the same line of reasoning used for black students. However, our basic assumptions have different implications. Specifically, we assume: 1) that the scholastic standards are likely to be lower in majority black than in majority white classrooms; 2) in majority black classrooms social acceptance by blacks will encourage white students to accept (or maintain) these lower standards; 3) and, in any setting social acceptance by members of the racial

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majority will facilitate--but lack of acceptance hinder--the academic performance of students.

Based on these assumptions we have hypothesized that:

> The academic achievement of white students in majority black classrooms who are socially accepted by their black classmates will be less than the academic achievement of white students in majority white classrooms.

Our reasoning for this hypothesis is that socially accepted white students will accept (or maintain) lower scholastic standards and have a lower level of achievement even though their performance capabilities are not hindered by social isolation or rejection on the part of the black majority.

Our second hypothesis for white students is:

> The academic achievement of white students in majority black classrooms who are not socially accepted by their black classmates will be less than the academic achievement of white students in majority white classrooms.

Our reasoning for this hypothesis is that non-accepted students will maintain their original scholastic standards (presumably equal to or higher than those of blacks) but their performance capabilities will be hindered by their lack of acceptance from the black majority.

The hypotheses for white students have been tested using the same procedures employed above for black students. Table 7-K shows that sixth grade academic achievement is generally lower among socially accepted white students in majority black classrooms than among comparable students in majority white classrooms. This table also shows that with one exception these differences are not statistically significant when I.Q. is controlled. There is, how-

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ever, a statistically significant relationship for the reading achievement of high I.Q. girls. Table 7-L shows a similar pattern for those white students in majority black classrooms who are not socially accepted by the black majority. That is, these non-accepted students also did less well academically than comparable students in majority white classrooms. Also in their case the differences are not statistically significant when I.Q. is controlled except for the reading achievement of high I.Q. boys.

(Table 7-K and Table 7-L)

Given these general trends but ignoring the two exceptions it seems reasonable to conclude that our findings do not support either of our hypotheses. That is, regardless of their social acceptance (or lack of it), differences in the academic achievement during the sixth grade of white students in majority black classrooms are apparently due to original differences in their ability at the beginning of the school year. These initial differences in ability probably account for the two exceptions to our general finding of no difference in achievement. As we reported above the average I.Q. of each race-sex cohort was used as the cutting point in establishing our control categories for I.Q. Among whites these figures were 102 and 103 for boys and girls respectively. Table 7-B above shows that the use of these cutting points had very different implications in minority white and majority white classrooms. Briefly, the mean I.Q. of white students in non-white classrooms was substantially lower than the average I.Q. of the total cohort. On the other hand, the mean I.Q. of white students in majority white classrooms was slightly above the

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Table 7-K - Between Group Differences in Academic Achievement Means and Welch (t') Values Between Socially Accepted White Students in Majority Black Classrooms and White Students in Majority White Classrooms

	White Boys				White Girls			
	N	$\bar{X}$	diff	t'	N	$\bar{X}$	diff	t'
Spring Reading								
All Students								
Socially Accepted	18	5.3			10	5.4		
Majority White	207	6.2	-.9	-2.68**	183	6.0	-.6	-2.14**
Low I.Q.								
Socially Accepted	13	5.0			4	5.2		
Majority White	80	5.3	-.3	-.83	68	5.3	-.1	-.26
High I.Q.								
Socially Accepted	4	6.6			6	5.5		
Majority White	101	6.9	-.3	-.44	76	6.6	-1.1	-3.41**
GPA								
All Students								
Socially Accepted	18	3.2			13	3.9		
Majority White	223	3.5	-.3	-1.83*	193	3.8	.1	.62
Low I.Q.								
Socially Accepted	13	3.1			4	3.3		
Majority White	93	3.2	-.1	-.51	78	3.3	0	--
High I.Q.								
Socially Accepted	4	3.6			7	4.3		
Majority White	102	3.8	-.2	-.52	77	4.1	.2	1.49

* P = .05 for a one-tailed test

** P = .025 for a one-tailed test

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Table 7-L - Between Group Differences in Academic Achievement Means and Welch (t') Values Between Socially Not Accepted White Students in Majority Black Classrooms and White Students in Majority White Classrooms

	White Boys				White Girls			
	N	$\bar{X}$	diff	t'	N	$\bar{X}$	diff	t'
Spring Reading								
All Students								
Not Accepted	23	5.3			6	5.3		
Majority White	207	6.2	-.9	-3.80**	183	6.0	-.7	-1.0
Low I.Q.								
Not Accepted	13	5.0			5	5.2		
Majority White	80	5.3	-.3	-.91	68	5.3	-.1	-.17
High I.Q.								
Not Accepted	6	5.7			--	--		
Majority White	101	6.9	-1.2	-2.88**	76	6.6		
GPA								
All Students								
Not Accepted	21	3.3			9	3.2		
Majority White	223	3.5	-.2	-1.59	193	3.8	-.6	2.22*
Low I.Q.								
Not Accepted	14	3.3			7	3.3		
Majority White	93	3.2	.1	.58	78	3.3	0	--
High I.Q.								
Not Accepted	5	3.5			--	--		
Majority White	102	3.8	-.3	-1.02	77	4.1	--	--

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cohort mean. The net result of these differences is that white students in majority black classrooms would have a larger proportion of their students in the lower ranges of each of our two I.Q. categories. Clearly these differences could account for the two statistically significant differences in reading achievement emerging for whites. In fact, this explanation is enhanced by the fact that both exceptions involve high I.Q. students. This is exactly the result we would expect if the overwhelming majority of students with the highest academic potential were enrolled in majority white classrooms.

Finally, Table 7-M presents the rank ordering of academic achievement means for socially accepted and not accepted white students in both majority black and majority white classrooms. An analysis of the figures in this table does not reveal any consistent pattern in the ordering of all four comparison groups. This table does show, however, that the effects of social acceptance by members of the classroom majority may not be the same in both majority black and majority white classrooms. In majority white classrooms there is a tendency for socially accepted students to have higher achievement scores than non-accepted students (B vs D). In fact, when controlled for I.Q. six of the eight possible comparisons clearly favor socially accepted students. Moreover, the differences in achievement are fairly large. For example, they range from three to nine months in terms of reading ability. These differences do not emerge in majority black classrooms, however. When blacks are in the majority, socially non-accepted white students have achievement scores equal to those of socially accepted students in three out of the six com-

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parisons we could make.[1] Moreover, only among high I.Q. boys is there a large difference in achievement (reading) that favors socially accepted students. These findings provide additional confirmation for our conclusions that neither social acceptance or the lack of acceptance by blacks have a depressing effect on the academic achievement of white students in majority black classrooms.

(Table 7-M)

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[1]There were no high I.Q. non-accepted white girls.

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Table 7-M - Rank Orderings of Academic Achievement Means for White Students in Two Racial Settings (Majority Black and Majority White) Who Were Both Accepted and Not Accepted Socially by Members of the Classroom Racial Majority

	Black Boys	Black Girls
Spring Reading		
All Students	($\bar{X}$ = 6.1) B (6.5) > D (5.9) > A (5.3) > C (5.2)	($\bar{X}$ = 6.0) B (6.1) > D (5.9) > A (5.4) > C (5.3)
Low I.Q. Students	($\bar{X}$ = 5.3) D (5.4) > B (5.3) > A (5.0) = C (5.0)	($\bar{X}$ = 5.2) B (5.4) > A (5.2) = C (5.2) > D (5.0)
High I.Q. Students	($\bar{X}$ = 6.9) B (7.3) > A (6.6) > D (6.4) > C (5.7)	($\bar{X}$ = 6.5) B (6.7) > D (6.4) > A[1] (5.5)
GPA		
All Students	($\bar{X}$ = 3.5) B (3.6) > D (3.4) > C (3.3) > A (3.2)	($\bar{X}$ = 3.7) B (3.9) = A (3.9) > D (3.6) > C (3.2)
Low I.Q. Students	($\bar{X}$ = 3.2) C (3.3) > B (3.2) = D (3.2) > A (3.1)	($\bar{X}$ = 3.3) B (3.5) > A (3.3) = C (3.3) > D (3.1)
High I.Q. Students	($\bar{X}$ = 3.8) B (4.0) > D (3.7) > A (3.6) > C (3.5)	($\bar{X}$ = 4.1) A (4.3) > B (4.2) > D[1] (4.0)

A - Majority Black Classroom Socially Accepted by Blacks

B - Majority White Classroom Socially Accepted by Whites

C - Majority Black Classroom Not Accepted Socially by Blacks

D - Majority White Classroom Not Accepted Socially by Whites

[1]There were no high I.Q. non-accepted white girls.

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VIII. Conclusion

A. Summary of Findings

This study has focused attention on the relationships between classroom racial composition, the character of friendship choices between students and academic achievement. Specifically, we developed and tested three separate sets of hypotheses using data for black and for white children from a sample of central city sixth grade public school students.

The first set of hypotheses focused on the effects of classroom racial composition on the friendship choices developed between students. In Chapter V we found that as classroom percent own race increases, students became less popular with members of their own race but more popular with members of the other race. This was true for their popularity both with classmates of the same and the opposite sex--an interesting finding because the "best friend" technique employed in most sociometric studies generally does not provide any insight into the cross-sex friendship choices of students. When viewed in terms of the friendliness of students our findings are similar to those reported by Justman (1968). That is, students (both black and white) tend to become friendlier to members of their own and the other race as classroom percent own race decreases. This trend suggests that all students may feel socially threatened when they represent racial minorities in their classrooms.

Despite this general tendency, the effects of classroom percent own race were significant for only eight relationships. As classroom percent own race decreased:

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1. black girls became friendlier to other black girls, black boys and white boys;

2. white girls became friendlier to white boys and black boys;

3. black boys became friendlier to black girls;

4. white boys became friendlier to white girls.

These findings suggest that blacks are more sensitive than whites and girls than boys to changes in classroom racial composition. They also emphasize the potential importance of friendships with classmates of the opposite sex even though they may not be as intense as friendships with persons of the same sex. In fact, our findings raise the possibility that students may find it easier to modify their friendship patterns with persons of the opposite sex.

These basic findings are supported by the results of multiple regression analyses in which we controlled for variations in the social characteristics of the students being chosen. After adjusting for the effects of four control variables (family SES, classroom SES, GPA sixth, and absences sixth) we found that as classroom percent own race decreased:

1. black girls became friendlier to both black girls and black boys;

2. black boys became friendlier to black boys;

3. white boys became friendlier to white girls.

It should be noted that the causal direction of the relationships between both the GPA and absences of students and their classroom friendships is not clear. For example, the GPA of students may be influenced by their social acceptance from their classmates. Given this possibility the inclusion of GPA and absences as control variables must be viewed as

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an extremely stringent test of the relationship between classroom racial composition and student friendship patterns. Thus, our conclusion that black students and particularly black girls are most sensitive to variations in classroom racial composition must be viewed as a conservative conclusion.

In Chapter VI we found a zero order relationship between the GPA of students and their social acceptance by classmates. That is, the GPA (but not the reading achievement) of students increases as their social acceptance by classmates increases. For girls (both black and white) this effect persisted even after adjusting for the possibly invalidating effects of family SES, classroom SES, and tested intelligence at the beginning of the school year.

In fact, our findings clearly indicate that the relationship between the social acceptance of students by their classmates and their GPA is conditioned by classroom racial composition. At the zero order level there is a significant relationship between the GPA of students and their social acceptance by members of the classroom majority (regardless of race) but not by members of the minority. Conversely, this means that the relationship is restricted to whichever racial group is in the majority. Finally, we showed that this relationship persists for black girls in regression analyses in which we controlled for the effects of third variables. That is, when black girls are in the minority there is a positive relationship between their GPA and their social acceptance by white girls and with their social acceptance by black girls when blacks are in the majority. For members of the

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other cohorts the only effect that remains significant is for social acceptance by classmates of the same race when they are in the majority.

These findings are subject to alternative explanations concerning the causal direction of the relationships. That is whether the academic achievement of students is influenced by their social acceptance or their social acceptance by their academic achievement. Either alternative could account for our findings. Thus, on the one hand, it may be that when students are in the majority they are able to be more selective in their choice of friends regardless of race. But, when they are in a minority, students may be forced to be friendly with other members of the minority regardless of their social characteristics and also forced to cultivate whatever friendships they can with members of the majority.

On the other hand, following the line of reasoning presented in Chapter III, it may be that student performance is facilitated by social acceptance (and hindered by the lack of acceptance) by members of the classroom majority. This possibility is enhanced by our finding a relationship between the GPA of students and their social acceptance by other members of the classroom majority even after controlling for initial differences in the intelligence of students. For black girls this effect appears to be even more pervasive. Thus, when they are in the minority there is a significant relationship between their GPA and their social acceptance both by white girls ($r = .40$) and by other black girls ($r = .26$) even after controlling for their I.Q. at the beginning of the sixth grade. Black girls are the only cohort for whom such relationships persist, and it raises the possibility that black girls are uniquely vulnerable socially when they are in the minority.

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In Chapter VII we found that after controlling for the possibly invalidating effects of third variables that classroom racial composition had no independent effect on the sixth grade academic achievement of either the black or the white students in our study. This finding is in direct contrast to the findings reported by other studies based on classroom rather than school racial composition (U.S. Commission, 1967; McPartland, 1968). One possible explanation for this contradiction may be basic differences in the characteristics of the populations from which the study samples are drawn. Our study is limited to students enrolled in racially mixed central city public schools. But the U.S. Commission (1967) and McPartland (1968) based their findings on data derived from both central city and suburban school systems. Surely, the inclusion of suburban school systems would have an impact on the characteristics of the students involved in the study.

Some indication of this impact on the academic achievement of black students is provided by the results of a special analysis of the Office of Education data for the metropolitan Baltimore area (McDill, Stinchcomb, and Walker, 1968). These authors concluded that, "For Baltimore Negroes as a group, the most important local segregating influences are the city-suburban boundary and the private-public school system boundary. Segregation within the city public school system does not account for much of the educational disadvantage." (McDill, Stinchcomb, and Walker, 1968, p. 239)

We also presented findings which showed that black students in majority white classrooms who were socially accepted by members of the white majority had higher academic achievement scores than comparable

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students in majority black classrooms. However, these differences are not greater than one would expect by chance, and we concluded that the academic performance of black students (both boys and girls) in majority white classrooms is not enhanced by social acceptance from members of the white majority. On the other hand, our findings do indicate that the lack of social acceptance does have a depressing effect on the academic achievement of black students in these same classrooms. In fact, our findings raise the possibility that the alleged benefits of being in majority white classrooms may be outweighed by the potential negative effects of not being socially accepted by the members of that majority.

Finally our findings show that when whites are in the minority social acceptance (or the lack of acceptance) by the black majority has no apparent effect on their academic achievement. That is, both socially accepted and non-accepted white students performed as well academically as students of comparable intelligence in majority white classrooms. Thus neither of our hypotheses concerning white students is confirmed by our findings. Moreover, for white students in majority black classrooms there is very little difference in academic achievement between the socially accepted and non-accepted white students. This raises the alternative possibilities that in such classrooms either the academic achievement of white students is not influenced by their social relations with blacks or blacks do not use academic achievement as a criteria in the selection of white friends.

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B. Limitations and Implications

Limitations

Throughout the presentation of results we have attempted to be modest in terms of the conclusions or generalizations to be drawn from our findings. This approach was taken for a variety of reasons, including a healthy respect for the danger of drawing conclusions about causal effects from non-experimental research. This limitation, however, would apply to the findings of any cross-sectional study. In fact, we believe that our study is superior to most cross-sectional comparisons because of our efforts to control for initial differences in the characteristics of students at the beginning of the school year. There are, however, additional factors which also limit the conclusions or generalizations to be drawn from our findings.

The most obvious of these factors are time and place. In the period since this study was concluded there have been many dramatic developments in the area of race relations. These include such things as the outburst of civil disorders in the black ghettos of most urban areas, the continued development of the "black power" movement, and efforts by local communities to gain greater control over the schools attended by their children. Given the rapidly changing character of race relations in the United States, it may be that the conditions associated with being in a classroom racial minority or majority are also changing. This possibility appears to be particularly viable in school systems that have attempted to eliminate the stigma associated with being black through such action as the addition of courses in black studies to their curriculum.

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A second source of limitations stems from the fact that our study was conducted within the confines of a single Northeastern central city public school system. Thus our findings are applicable to other locations only to the degree that conditions in those locations approximate those in the study city. It is our impression that our findings might be different in other cities particularly in other regions of the country. Moreover, as we suggested above, further differences would probably emerge if suburban school systems were included in the analysis.

Additional limitations stem from 1) our selection of sixth graders as the subject population, 2) the use of friendship ratings as the only measure of the social relations between students, 3) the short time span covered by our study. For example, there is evidence that our group preference increases with age (Criswell, 1937; Justman, 1968). There is evidence, too, that own group preference may increase with the intimacy of the relationship involved (Gordon, 1966; Lundberg and Dickson, 1952a and 1952b; St. John, 1964). It has also been found that the prestige ratings received from classmates has a stronger relationship with academic achievement than does the friendship ratings received from them (Gronlund, 1959). Finally, the short time span covered by our study provides no opportunity to investigate the possibly cumulative effects of social acceptance (or the lack of acceptance) on the academic achievement of students.

Further, our imprecise measure of the home environment of students (family SES) may actually mask or exaggerate the relationship between our principal variables. Moreover, it could be argued that we have

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ignored the possible influence of other factors, such as the quality of school programs, acceptance by staff, and individual self-concept, on both the academic achievement of students and the quality of social relations between them. Such limitations are real and we cannot dispute them.

Implications

Despite these limitations there are still implications that can be drawn from our findings. We have shown that the actual composition of racially mixed classrooms (and presumably schools) is an important factor in the educational environment of students. Not only does racial mix affect the social relations between students, but also such relations apparently affect the academic achievement of students. Such findings clearly suggest that educators and researchers should pay particular attention both to the actual proportions of students in racially mixed classrooms and to the social relations that develop between them.

In terms of the social relations between students, our results raise the possibility that students (both blacks and whites) view being in a numerical minority as a social threat and respond to this threat by attempting to develop closer friendship relationships with other students. In this respect one of our more interesting findings is that this attempt is directed at both persons of the same sex and persons of the opposite sex despite the very low intensity of cross-sex friendship choices. This clearly suggests the importance of studying the effects of classroom

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racial composition on other types of social recognition such as respect or prestige. For example, it may be that "friendship" does not describe the relationship between most students (even of the same race and sex) in a classroom or that students may be more motivated academically by the respect they receive from classmates than by the friendship.

That black students and particularly black girls are most sensitive to variations in classroom racial composition is not particularly surprising. Our society (including the values and norms of our educational institutions) has been dominated by whites. Being enrolled in majority white classrooms may only serve to heighten the awareness that black students have of this reality. For black girls there is the additional problem that they usually do not possess the ascriptive characteristics (looks, dress, etc.) emphasized by white dominated social systems. On the other hand, white students in majority black classrooms may be insulated from the full impact of being in a numerical minority by the very fact that at least the formal educational setting and its representatives continued to be dominated by white society. Given the new recognition of black accomplishments in many school systems and the increased assertiveness of most blacks, it is extremely doubtful that white students will continue to enjoy the same degree of protection they have in the past. Given this possibility, we must certainly emphasize the need now for additional research concerning the effects of being in a racial minority.

Our findings also provide some evidence that the academic achievement of students is influenced by their social acceptance by members of

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the classroom racial majority regardless of the race of the majority. Conversely, we found no relationship between the academic achievement of students and their social acceptance by members of the classroom minority even when of the same race. Obviously there is a need for experimentation in the generation of classroom social environments that can utilize these tendencies to the advantage of all students.

Some evidence has been presented that both classroom racial composition and social acceptance have differential effects on boys and girls. Black girls appear to be particularly vulnerable when they are in majority white settings. It should be noted that these findings are consistent with Armor's discovery that school racial composition has different effects on the educational aspirations of black girls and boys (Armor, 1967). In any case, there is a need for future studies which examine (as we did) such relationships separately for girls and boys. While waiting for the results of such studies we can only emphasize the need for school administrators who are aware of such sex differences and classroom teachers who are able to intervene in behalf of the vulnerable students.

The relationship found between the academic achievement of students and their social acceptance by classmates also suggests the need for research into the causal direction of that relationship. Through controlling for initial differences in the characteristics of students (particularly their tested intelligence) we provided evidence that at least some portion of academic performance is contingent upon social acceptance. Nevertheless, our findings are in need of elaboration and

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replication before conclusions about causality can even be considered. For example, our findings are based on the actual friendship rating that students receive from their classmates, but the effects might be different if we utilized each student's perception of his social acceptance.

Finally, new research should be initiated dealing with the links between the educational attainments of students and the characteristics of the various social groups to which they belong or aspire to belong. At the present time there is some evidence that the educational climate of student bodies does have an important effect on academic performance (Coleman, 1961; McPartland, 1968). It is still not clear, however, exactly how this influence may be exerted. Thus future research should attempt to identify the separate effects (if any) on academic achievement of variations in the educational standards or values of such social groups as the entire classroom, classmates with whom an individual is friendly, or classmates with whom he would like to become friendly. Such research should provide new insights concerning the types of administrative policies and educational practice needed to maximize the value of such groups as positive factors in the formal education of students.

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VITA

1954 - 1958	Tennessee Wesleyan College Athens, Tennessee	A.B., June, 1958
1958 - 1961	Boston University School of Theology	
1961 - 1962	Social Worker Boston Sanatorium	
1962 - 1963	Youth Worker Boston, Massachusetts	
1963 - 1965	Researcher, Action for Boston Community Development	
1965 -	Graduate School of Education Harvard University	
1968 -	Sociologist, Lemberg Center for the Study of Violence, Brandeis University	

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