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ABSTRACT

In 1966, an intensive assessment of the busing program in Riverside, California, was implemented to achieve the complete desegregation of the school district. The sample consists of all elementary school students who were bused from the ghetto schools as well as a sample of white children in the receiving schools. The first measurements were taken in 1966, just prior to the implementation of the busing program. There were actually three different busing dates, a source of both problems and the opportunity for making various comparisons. The availability of such built-in controls is important since a basic ingredient for a true assessment of desegregation effects was lacking: namely, a matched school district that did not desegregate. Post-measurements were taken in the spring of 1967, one year after the majority of the children had been desegregated, in the spring of 1969, and most recently in the spring of 1971. The approach taken examines the c[illegible]s for individual variability within the classroom and within the school. In 1969, a sample of kindergarten children was included, and reassessed in the most recent testing. In 1971, an additional sample of kindergarteners was included. The data from these new samples make possible the assessment of the effects of the recent changes in race relations and other events affecting the community at large on the child's home environment. (JM)

RENEWAL PROPOSAL (1971)

FACTORS CONTRIBUTING TO ADJUSTMENT AND ACHIEVEMENT IN RACIALLY DESEGREGATED PUBLIC SCHOOLS

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FACTORS CONTRIBUTING TO ADJUSTMENT AND ACHIEVEMENT IN RACIALLY DESEGREGATED PUBLIC SCHOOLS

A. OBJECTIVES

1. Problem

In 1966 we began an intensive assessment of the bussing program in Riverside, California. This program was implemented to achieve the complete desegregation of the school district. We have realized our original objective, as set forth in our previous proposal, of collecting premeasurements on the children involved as well as a series of post-measurements. The first proposal and two progress reports are attached to this proposal as Appendices A, B, and C. Our sample consists of all of the children who were bussed from the ghetto schools as well as a sample of white children in the receiving schools. The first measurements were taken in 1966, just prior to the implementation of the bussing program. Not all of the children were bussed in the fall of 1966; some were already being bussed, which was necessitated by the burning of one of the ghetto school buildings in the summer of 1965. Some of the children from the Mexican-American barrio school were not desegregated until the fall of 1967 since they could not be accommodated sooner than that. By the fall of 1967, however, the three ghetto schools which had previously served approximately 1,000 children were phased out as regular Riverside School District elementary schools. The problems created by the three different desegregation dates are balanced by the opportunity provided for making various comparisons. The availability of such built-in controls is important in view of the fact that we lack a basic ingredient for a true assessment of desegregation effects, namely a matched school district that did not desegregate, a control we could not obtain. Post-measurements were taken in the spring of 1967, one year after the majority of the children had been desegregated, in the spring of 1969, and most recently in the spring of 1971. In 1969 we included a sample

of kindergarten children who were reassessed in our most recent testing, and in 1971 we included an additional sample of kindergarteners. The data from these new samples will enable us to assess the effects of the recent changes in race relations and other events affecting the community at large on the child's home environment as it in turn affects the child's aspirations and achievement orientation. We are keenly aware of the problems attendant upon not having a proper control school district, but these built-in comparison samples, provided by luck and design, will overcome some of those problems.

Our approach examines the causal nexus for individual variability within the classroom and within the school. One of the most important, and perhaps most surprising findings of the Coleman Survey, is the fact of far greater within-school than between-school variability in the black child's achievement. A great deal of this variability is due to innate differences in intelligence, but a good portion of it is due to other factors. It is this portion of the variance that we have focused on. Thus, irrespective of the availability of a control district, we are in a position to examine factors that account for individual differences in adjustment and achievement.

Our funding from the Institute began in June of 1967, and we fully expected to be finished with the analysis and report writing by May of 1972. Hindsight indicates that we were unrealistic in our projection. We knew that we were taking on an enormous task, but we were not fully aware of its true enormity. Neither of the principal investigators had had experience in handling such large quantities of data and we continued to underestimate the time and effort required to collect, screen, code, and punch the data onto cards so that they could be stored on our IBM 1800 discs. It will be several months before the last data collection will be safely stored on disc. Thus, we will be well into the fifth and last year of the present funding before we can begin to analyze the long-term

effects of desegregation on the value structure of our sample children. We will have 10,000,000 responses stored on disc. In analyzing the data our staff is constructing various summary variables which are then examined individually and in relation to one another. From our present vantage point we see as totally unrealistic the eventuality of having a final report ready by May of 1972 since we will only have about 9 months of lead time after the data are put into usable form. It is therefore imperative that we have an additional 15 months to do justice to the data.

As indicated in the original proposal, we have data from a number of perspectives in addition to the perspective provided by our psychological test battery. The child's parents were interviewed in 1966, 1967, and 1969 in order to obtain their view of the child as well as data on family values and the reciprocal impact that desegregation has had on life in the home. We also have a complete set of sociometric data for each of the approximately 250 classrooms in which our sample children are to be found. Later in this proposal the reader will be given some idea of the task of converting the sociometric data into usable individual-wise and group-wise measures and in turn relating these measures to classroom, teacher, and pupil variables. We also have assessments of each sample child by his teacher. These data were collected in 1966, 1967, and 1969. We were able, in 1968, to administer an attitude measure to each of the teachers involved. Finally, the school district has made available all of the data contained in each pupil's cumulative record profile which includes, among other things, the child's scores on the various achievement tests administered every year in the district. These test scores provide the major dependent measure of the impact desegregation has had on the child.

Up until now our attack on the data has been more or less piece-meal. Staff members have worked on segments of the data that held particular interest for

them. Now that all the data are in, we are planning our analysis on a broader front. We have driven a number of promising wedges already, but our approach has not as yet tied the narrow segments of the data together in a comprehensive fashion. We plan to examine the ways in which family background, teacher attitudes, classroom structure, and child characteristics combine or moderate one another to influence adjustment and achievement.

2. Related Research

We view the Riverside Study as a natural sequel to the Coleman report which appeared in print the year our study began. The Office of Education survey attempted to examine such factors as teacher qualifications, the quality of school facilities, the racial mix in the school, and characteristics of the neighborhood of the school on the achievement of minority pupils. Whereas the Coleman survey was extensive in scope, attempting initially to include a sample of 900,000 pupils in some 4,000 schools, our study is intensive, studying some 1,800 children distributed among 22 schools within a single school district. The Coleman report is an impressive landmark and will be a model for at least the next hundred years of how such large-scale surveys should be done. Some of the findings have aroused a good deal of controversy, such as the fact that school facilities and teacher qualifications have little effect on a black pupil's achievement relative to the effect of the socio-economic class background of the other pupils in the school. One of the major shortcomings of the Coleman study concerns the exclusive use of teachers as interviewers of the pupils in their class and the sole reliance on their judgment of many pupil and family background characteristics. The child's word was also taken regarding characteristics of his home environment. Given the scope of the Coleman survey and the limitations of financial resources available, no alternatives were possible. It is, however, a source of some concern as to how accurate such self-report and heresay data are.

It turns out, for example, that more black than white children report greater emphasis on school achievement in the home! This is reflected in self-report answers to questions about their parents' aspirations for them and in whether or not they were read to at home before starting school. This relationship hold in every part of the country, including Alaska and Hawaii and in both urban and non-metropolitan areas. These findings have not been given much attention, probably because they violate most white researchers' preconceptions about relative cultural deprivation in the black home. We reacted with incredulity as well until we examined our own data. Black parents in our sample corroborate the statements made by the children in the Coleman sample about their parents, at least as to the greater emphasis on achievement in the black home. In general, our study enables us to check the self-report data on the child's background collected in the Coleman survey against actual home background data. Appendix D presents, along with all of the instruments we have used, the parent survey instruments administered in 1966, 1967, and 1969.

The finding of greater apparent parent emphasis on achievement reported by minority children in the Coleman survey and corroborated by data from children and parents in our study raises a challenging question. Is the effect an artifact of perceived interviewer demand (or teacher demand in the Coleman survey) and consequent dissembling by minority children and their parents, or does the finding represent the true state of affairs? Our inclination is to assume the latter, which, if it is so, presents us with the intriguing problem of how the desire for achievement is actually realized or how it becomes thwarted. It may be that the apparent lower emphasis on achievement in the white home reflects the fact that the child's achievement is a foregone conclusion that need not be belabored. Whatever the mediational process is, we plan to explore this apparent paradox.

There is little new in the way of research on desegregation. The situation is much the same as it was in 1967, much rhetoric and few facts. Studies have been reported in New Rochelle and in Syracuse (Beker, 1967), but these studies have not attempted our depth of approach. The former study merely examined achievement effects and the latter concerned itself principally with the community process of achieving desegregation. Beker and his associates did obtain the mothers' reaction to the bussing program, which was a very limited one, and also examined achievement effects. Some informal observation of classrooms was also undertaken. The conclusion in Syracuse was that the program had relatively little effect on the minority children. After bemoaning the short term nature of the Syracuse study, Beker ends on this note:

> "...future studies in the area of school desegregation should, where possible, be planned to include larger groups and a longer follow-up period." (p.458)

3. Progress to Date*

Our current work is divided into seven general areas, each focusing on different segments of the data. The areas are: personality change and development, achievement, ethnic attitudes, parental background, the teacher, classroom structure, and linguistic changes. We will now review some of the highlights of our work in each of these areas.

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* Tables are numbered consecutively within each section.

Classroom Structure

It is difficult enough for a white child to adjust to a "new" white classroom. For the minority child desegregation is a crisis. He is removed from his neighborhood school, separated from his classmates and school friends, and placed into a classroom dominated by white children who have different values and an organized social order, the rules of which the minority child may not know. Sociometry--the study of the social structure of groups as measured by the group members' expressed preferences for each other--provides a means of studying the degree to which the minority child is accepted into the desegregated classroom as well as providing the basis for making inferences about a variety of social psychological phenomena.

We have sociometric data on all the elementary school classrooms in Riverside containing at least one Riverside School Study (RSS) child for the years 1966, 1967, 1968, 1969 and 1971. During the spring of each of these years the children were asked to give first, second and third choices of who, from among their classmates, they would prefer for friends, team members and school-work partners. The sociometric questionnaire was the same for all the children. It was self administered in written form for fourth, fifth and sixth graders. Children in the lower grades indicated their choices to an interviewer who saw each child individually. Since in junior high school each child is in several different classes, data were not collected beyond the sixth grade.

We have completed the tedious and detailed initial processing, keypunching and computer storage of the many thousands of sociometric questionnaires for the first four years of the study. Data for 1971 are currently being transcribed and will be keypunched and loaded on our disks by mid-summer. The total sample of children for whom we have data exceeds 6,000 in the first and second years

since all of the children in every classroom containing one or more sample children were included. The data are stored in the form of three adjacency matrices per class, one for each criterion--friendship, playing, and working choices--such that the entry in $cell_{ij}$ contains a 0, 1, 2 or 3 depending on whether subject i did not choose subject j or chose him a first, second, or third on that criterion. Each class is identified by a unique within-year identification number, and each child in the class is identified by a unique within-class number, sex and ethnic group identification. In addition, all RSS subjects are tagged with their RSS identification number which makes it possible to single them out for special consideration.

We have developed a unique and versatile software package, SOCIO.* This system permits the manipulation of the data set, the generation of ten different matrices and various extractions from these matrices. These extractions can then be stored in a form compatible with the RSS DATAX analysis system.

Sociometric data collected from a classroom may be regarded as a collection of digraphs--a mathematical model in which points represent members of the group and directed lines the choice relations between members. Digraphs can be written as matrices and the theory of directed graphs demonstrates that certain matrix transpositions and multiplications will yield information on the connectedness and reachability of points within the matrix. The SOCIO system can generate nine different matrices from the adjacency matrix. Appendix E gives a detailed account of the characteristics of these matrices. Through their use we can determine group structures, cliques and linkages.

The SOCIO system extracts information from a given matrix according to one of two storage routines: class or special subject. Each routine has five extractions. The class routine gives one index per class filed by class iden-

* Peter Lenz was primarily responsible for developing the system.

tification number. The special subject routine gives one index for each RSS sample child filed by RSS subject number and analyzable by any other DATAX variable. DATAX is our general purpose data analysis system. Extractions must be made separately for each routine and each simple or compound matrix.

Work with a recently updated system is in full swing now and we have compiled three social status indices for each RSS child for 1966, 1967, and 1968.* These are the total number of choices received for all ranks on the friendship, playing, and working criteria. Table 1 presents the correlations between a child's status on these three indices within each year and across years. The rank order of correlations is the same within each year: the highest correlations are between the friendship and working indices and are significantly larger than the friendship-playing correlations which are in turn significantly larger than the playing-working correlations. Across years each criterion correlates most highly with itself. This pattern of correlation indicates that social status is not the same across criteria and that friendship and working status are more closely related to each other than to playing status.

The number of choices received by individuals has a characteristic distribution--there are a few individuals receiving many choices and many receiving few or none. The sample may be conveniently partitioned into four categories: isolates (who receive no choices); underchosen (who receive fewer than they give); balanced (who receive as many as they give); and overchosen or stars (who receive many more than they give). The distribution of these categories for social status scores of the RSS sample children for 1966, 1967 and 1968 is shown in Table 2. In 1966 whites show the greatest number of friendship stars, Mexican-Americans tend least and blacks tend most to be isolates ($X^2 = 46.9$ for 6 d.f. $p < .01$). Playing choices are not distributed differently

* Terry Jackson has had primary responsibility for the work reported in this section.

Table 1. Sociometric Correlations

Number choices received for seating, playing and working
Years 1, 2 and 3--within years and across years

		Year 1966			Year 1967			Year 1968	
	seat	play	work	seat	play	work	seat	play	work
	seat	0.50	0.59	0.43	0.32	0.38	0.34	0.24	0.28
Year 1966	play		0.41	0.28	0.52	0.24	0.25	0.44	0.26
n=1540	work			0.31	0.27	0.37	0.25	0.20	0.34
	seat				0.45	0.58	0.43	0.28	0.37
Year 1967	play					0.34	0.30	0.58	0.25
n=1219	work						0.38	0.18	0.44
	seat							0.49	0.63
Year 1968	play								0.38
n=762	work								

Table 2. Percent Isolates, Underchosen, Balanced, and Stars by Ethnic Group for All Criteria, 1966-1967-1968.

		1966			1967			1968		
		A.	M.	B.	A.	M.	B.	A.	M.	B.
Friendship Choices	Isolates	17	10	21	12	13	23	8	14	17
	Underchosen	34	37	43	38	41	47	43	43	51
	Balanced	26	33	24	28	28	23	23	30	23
	Stars	23	20	12	22	18	7	26	13	10
Playing Choices	Isolates	24	28	20	20	18	21	19	15	20
	Underchosen	35	39	42	36	38	38	41	45	37
	Balanced	22	24	22	26	22	20	17	17	17
	Stars	19	20	16	18	22	21	23	23	26
Working Choices	Isolates	15	16	22	11	17	27	11	21	26
	Underchosen	39	35	41	37	45	46	32	45	46
	Balanced	24	31	24	31	25	20	29	22	22
	Stars	22	18	13	21	13	7	28	12	6

A.=Anglo
M.=Mexican-American
B.=Black

by ethnic group. Working choices show the fewest isolates and the most stars for whites, the opposite for blacks and no difference beyond population variance for the Mexican-Americans ($X^2 = 26.5$ for 6 d.f. $p < .01$). The same patterns are exhibited for friendship and working choices in 1967 and 1968. These data suggest that there are markedly different structures in ethnically different classrooms. Black classrooms appear to be the most stratified and white classrooms the most egalitarian, that is, to have the most equitable distribution of choices. The result seems counter-intuitive. We are now pursuing the problem by performing a detailed structural investigation of the different classrooms.

Social status--the tendency to receive choices from other group members--has been found to relate to I.Q. and adjustment in several studies of children and adolescents. Comparison of the high and low status extremes shows that the former tend to have higher adjustment scores (Grossman and Wrighter, 1948), more positive teacher ratings (Semler, 1960), lower manifest anxiety (Trent, 1957), higher I.Q. scores (Izard, 1959; Herber, 1967) and higher socioeconomic status (Bonney, 1944). High and low extremes of social status for the number of first choices received on each criterion for 1966 (when the majority of the children were still segregated) were compared on WISC, self attitude and field dependence. Specific comparisons of the high (3 or more first choices) and low (no first choice) status extremes yielded significant differences for I.Q. on all criteria, for self attitude on friendship and working, and for field dependence in playing (see Table 3). The I.Q. and self attitude differences are greatest for the working criterion where the high status group has a mean WISC I.Q. of 105.6 and mean self attitude score of 10.5 v.s. 95.3 and 9.1 for the low status group. Thus, differences in social status are associated with individual variations in abilities and attitudes and social status on different criteria relates to unique patterns of individual variation. Since these data are correlational,

Table 3. Mean Differences in I.Q., Self Attitude and Field Dependence for First Rank High Status and First Rank Low Status Children on Seating, Playing and Working Criteria for 1966.

		WISC I.Q.	Self Attitude	Field Dependence
Seating	low	96.2	9.3	65.8
	high	100.9	9.7	58.3
		$t(1,\infty)=3.48$	$t(1,\infty)=1.65$	N.S.
		$p<.005$	$p<.05$	
Playing	low	96.8	9.4	62.0
	high	100.1	9.5	46.4
		$t(1,\infty)=2.7$	N.S.	$t(1,\infty)=2.7$
		$p<.005$		$p<.005$
Working	low	95.3	9.1	N.S.
	high	105.0	10.5	63.6
		$t(1,\infty)=8.8$	$t(1,\infty)=5.9$	54.2
		$p<.005$	$p<.005$	N.S.

we are unable to infer direction of causation. We are currently analyzing year to year changes in sociometric status on the three criteria in order to focus down upon the mediating process or processes in order to make some educated guesses as to the extent to which sociometric status affects or is affected by these individual variables.

Comparison of social status indices for segregated and desegregated minority children reveals that desegregation results in a loss of social status for friendship and working choices relative to minority children remaining in a segregated school. Playing status shows no loss over desegregation. Table 4 gives social status scores for a segregation-desegregation comparison for Mexican-American and black children. For Mexican-American children we see that although they do not differ in pre-desegregation indices they are significantly different one year later. Those remaining in segregated classrooms show no change, whereas the desegregated children have lost a full point on both friendship and working status. Results are the same for the segregated-desegregated black children. In both cases all differences are significant at the .01 level. A social status score of 3.0 signifies that the child received as many choices as he gave. Thus, the desegregated minority children are giving one-third more choices than they are receiving for seating and working. In contrast, the white children for all three years do not vary significantly from a mean score of 3. This is clear evidence of a status loss for the minority children.

The analysis of sociometric results thus far demonstrates four important points: that the three sociometric criteria (friendship, playing, and working) are to some extent unique, that the distribution of social status varies by ethnic group, that they are differentially related to individual differences, and that desegregation has a pronounced effect on the social status of the minority child.

Table 4. Segregation - Desegregation Comparisons for Seating, Playing and Working Social Status Indices

		Mexican-American Children		
		Deseg. Fall 1968	Deseg. Fall 1967	
Spring 1966	seating	3.0	3.1	non-significant
	playing	2.9	2.9	non-significant
	working	2.7	3.0	non-significant
Spring 1967	seating	2.3	3.1	$F(1,375)=11.5$ $p < .01$
	playing	2.9	3.0	non-significant
	working	1.9	3.1	$F(1,375)=42.2$ $p < .01$

		Black Children		
		Deseg. Fall 1965	Deseg. Fall 1966	
Spring 1966	seating	1.7	2.4	$F(1,279)=7.88$ $p < .01$
	playing	2.4	2.5	non-significant
	working	1.5	2.6	$F(1,279)=19.4$ $p < .01$

The Coleman report suggests that desegregation leads to improved scholastic performance by minority children only if it occurs in an atmosphere of racial acceptance (Coleman, et. al., 1966). Our sociometric data allow a more specific determination of this "atmosphere." Further analysis of the sociometric responses will focus on inter- and intra-ethnic choices within and across sex groups.

Factors that should relate to degree of minority child acceptance are school grade, the ratio of minority to white children in the classroom, the number of years of desegregation the children have experienced, and the teacher's attitudes and expectations regarding minority and white children. Moreno (1934) proposed that there is a saturation point beyond which the introduction of additional black children will result in ethnic cleavages and other group changes. Since we do have a sizeable range of minority ratios in our classrooms, we will be able to determine if such a saturation point does in fact exist. Criswell (1937, 1939) found that race is not a significant determinant of group cleavages until the third grade and that ethnic cleavages reached their height by the fifth grade. The effect of prior exposure can be determined by comparing the same grades across years. If ethnic cleavages are less likely to occur the longer children have been desegregated we would, for example, expect third graders in 1968 to deviate less from the expected value for inter-ethnic choices than third graders in 1967 since the former have had two years of desegregation experience and the latter have had only one year of experience. The influence of the teacher's attitude on social preferences in the classroom has already been indicated in our data. Black children were least likely to choose a white picture as "most like to be" in classrooms where the teacher had a high discrimination index. This suggests that we should find greater ethnic cleavage in classrooms where the teacher has a higher discrimination index.

The profile of friendship, play, and work choices received, sent and recip-

rocated within and across the six sex by ethnic subgroups over the five years of data collection may provide an assessment of the social value norms for segregated and desegregated classrooms and for the various subgroups within these classrooms. We will also examine predesegregation individual profiles that predict to assimilation or isolation within the mixed classroom. One procedure we are following entails searching the other data we have for factors that distinguish children who show extreme protiles both before and after desegregation, with special emphasis on where their choices go and come from. The factors on which these children tend to differ will reflect the values which determine friendship, playing, and working choices in the classroom and for each sex by ethnic subgroup.

As integration progresses we can expect that differences between ethnic group social values will diminish and that a wider range of children will make interethnic choices. Minority children who choose whites are of particular interest. If improved scholastic performance and increased achievement test scores for minority children are related to minority acceptance of white achievement standards, then an increase in achievement should be accompanied by an increased tendency to choose a white child, particularly as a working partner. A limiting constraint in our study of sociometrically reflected values is the lack of personality, background, and achievement data for the white non-RSS children in each classroom. In making value inferences from the particular white child chosen as a friend, playmate, or working partner we are perforce limited to choices of white RSS children. This constraint may not be that severe in many classrooms where there is a sufficiently large sample of white RSS children.

We plan to devote considerable attention to the study of possible differences in clique structure for ethnic subgroups. We already have a clue from the individual popularity analysis that we will find differences in class-wise matrix extractions when the ethnic subgroups are compared. There are suggestions that we will find sex and age effects on structure as well. We expect to find that sociometric variables will moderate the effects of disruption experienced by the child who is bussed from a situation of relative security into a new school and into a classroom full of unfamiliar white faces. If he is to withstand the gaff he must somehow establish himself by finding a place in this new and different world. It will be possible for us to study this process.

Our survey of the sociometric literature on techniques as well as substance yielded a veritable desert. On the technique side, Katz (1946) and Cartwright and Harary (1965) have applied matrix algebra to the manipulation of sociometric data and we have adapted what is useful to us from their work. Development of techniques stopped more than ten years ago. The plethora of substantive studies provided no motivation for further matrix elaboration. Since sociometric analysis is such a potentially rich source of data from which to make inferences about a wide variety of social psychological phenomena, we fully expected to find a well developed field with a body of established findings. That such a literature is virtually non-existent lends considerable value to the potential contribution we may make with our highly developed armamentarium of matrix techniques, which have been rationalized as a comprehensive data analysis system for use on our IBM 1800 computer, as well as an exceedingly rich set of data from which it will be possible to infer ethnic, age, sex, achievement, personality, home background, and teacher effects on various aspects of classroom interaction. The opportunities here are unprecedented.

Personality Change and Development

Establishment of validity criteria for the personality measures

Direct personality measures were employed in the children's second interview. Utilizing Likert items, direct measures of school anxiety, general anxiety, self-attitudes, and attitudes the child perceives others as having toward him were obtained on all children (K-6). Need for school achievement was also included for Grades 4-6. Although various data analyses presented in this section of the Progress Report include these personality measures, these analyses have been performed without prior assessment of the validity of these scales. In part this has occurred because validity evaluation is not yet complete. Validity is currently being examined by employing an approximation to the validational process suggested by Campbell & Fiske (1959). This process utilizes what is known as the multitrait-multimethod matrix for obtaining convergent and discriminant validation. According to this method, measures of the same trait should correlate higher with each other than they do with measures of different traits involving separate measures and, ideally, these validity measures should also be higher than correlations between various traits measured by the same method (Campbell & Fiske, 1959).

The first step in this process is to establish the internal consistency of the various measures. This was done by obtaining random split-half reliability coefficients for each scale. Tables 1 and 2 (Grades K-3 and 4-6, respectively) present the average coefficient for each scale. Each mean is based upon ten random Spearman-Brown coefficients that were corrected for length. As can be seen from inspection of Tables 1 and 2 the reliability estimates indicate acceptable internal consistency in the various scales, with the possible exceptions being the self-attitude measure for Grades K-3 and the achievement scale for Grades 4-6.

Table 1: Internal Consistency Estimates for Grades K-3

	General Anxiety	School Anxiety	Self Attitude	"Other" Attitude
Total Population	.84	.68	.48	.61
Mexican-Am.	.84	.65	.41	.51
Blacks	.84	.63	.41	.52
Whites	.82	.68	.55	.70

Table 2: Internal Consistency Estimates for Grades 4-6

	General Anxiety	School Anxiety	Self Attitude	"Other" Attitude	Achievement
Total Population	.84	.75	.70	.74	.49
Mexican-Am.	.84	.73	.73	.70	.52
Blacks	.83	.68	.68	.68	.43
Whites	.77	.80	.65	.71	.36

Note--Sample sizes were Total N = 1779, M-A. N = 660, Black N = 401, and White N = 714.

The next step in the validation process requires consideration of the intercorrelations among the various scales utilizing the same method of measurement. Since the measures are assumed to differ from one another, any test too highly correlated with any of the others would be invalidated. These intercorrelations for Grades K-3 and 4-6 are presented in Tables 3 and 4, respectively. The matrices were obtained utilizing total or summary scores for each of the scales. As can be seen, with the possible exception of the intercorrelation between general anxiety and school anxiety for Grades 4-6, none of the intercorrelations are high enough to question the assumption that the various scales measure distinct traits.

Further steps in the validation process will involve obtaining estimates of the relative contributions of method variance. These estimates require the construction of a multitrait-multimethod matrix which includes all of the intercorrelations resulting when each of several traits is measured by each of several methods. Examples of other measures of the personality traits that will be used include such methods as: 1) anxiety ratings by teachers as measures of school anxiety and general anxiety, 2) anxiety scores derived from CAT speech protocols (progress toward developing such a measure is described elsewhere in the Progress Report), 3) the Indirect School and General Adjustment test as a measure of self-attitudes (Happy-Sad Pictures for Grades K-3), 4) Sociometric indices as measures of self-attitudes and others attitudes, 5) the favorability of teacher ratings and 6) an achievement index which is currently being developed.

The time involved in developing the matrix will be considerable. Approximately fifty computer hours were required in completing the first two steps of the process and, then, only for the first year data. However, it is time that is well justified. It is mandatory that the validity criteria of the various measures be established if they are to be used with any confidence as to their meaning. Further-

Table 3: Intercorrelations among Scales Utilizing the same Method of Measurement (Grades K-3)

	General Anxiety	School Anxiety	Self-Attitude	"Other" Attitude
General Anxiety	----	.01	-.37	-.21
School Anxiety		----	-.05	-.60
Self-Attitude			----	.48
"Other" Attitude				-----

Table 4: Intercorrelations among Scales Utilizing the same Method of Measurement (Grades 4-6)

General	General Anxiety	School Anxiety	Self Attitude	"Other" Attitude	Achievement
General Anxiety	----	.61	.09	-.31	.40
School Anxiety		----	.11	-.37	.44
Self-Attitudes			----	-.05	.10
"Other" Attitude				----	-.25
Achievement					----

Note--These intercorrelations are based on the total population where N = 1779.

more, once the criteria information is acquired, steps can be taken to develop better scales through refinement of the present scales. Already there is evidence that this must be done, e.g., the achievement scale for Grades 4-6. When this has been accomplished, the primary task of testing the relationships between a specific trait and other traits can be undertaken. However, before this is done, the immediate task of establishing some confidence in the measures of the traits must be completed. If the measures of the traits cannot be meaningfully differentiated from one another, there is nothing to prevent the acceptance of erroneous conclusions concerning the interrelations among the traits.

Pre-desegregation personality differences between minority and white children

A number of analyses have been performed to assess the differences that existed among the three racial groups prior to the instigation of the bussing program. The analyses reported below comment on these differences. Most of them cam be presented succinctly. While the discussion focuses upon the comparison between blacks and whites, virtually all of the reported results are substantially true for the comparison between Mexican-Americans and whites as well. As this implies, the differences between the minority groups are typically minimal.

Intellectual measures. On all three intellectual measures, blacks do not perform as well as whites ($p < .01$). These include the Raven Progressive Matrices Test, the Peabody Vocabulary Test, and the WISC (the two subscales of the WISC Verbal and Performance, show differences of similar magnitude). Table 5 presents these data. Interestingly, there are significant interactions between Race and Grade Level for both the Raven and the Peabody (see Figures 1 and 2). On the Raven, black and white children perform equally in kindergarten; however, differences quickly emerge and seem to remain constant in magnitude from second through sixth grade. On the Peabody Vocabulary test, the black-white difference is significant from the outset. Again, however, as the children progress through the

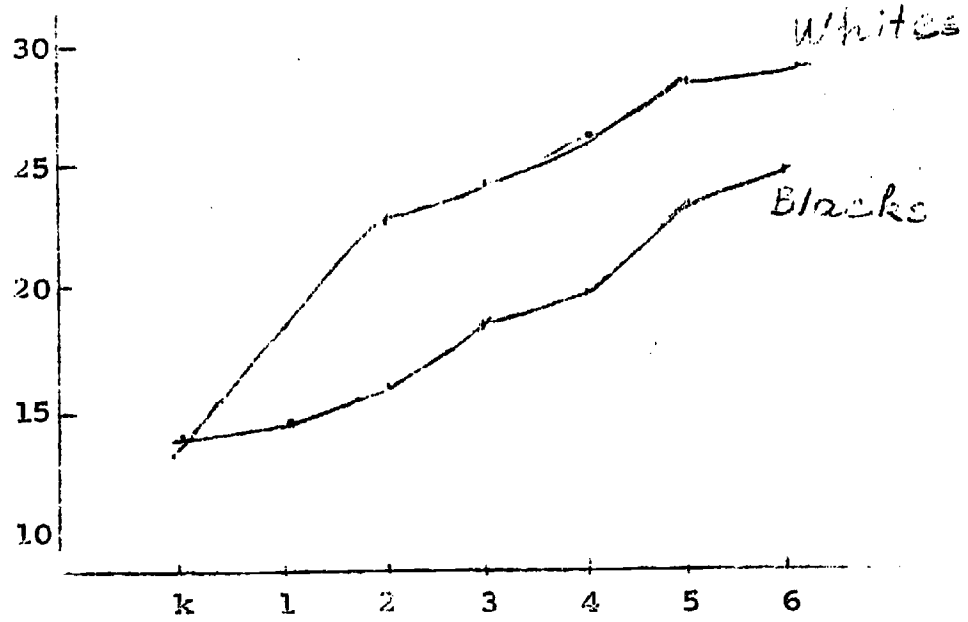
Table 5: Pre-desegregation Score on Three Measures of Intellect

Test	White	Black	Mexican-American
Raven			
mean	107.89	94.53	93.93
s.d.	15.48	12.04	11.71
n	602	346	572
Peabody			
mean	107.65	94.67	93.93
s.d.	15.38	11.64	11.72
n	592	344	571
WISC			
mean	108.70	93.34	92.73
s.d.	14.65	12.01	10.88
n	450	220	396

Figure 1

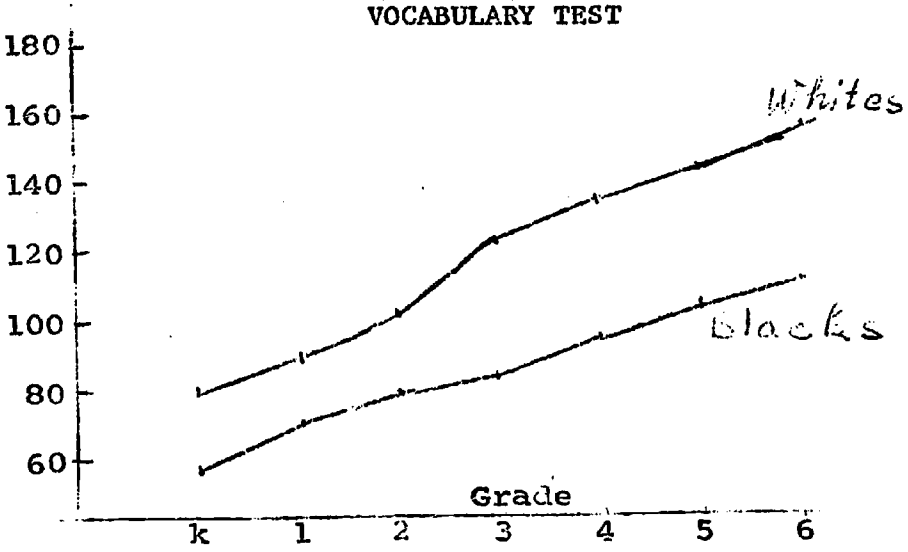
INTERACTION BETWEEN RACE AND GRADE

ON RAVEN PROGRESSIVE MATRICES TEST



Figure

INTERACTION BETWEEN RACE AND GRADE ON PEABODY VOCABULARY TEST



elementary grades, the difference between the races again increases in magnitude. On the other hand, no such interactions appear on the WISC.

Other personality differences. Analyses of variance also show black-white differences on a number of other personality dimensions. Black children are more susceptible to peer pressure ($p < .01$). They are more dependent as measured by the Witkin Rod and Frame Test (more degrees of error in the direction of the frame; $p < .01$). They show less tolerance for delayed gratification on one of the hypothetical verbal measures of delay, p .01(but not on either of two behavioral measures). On the Ring Toss Game, black children have a higher expectation for success, $p < .01$ (they predict a greater number of "hits") that doesn't reflect actual preformance differences between blacks and whites. In other words, their expectations for their performance are not as closely in line with their actual performance. Parenthetically, the Mexican-Americans clearly perform best at this task. On the Tolerance for Dissonance task, black children tend to show more regret than white children ($p < .10$). A Chi Square analysis shows still stronger effects on the dissonance reduction measure. Comparison of the number of upward shifts in their post-choice ranking of the chosen toy plus downward shifts in post-choice preference for the rejected toy by black and white children show that this type of adaptive accommodation is more frequent among white children than blacks. Likewise, post-decision reversals are more frequent among minority children.

The direct questions on General Anxiety (e.g. "Are you afraid of mice or rats?"), School Anxiety (e.g. "Do you like to talk to teachers?"), Self Attitude (e.g. "Do you do things as well as other children your age?"), Perceived Attitudes of Others (e.g. "Do other boys and girls want you to play with them?") show the same pattern on comparisons of black and white children. Black children score higher in general anxiety ($F = 55.13$; df 1/1092; $p < .01$; Means: W = 5.09; B = 7.11;

possible range 0-15); higher in school anxiety ($F = 62.16$; df 1/1086; $p < .01$; Means: W = 4.81; B = 6.57; possible range 0-14); lower in self attitude ($F = 21.55$; df 1/1002; $p < .01$; Means: W = 10.15; B = 9.47; possible range 0-13); and lastly, perceive others as having more negative attitudes toward them ($F = 13.81$; df 1/1056; $p < .01$; Means: W = 10.00; B = 10.87; possible range 0-13).

While these differences seem compelling, there may be a problem in interpreting them in terms of the manifest content of the items. For three of the four scales, the items are not balanced in terms of the direction of wording. In the case of general anxiety and school anxiety, an agreement response bias, is confounded with high anxiety scores on the scale. On the other hand, for the scale on how the child perceives others' attitude toward him, an agreement response bias yields a more favorable perception of others' attitudes. For the self attitude scale the items are approximately balanced (6 vs. 7).

Given these scale characteristics, it could be argued that at least for the anxiety scales, the black-white differences are artifactual. That is, if as suspected, members of the lower social class display stronger agreement response bias, then the anxiety scale differences may simply reflect the correlation in our data between race and social class. On the other hand, since the number of positively and negatively worded statements on the self attitude scale was balanced, the differences there cannot be attributed to response bias. And lastly, in the scale measuring the perception of others' attitudes, greater agreement response bias among blacks predicts that they would see others as having more rather than less favorable attitudes toward them. Since the opposite result was obtained, this suggests that agreement response bias is not the primary contributor to the racial differences on these scales. Given these last two outcomes, we are inclined to interpret the anxiety scale differences as indicating something more than agree-

ment response bias. In other words, we interpret them as reflecting truly different tendencies between whites and blacks to describe themselves as anxious.

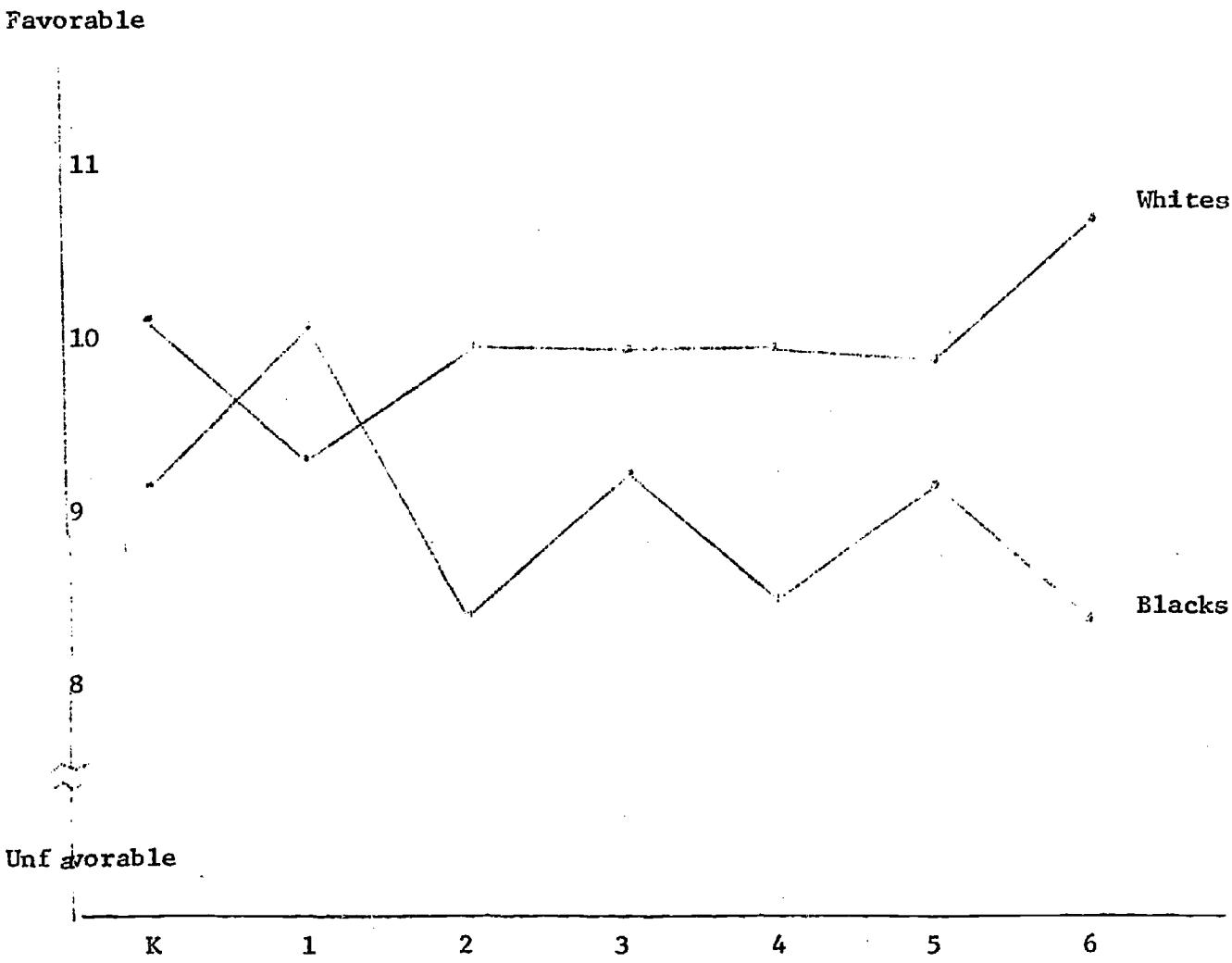
Parenthetically, it should not be concluded from the above that black and white children do not differ in agreement response bias. The substantially larger mean differences between blacks and whites on the two anxiety scales in contrast to those on the self attitude and others' attitudes scales reflects the contribution that a greater agreement response bias in blacks might add to any difference due to anxiety content itself.

Lastly, on the self attitudes scale there is an interesting interaction between grade level and ethnic group. As shown in Figure 3, whereas the self concept of white children shows some slight increase in favorability as they get older, the self concept of the black children deteriorates. Though blacks are approximately equal to whites in the first two grades, this equivalence soon vanishes.

Unravelling the effects of the confound between race and socioeconomic class. Since race and socioeconomic class are confounded within our sample, it is possible that the intellectual and other personality differences described on the preceding pages primarily reflect social class differences and that race per se is not the key factor. To assess this possibility, a number of analyses were performed comparing black children to sub-samples of white children more equivalent to blacks in terms of their socioeconomic background. Two such sub-samples were selected for this purpose. The first selects white children from the lowest 20% of the white social class distribution within each grade level. In essence, this permits a comparison of black and white children who are approximately equivalent in socioeconomic status (SES) as defined by the Duncan SES scale. (Actually the mean SES value for these whites is slightly lower than that of all the black children). The second sub-sample consists of white children who socioeconomically fall in the low-

Figure 3

INTERACTION BETWEEN GRADE AND RACE ON SELF ATTITUDES



est 5% of the distribution of whites within each grade level. These white children are substantially lower than the black children on SES. Analyses of variance outcomes using these two sub-samples of white children for comparison with all the black children provide clues about the contribution of racial differences in SES to the previous analyses of personality and intellectual traits. These outcomes can be summarized very briefly.

In the comparison of blacks to those whites in the lowest 20% of the SES distribution, virtually all the significant differences among the previous comparisons remain intact, though smaller in magnitude. (We refer here to F-test Main Effects for race in the child personality data). Those that no longer show significant differences are self attitude scale and F-test analysis of tolerance for dissonance. (The stronger dissonance effect found in the Chi Square analysis has not yet been analyzed in terms of this sub-sample comparison).

In the comparisons of blacks to the whites in the lowest 5% of the SES distribution -- a group substantially lower than the black children socioeconomically -- virtually all of the non-intellectual personality differences between races vanish (field dependence is the exception; $p < .05$), yet all of the intellectual differences still remain intact (viz. Raven, Peabody, and both WISC scales; $p < .01$).

To try to assess whether these different outcomes for the two clusters of personality traits -- non-intellectual and intellectual -- are attributable to the greater test anxiety (as well as general anxiety) of black children in comparison to whites, a sub-sample of low anxious blacks were selected for comparison to three white samples (all whites, lower 20%, lower 5%). This sub-sample of blacks have substantially lower test anxiety than any of the three white samples (Means: blacks = 3.6; Total white sample = 6.2, $p < .01$). Even for this non anxious group of black children their performance on the Raven, Peabody and WISC Scales is significantly poorer than that of the lower 20% SES white sub-sample ($p < .01$ on each).

When compared to the lower 5% SES white sub-sample, significant differences still remain for Raven and WISC ($p < .05$). Lastly, a sub-sample of blacks low in school anxiety (Mean = 3.8) and high in Self Attitude (Mean = 12.0 vs 10.2 for all whites) was selected for comparison to the white subsamples. In comparison to the lowest 20% SES whites, their performance on the Raven, Peabody and WISC still remains lower ($p < .01$). However, this sub-sample of blacks does not perform differently from the lower 5% SES whites.

What interpretation is to be made of these results? Apparently the existing confound between race and SES enables social class differences to contribute to the measured differences between races. Socioeconomic differences are related to intellectual dimensions of personality as well as a variety of other personality traits. Yet, racial differences seemingly do exist. They cannot simply be attributed to the socioeconomic differences that are confounded with racial group membership. Furthermore, racial differences on the intellectual dimensions of personality are more robust than those found on most of the other dimensions of personality that we have analyzed. Lastly, the analyses above do not provide much argument for the notion that intellectual differences in personality are strongly mediated by other personality differences.

More work needs to be done on these issues. One of the most important concerns is the possibility of interactions between race of the interviewer and the child. When test score differences show such interactions, they are commonly thought to be mediated by differential arousal of anxiety. Though some of the analyses reported above show that intellectual differences between black and white children exist even when we remove anxious black children from the comparison group, nevertheless, it is still possible that less anxiety is aroused by white interviewers testing white children as opposed to black children. Alternatively, it is possible that the effect of the interviewer upon the child's test performance

operates more directly and is not mediated by differential arousal of anxiety. The relation between similarity and interpersonal attraction or liking is well documented. Interviewers of the same race as the child may inadvertently smile more, explain the test directions more carefully, allow a little extra time, or do any number of subtle things that facilitate performance. Fortunately, in the last set of children's interviewers it was possible to thoroughly counterbalance race of the interviewer and child. Thus, the final set of data will allow us to carefully analyze this critical issue.

Trait ratings of children by parents and teachers. Parents and teachers each rated the children in the study on 21 personality trait dimensions each of which had described end-points. These traits are listed in the following table. Inspection shows numerous differences between the ratings by black and white parents. Likewise, the ratings by teachers of black and white children also differ. How are these differences to be interpreted? Can they be taken as evidence for actual personality differences between the children themselves? It seems unlikely. In almost every instance the direction of difference seen by teachers is opposite to that seen by black and white parents when describing their respective children. In sum, the black parents describe their children more favorably than do white parents. Contrariwise, teachers describe black children less favorably than they describe whites. This summary statement holds true for three definitions of favorability: a priori judgment by one of the principle investigators; the direction of difference between mean ratings by parents vs. teachers (presumably parents are more prone to ascribe favorable traits to their children than are teachers; consequently, the direction of difference between teacher and parent ratings defines the favorable pole of each adjective); and lastly, the side of the neutral point on which the mean response of parents lies (this definition also rests on the assumption of a parental bias toward favorable perception of their children).

TABLE 6

PERSONALITY RATINGS OF BLACK AND WHITE CHILDREN BY PARENTS AND TEACHERS

Traits 1 Low Score	7 High Score		Mean Rating of Whites and Blacks by: Teachers	Parents	F-ratios Teachers	Parents
healthy	unhealthy	W	3.06	1.92	6.29	2;64
		B	1.98	1.68		
fearful	not fearful	W	4.40	4.76	16.36	<1
		B	4.02	4.97		
unsociable	sociable	W	5.08	5.94	6.93	<1
		B	4.85	5.98		
slow	quick	W	4.43	5.37	29.65	15.52
		B	3.87	4.84		
obedient	disobedient	W	2.99	2.77	40.38	10.64
		B	3.66	2.43		
prone to anger	not prone to anger	W	4.75	4.44	36.44	<1
		B	4.12	4.45		
weakwilled	strongwilled	W	4.61	5.54	6.82	<1
		B	4.39	5.54		
helping	not helping	W	2.86	2.50	31.81	13.18
		B	3.35	2.12		
difficult to discipline	not difficult to discipline	W	5.12	5.21	46.37	<1
		B	4.30	5.30		
self-confident	feels inferior	W	3.67	2.89	16.38	3.76
		B	4.07	2.66		
tense	relaxed	W	3.94	4.51	<1	15.59
		B	3.85	5.04		
dependent	independent	W	4.26	5.03	8.90	55.71
		B	3.96	3.99		
noisy	quiet	W	4.43	3.69	26.52	2.63
		B	3.85	3.92		
likes school	dislikes school	W	2.69	1.86	18.39	5.94
		B	3.07	1.62		
prone to tantrums	not prone to tantrums	W	5.57	5.73	50.24	26.88
		B	4.81	5.04		
patient	impatient	W	3.44	3.91	45.08	40.71
		B	4.16	3.05		
prone to worry	happy-go-lucky	W	3.83	4.63	5.29	29.68
		B	4.03	5.35		
energetic	not energetic	W	3.30	2.16	1.86	6.48
		B	3.43	1.91		
cautious	bold	W	3.85	4.23	1.83	8.63
		B	3.96	3.84		
assertive	submissive	W	3.86	2.99	1.01	13.74
		B	3.87	3.40		
not demanding	demanding	W	3.50	4.19	13.42	7.28
		B	4.16	3.82		

N W= 535, B= 223 df= 1/756

What might account for a stronger motivation by black parents (as opposed to white parents) to describe their children favorably? Two explanations seem reasonable. On the one hand, black parents may have been more motivated to present their children favorably. After all, the decision to initiate a bussing program was at least in part a response to the feeling that prior steps toward compensatory education were insufficient and that something more needed to be done to give blacks quality education. To the extent that such feelings did indeed exist, greater defensiveness (or favorable self-description of their children) might reasonably be expected. Alternatively, these differences in parent ratings may stem from a methodological problem. Whereas both white and black parents supposedly make their ratings jointly, in fact, in more cases for blacks than whites, the father was absent and consequently the rating was made only by the mother. It is reasonable to assume that mothers might rate their children more favorably than would fathers. Of course this can be checked by separating those black families without fathers and comparing the ratings of the two. Since this analysis has not yet been performed, this interpretation too remains as speculation.

As already indicated, the teacher ratings too show a consistency across traits--though opposite in direction to that by the parents. Again we are faced with the question of whether their ratings can be taken as providing information about trait dimensions, or rather, reflect a halo rating for whites in comparison to blacks. There is no easy way to assess whether this is so without valid independent data on the extent to which blacks and whites respectively possess the traits. In the absence of such data,halo remains as a fairly compelling interpretation.

Given the likelihood of opposite response biases in the ratings of black and white children by parents and teachers respectively, some true differences between

the traits of black and white children are nevertheless suggested by these data. These "content domain" differences can be inferred from the instances of exception from the general pattern of each of the two sets of raters (and from the instances where there is convergence in the ratings by the parents and teachers). Among parent ratings, three traits show some evidence of reflecting real differences between black and white children: dependent-independent; slow-fast; more prone to tantrums-not prone to tantrums. Based on our previous line of argument, black children may be more dependent, slower, and more prone to tantrums. Teacher's ratings also imply that black children are healthier and less strong-willed.

In sum, these data at best supply little information about black-white personality differences. There are two threads that emerge. The first hints that black children are more dependent, less assertive, less strong-willed. This suggestion is strongly supported by results on two other independent personality measures (the Witkin Rod and Frame test and the measure of susceptibility to peer pressure). These show the black child to be more dependent and vulnerable to influence. The second thread is still more tenuous. If the white child is indeed less healthy than the black but the black is more prone to tantrums than the white, these data may reflect on the way in which stress or tension is handled. It suggests that blacks seem to express themselves more impulsively, directly, or immediately, whereas the whites may somatize more, thereby creating the perception of being less healthy. These hypotheses can be further tested with other available data. For instance, if true, the attendance records should show more absences for whites -- perhaps particularly so for one-day or half-day absences since these are more likely to reflect somatic illness. Additionally, these differences may be more attributable to socioeconomic class than race.

Longitudinal analyses: the effects of desegregation on personality.

For those personality traits on which premeasure and postmeasure scores have

been compared there is little evidence that the bussing program has had an effect. This appears equally true for measures on which pre-desegregation racial differences are very substantial (e.g. our adaptation of Witkin's Rod and Frame measure of field dependence) and those that showed only inconsequential racial differences on the premeasure (e.g. tolerance for delayed gratification). For most measures, only analyses comparing the premeasure to the first postmeasure have been completed. Perhaps, as has been suggested in our discussion of the achievement data, the premeasure and first postmeasure are temporally too close together to expect differences to emerge. The measure most extensively analyzed thus far is the ring toss game. Yet even here, where data from the second postmeasure as well as the first have been analyzed, there are no striking changes to be reported. Nevertheless, since these data have probably been more carefully and extensively analyzed than any of the other personality measures in the children's interviews, we present a summary of this work below.

Level of aspiration.* Goals and goal directed behavior are important variables in motivational theory. Those high in achievement motivation tend to set moderate aspiration levels, whereas those with low achievement set either inordinately stringent standards or extremely lax standards. A moderate level of aspiration is more likely to be associated with classroom success (Atkinson, 1964· Feather, 1961). In the Riverside School Study, the effects of attainment or non-attainment of self-set goals was assessed by means of a simple ring-toss game. This measure has proven to be relatively "culture fair" and compliments the school grade and achievement test measures.

The standard quantitative technique for the experimental measurement of level of aspiration was developed by Frank (1935). Level of aspiration is defined as the level of future performance that an individual explicitly undertakes to reach

* These analyses were organized and completed by David Redfearn.

while working on a familiar task. It is assumed that reaching the goal constitutes success, and not reaching it, failure. In our ring-toss task, subjects chose their throwing distance from the target peg (i.e., set the level of difficulty of the task), estimated the number of rings they would get on the target peg, and performed the task. Within each year there were 11 trials, with 9 rings thrown per trial.

The subject population used in the analysis of the level of aspiration data is a selected subsample of the total Riverside School Study population; it assures that all Year One data comes from children attending segregated schools and that Year Two and Three children have experienced one and three* years of desegregation, respectively. The sample consists of 715 white children, 332 Mexican-American children, and 225 black children.

Five basic scores have been summed across trials within years for use in the analyses: (1) distance choice (assumed to reflect task confidence), (2) expected performance, (3) actual performance, (4) attainment discrepancy (or, amount overestimated--a measure of feelings of success or failure), and (5) goal discrepancy (the algebraic difference between expected performance and actual performance on the preceeding trial--a positive score indicates striving for improvement).

Across all three years, Mexican-American subjects clearly exhibit the most confidence (in distance choice) and best actual performance of the three ethnic groups. However, the Mexican-American children are at the same time more conservative in their reactions to their actual performance, and as a result have the most accurate expectations. The Mexican-American children have the lowest attainment discrepancy scores in all three years, though the difference is large only in Year One (all three ethnic groups do maintain positive attainment discrepancy

* Data was collected during the 1965-66, 1966-67 and 1968-69 school years. Desegregation took place in the Fall of 1966. In this discussion, these years are identified as Years One, Two and Three.

scores; the task procedure instructs the interviewer to give the child mild praise after each trial, which helps to support the slight overestimation). Also, the Mexican-American children show the samllest goal discrepancy scores, which remain almost constant across the three years. (Goal discrepancy scores decrease across years for the white and black children). The comparative lack of striving of the Mexican-American children may be interpreted either positively (as satisfaction with what is actually superior performance) or negatively (as lack of motivation for further improvement). In light of high Mexican-American confidence (in distance choice) and actual performance, the positive interpretation is perhaps most likely correct.

For all three years, black children have the highest levels of expectation; the differences are small in Years Two and Three, however, and are not significant. Boyd (1952) also found black children to have higher expectations when compared to whites on a performance task. In our data, high expectations among blacks appear to be strongest among those children choosing to stand close to the target peg. In actual performance, the black children are close to the level of performance set by the Mexican-American children, and consistently superior to the white children. Again, the black children compare most favorably with the other ethnic groups at closer distance choice points. Black children have the largest attainment and goal discrepancy scores for all three years, apparently indicating strong efforts at improvement. No strong effects of the desegregation experience are evident in the scores for the black children across the three years.

The white children turn out to be the poorest performers on the ring-toss task: they consistently have the lowest actual performance scores. However, integration has clearly not hurt their performance. They show a large increase in performance across years; they also exhibit the greatest increase in confidence across years: starting from the smallest distance choice in Year One, they have

reached approximate parity in Year Three.

Future Work. Analysis of the level of aspiration of the Riverside School Study children can proceed profitably in several ways.

(1) Further performance measures may be derived from the basic ring-toss data not in hand, plus the fourth year of data that has just been collected. A likely prospect is the analysis of "typical" and "atypical" changes in confidence ratings following success and failure experiences on the task. Feather (1968) has identified typical changes in confidence following success and failure under skill conditions. (A typical change is defined as one in which a subject raises his confidence rating following success or lowers it following failure).

(2) Other School Study measures may be related to ring-toss performance. For example, locus of control has been shown to be related to confidence shifts on performance tasks (Feather, 1968: Rykman & Rodda, 1971). We have locus of control data on the subject children in Years Two and Three. Similarly, a measure of "desire for mastery" collected in Years Two and Three should complement the goal discrepancy ("striving") measure of level of aspiration data.

(3) Beginning in the third year of data collection, a new level of aspiration measure has been added--a dot estimation task. The children are given the task of estimating the number of dots on a set of 3" by 5" card stimuli. This task was purposely designed to be a "cognitive" task to complement the physical performance ring-toss task. The first set of the dot judgment task is now ready for analysis.

(4) A controlled experimental study of level of aspiration behavior of the three ethnic groups will aid in evaluation of hypotheses derived from the survey data. Particularly important would be the manipulation of initial success/failure on the level of aspiration task independently of ethnic group. Observations of the reactions to an initial failure experience by the Mexican-American children should prove valuable in identifying their motives on the task.

The children's drawings*

At the end of each of two interviews, for each of the three past data-collection years, partly as a fill-in activity for the subject while the interviewer completed some ratings on the child, the child was given paper and crayons and requested to draw a picture. For years I and II (spring of 66 and 67) all children were asked at the end of the first interview to " draw a picture of a person," at the end of the second to "draw a picture of yourself." For year III (spring of 69) the order of the requests was reversed for all but the children then in Junior High (originally our 4th through 6th graders). This administrative change somewhat complicates the situation; further complications ensue from the facts that (a) the size and quality of the paper provided the children varied, and (b) all children did not receive the standard box of eight crayons (some received boxes of from 12 to as many as 24 and older children were given colored pencils rather than crayons). Despite these difficulties, shelved in Riverside there do exist -- neatly ordered, encased in plastic, and filed in large notebooks -- 3316 children's drawings obtained in 1966, about 3,000 from 1967, and 2652 from 1969, plus a small sample obtained in 1969 from children newly entering kindergarten in that year. During the past winter this raw material has been examined, coded, carded, and disked, and some initial analyses have been performed.

The drawings of children are frequently suggested as a source of valuable insights. They can and have been considered as art objects (Alschuler, 1969; Arnheim, 1954), as psychodiagnostic devices (Buck, 1948; Buck & Hammer, 1969; Machover, 1949), as developmental guides (Eisner, 1967; Goodenough, 1926; Harris, 1963), and as possible socio-cultural indicators (Dennis, 1966; Segall, Campbell & Herskovits, 1966). Although the Riverside drawings could conceivably be examined

* The coding and analyses reported in this section were organized and completed by J. D. Goodchilds and S. Rakow.

by aesthetic criteria and as clinically instructive, it is for their developmental and socio-cultural information that we are presently studying them.

There are only a handful of studies (for example, Gardiner, 1969; Koppitz, 1969; Lourenso, Greenberg, & Davidson, 1965; Wise, 1969) that have examined children's drawings in the light of differences in the social, socio-cultural, or ethnic backgrounds of the subjects. And Harvard psychiatrist, Robert Coles, has in a thoughtful book relating his experiences working with black children in the Deep South made some provocative, although unverified, observations:

> Every Negro child I know has had to take notice in some way of what skin color signifies in our society. If they do not easily -- or at all -- talk about it, their drawings surely indicate that the subject is on their minds...
>
> [Coles, 1967, p.62]

To our knowledge the only extant collection of children's drawings systematically and repeatedly gathered from a large sample, with a wide age-range, over a long time span, and including three different ethnic groups is the Riverside collection. A careful, probing analysis of these drawings along the lines we have been pursuing and have outlined herein should, we believe, prove uniquely informative.

Scoring and constructing indices. In devising a coding system for our materials we have had little help from the work of others. There is in the literature only one reliable standardized procedure for scoring children's drawings -- the Good-enough draw-a-man test developed in the 1920s by Florence Goodenough and recently revised by Dale Harris (Harris, 1963). Unfortunately our testing situation differed from the prescribed Goodenough set-up in three ways, each of which proved in its own way distressing. First, the draw-a-man test uses pencil rather than crayons; much of the standard scoring depends on fine detail which cannot be achieved with crayons. Secondly, the Harris-Goodenough instructions specify draw a man, a male figure. We did not specify sex and accordingly the distribution of sex of figure approximates the distribution of sex of subjects. The standard (Harris) scoring

applies only to the male figure (as drawn by both sexes); a different and in some respects less adequate set of norms has been developed for "draw-a-woman" testing, but the two scales are not equivalent. (There has also been some work with self drawings by Harris, but it is inconclusive). Third, we did not in our instructions insist on a full figure drawing, nor did the interviewers monitor the child's work. On our initial data collection (Year I, Schedule I) we had 91 among our 1680 pictures which were not full figure drawings: 18 contained no recognizable humans in whole or in part, 73 were "head only" portraits. For scoring along Goodenough-Harris lines, anything but a full figure is useless. More importantly, we have found it inadvisable to treat head-only portraits in the same way as the others with <u>any</u> system; the two kinds of drawings are quite different products. The resulting data loss (or split, if you will, since the head-only pictures themselves may be of interest) becomes greater with each year since the "portrait" response is characteristic of the older child.

Although our drawings -- for the reasons given -- cannot be directly scored by the Goodenough-Harris criteria, that system does allow for a supplementary, rougher estimate of developmental level which in modified form we have been able to apply. A set of twenty-four graded figure drawings (twelve for each sex) constitute the standard; the drawing to be judged is assigned the number (1 to 12) of that picture which it most resembles. Scores derived in this way (Harris's "Quality Scale Scores") can be converted to the regular Goodenough-Harris "Point Scale Scores," but the conversion is error-full. The less detailed Riverside <u>crayon</u> drawings could not reliably be scored along the full 12-point dimension; a three-point compromise was best: Riverside 1 equals Goodenough-Harris 1 or 2; R-2 equals G/H-3,4,5; and R-3 equals G/H-6,7,8,9,10.

With the exception of the quality scale derived from Goodenough-Harris and an item concerned with whether or not the figure 'floats" or is somehow "grounded,"

suggested by the work of Elliot Eisner (1967), the coding system created and applied to the Riverside drawings is unique and our own. The approach we took was to try for the most inclusive coding possible, i.e., everything scorable which seemed potentially useful was scored. This results in a set of about forty items per drawing, ranging from such minutia as whether or not there are fingers on the figure's hands (56% of the initial drawings had same) and whether a child used each specific color, to more general "judgmental" items (such as the already mentioned quality scale) and several index-type scores which are summations across individual items (number of body parts shown, number of colors used, etc.).

The actual coding of the three years of drawings was done in Riverside by two workers experienced with survey schedule coding, who were trained and supervised.* A reliability check, inserted relatively early in the time sequence, consisted of a "blind" coding of the 116 drawings of an approximately random group of 60 children. The results were most gratifying. For 29 of 33 comparisons the percentage agreement between the two coders was 95 or better (the remaining 4 were above 90); for four items more appropriately estimaed in correlational terms, the average Pearson r was +.92. The reliability estimate for the Good-enough-Harris quality scale approximation, although our lowest, was a reassuring +.84.

Initial results. Thus far the 1966 (Year I), Schedule I ("person") drawings alone have been examined in any detail. Three obvious population variables -- age (grade), sex, and ethnic classification -- have formed our analytic grid. Each of the three factors exerts an appreciable influence on the drawing scores: analysis of variance procedures to estimate interaction effects are appropriate and planned for this material. Presently we can say that older children, girl children, and

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* We wish to thank our coders, Sybil Brown and Ruth Wilson, for being both conscientious and resourceful at a sometimes tedious task.

white children produce higher quality drawings in Goodenough-Harris terms; these groups produce more complete, more elaborate, and more colorful drawings of "a person." There is some evidence that the ethnic, though not the sex, differentiation is less for the older (grades 4-6) children. There are also enough exceptions to these general tendencies to caution us against premature conclusions and to arouse our interest in further analysis. (For example, black children include the most "accessories" and "other items" in their pictures, the sex differential favoring girls seems to be more pronounced among whites, etc.).

An area of obvious concern, the differential use of color by the several ethnic groups, is proving rather troublesome. On this first set of drawings, for instance, we find that 81% of the children avoided the problem of facial skin color by leaving the facial area untouched (the better to see the features perhaps), separately by ethnic classification the percentages are: 76% of whites, 84% of Mexican-Americans, 86% of blacks. On hair color, two-thirds of the sample chose brown or black and there seems to be no ethnic difference. And further, although about one-third of the figures are drawn with brown or black hands, the characteristic seems not be associated with ethnic identity. There is some indication that rather than how a color is used, how much it is used (in terms of relative frequency) may vary among the groups. At present we cannot be sure.

Plans for analysis. To assist us in planning our analysis of this material (as well as in originally developing the coding system) we have worked with a set of xerox (thus colorless) copies of two drawings (Year I, Schedules I and II), of the Riverside children who were assigned the first 75 case numbers. Since the numbers were assigned alphabetically, this approximates a random selection. Based on the sample material, we expect to find very little to differentiate the drawings the Riverside children produced under "person" versus "self" instructions. Under "self" instructions there will no doubt be an increase in the number drawing their

own sex, and perhaps the hair and skin colors used may agree somewhat with ethnic identity. However, it seems most reasonable to view the two drawings produced by a child within a year as two samples of the same thing and average the scores in some fashion. The gain in reliability should greatly enhance our longitudinal comparisons.

The procedure proposed, accordingly, is to combine the Schedule I and Schedule II pictures for each year and, using analysis of variance, examine the several sets of scores. The factorial design we intend to employ will extract variance estimates for sex, ethnic group, and age/grade (the latter compressed into a 3-level factor, plus a repeated-measure estimate of year (also at 3 levels) -- which of course involves the pre to post desegregation interval in the study community.

In addition to this major series of testings, there are some internal cross-tabulations which (a) might tell us more about children's drawings per se (e.g., are pcitures drawn by same-sex artists more detailed than cross-sex drawings and is there an age effect?), and (b) might lead to indices derivable from the drawings which would be both less obvious and more informative.

Looking ahead, we hope to integrate the work on this particular bit of the Riverside materials with other data. The children's drawings as now scored may provide new, rather different estimates of developmental level, of social attitudes and/or interests, and possibly of ethnic identity. It will be important to check out the ways in which these drawing estimates relate to other Riverside variables.

Of two groups of drawings already coded but still to be examined, one presents special problems and one provides special comparisons. First, there are the drawings which consisted of head portraits, a number which increases from less than a hundred on Year I, Schedule I, to a distressing 350 on Year III, Schedule II. These pictures have been scored, but of necessity the coding system differs and certainly the significance of various items can be expected to differ also.

Secondly, there is the interesting group of pictures obtained from the several hundred kindergarteners in 1968-1969, i.e., totally post-desegregation. We have yet to look at the drawing scores for this group.

It is not contemplated at this stage to apply to the drawings which have been obtained from our same Riverside sample this current year (spring, 1971) the coding system we used for the earlier material. A preferable procedure, we feel, would be to approach the new drawings more intensively. The analysis of the data for Years I, II, and III should clarify the major parameters of this particular drawing behavior. With that understanding, it may be possible to turn to the less easily quantifiable questions of aesthetic and emotive (feeling tone) aspects of the pictures. Dimensions such as active-passive or happy-sad, artistic qualities such as symmetry or color harmony as these things are related to ethnic, developmental, or school-experience differences can, we expect, reasonably be explored with the new material. This kind of approach, however, would require freer access to the raw data than we have hitherto been able to arrange.

Future work

Similarly detailed explorations comparing the premeasure to the first post-measure have been done for several other personality measures in addition to the ring-toss (e.g. internal vs. external control; field dependence; delay of gratification; responsiveness to social reinforcement; tolerance for dissonance; susceptibility to peer pressure, etc.). As previously mentioned, few changes of consequence have been found between the premeasure and the first postmeasure. Now, analyses comparing the premeasure to the second postmeasure are underway. The analysis of each presents its own special problems. In addition to the evaluation of possible changes due to the desegregation experience, these analyses will reveal important developmental trends and sex differences in personality.

Work on the validation of personality measures will continue. In part, this includes examination of the relations among personality measures obtained directly from the child. Additionally, it means examining the relation between these measures and others obtained from parent and teacher interviews.

The problem of response biases has arisen from our attempts to analyze the various Likert-type items used as personality measures. This issue is worthy of study in its own right. Little is known about the development of such response biases in children, much less the differences due to race and socioeconomic class. While viewed by the psychometrician as a problem to be overcome through balancing and careful wording of test items, these biases reflect important personality differences worthy of study in their own right.

Obviously, much work needs to be done on relating personality measures of academic performance. This need has been mentioned in the section of the report dealing with achievement and will not be reiterated in detail here.

Academic Achievement

Achievement test performance

To date, analyses of academic achievement in our sample of three ethnic groups in Riverside have been based solely upon measures of reading derived from the Stanford Reading Achievement Tests and various other reading achievement tests administered by the school district. Though measures of arithmetic and other dimensions of intellectual performance are also uniformly administered by the district, these have not as yet been analyzed. Analysis of standardized reading achievement scores has revealed no marked change in academic performance as a consequence of the introduction of the bussing program. After one and two years of desegregation, the white children seem to be performing at relatively the same level as they were before the bussing was initiated, and the Mexican-American and black children do not appear to have made any significant relative gains (Singer, 1970). Similar analyses by Purl (1971) reveal essentially the same outcome. While the achievement of bussed students has not increased, the gap between them and others in their receiving schools is at least as wide in 1970 as in 1966.

The analyses on which these conclusions are based are, of course, preliminary. In the case of Singer's results, they essentially only include data from the first two years of data collection. And, as indicated above, both sets of analyses only examine reading achievement scores. It is now possible to perform more extensive analyses of standardized achievement test performance in that we have more carefully and extensively derived measures of achievement. We now have available for loading into the permanent storage of our computer system standardized math achievement scores, standardized verbal achievement scores, and standardized total achievement scores (the combination of the two). Each of the three has been standardized in two ways: within grade only, and within grade and ethnic group. The first type of score will show ethnic group differences where they exist, while the second type of score eliminates those differences. These

standardized scores have been derived from student performance on the Metropolitan Readiness Test, the Stanford Achievement Test (which includes word meaning, paragraph meaning, total reading, arithmetic computation, arithmetic concepts, and arithmetic applications), SCAT (verbal, quantitative, and total), and STEP (math, reading, listening, writing, science, and social studies).

Clearly the seemingly pessimistic conclusions presented above must be taken as only suggestive, particularly since our study lacks an ideal control group. Furthermore, it could be argued that it is too soon to expect minority improvement to manifest itself. Nevertheless, with all the releveant cautions in mind, analyses on other segments of the Riverside school study data suggest that it would not be surprising if the more detailed analyses of achievement test performance currently being carried out continued to show a "no effect" outcome for the bussing program. The moral and social justifications for eliminating de facto segregation in the public schools are beyond question. At this stage the important concern is discovering what kind of educational experiences most effectively improve the learning of minority children. So far, attempts to determine whether particular types of school environments are more or less beneficial to blacks have not proved encouraging. In a small sample of second and third grade blacks matched on pre-integration achievement but differing in whether they were sent to a receiving school ranked in the upper or lower third in mean achievement, no differences were found after two years of integrated education (Singer, 1970). Clearly, more analyses of this sort are needed, not only in terms of differentiating among receiving schools within theysystem but also in terms of individual classroom climates or teacher attitudes within schools. Toward this end, we have been developing indirect methods of assessing teach stereotypes and bias toward minority children. For instance, one component of school study data consists of teacher ratings of students on an array of personality trait dimensions. These ratings typically show a difference

in the direction of more favorable evaluation of white children in comparison to minority group children. We suspect that the magnitude of this difference might serve as an indirect measure of bias. Likewise, the sociometric data will allow us to select out schools and individual classes in which minority members are more effectively integrated into the social structure of the classroom. Thus, it will be possible to assess whether the academic performance of minority members is enhanced when integration is not only merely physical but social as well--whether individual teachers who year after year create classroom climates in which minority members are socially integrated will also elicit superior academic achievement from minority students.

Relationship between intellectual endowment and achievement

The Riverside school study data includes three measures of intellect: the Raven Progressive Matrices Test, the Peabody Vocabulary Test, and the Wechsler Intelligence Scale for Children. While the literature on intelligence testing makes it clear that no measure presently available can serve as a pure measure of the genetic contribution to intellect, it is nevertheless assumed that the genetic contribution controls a substantial portion of variance intelligence test performance. Among the three measures we have employed, it was our own estimate that the Raven Progressive Matrices Test would be the most culture-fair measure among the three. That is, the idiosyncratic and unique ethnic-cultural contributions to the socialization processes experienced by the children of the three racial-ethnic groups within our study would be minimized most in the performance on this instrument. Contrariwise, we suspected that they might intrude most strongly into scores on the Peabody Vocabulary Test. For our present purposes, we'll simply avoid the controversial issue of to what extent these measures are indeed measures of innate intellect. Nor do we attempt to claim that any one of them reflects true racial differences in innate ability. Instead, we use them to examine the relation between intellect and other measures.

In this section we will examine the relation between each of these intel-

lectual measures and overall academic achievement. Pooling all three racial groups, the Standardized Total Achievement Scores are more strongly related to WISC scores than to either Raven or Peabody scores. This pattern is essentially true for each of the three racial groups when examined individually. The relative predictive strengths of the three instruments are approximately the same for blacks and whites with the possible exception that the Raven is a slightly stronger predictor for blacks than for whites. For Mexican-Americans, all three measures of intellect are poorer predictors of academic achievement than they are for whites and blacks. Perhaps this outcome simply reflects the fact that these three measures of intellect are indeed not culture-fair instruments.

In examining the achievement test performance of students in adjacent wo-decile blocks on the intellectual measures, the largest difference in achievement scores is found in the comparison of blacks in the 60th to 80th percentile on the WISC to those in the 80th to 100th percentile. Indeed, the difference in the achievement scores of the blacks in the top 20th percentile on the WISC in comparison to those within the 60th to 80th percentile is literally twice the magnitude of that in any set of adjacent two-decile blocks among all racial groups on any of the three intellectual measures.

What is the meaning of this somewhat anomalous finding? Perhaps it reflects a particularly attentive, encouraging, and rewarding attitude on the part of teachers toward those blacks who are unusually intelligent. If this explanation is valid, however, it implies that the skills and abilities measured by the WISC (in comparison to those measured by the Raven and Peabody) are both more ubiquitously displayed in daily classroom activity and responded to by teachers.

Achievement motivation

One of the central reasons for expecting the bussing program in Riverside to improve the academic achievement of minority children was the assumption that certain motives and values are important mediators of academic achievement. It has been suggested that these attitudinal variables (e.g., the intrinsically

rewarding properties of overcoming barriers, the preference for the delayed large reward rather than an immediate smaller one, the desire for approval from authority figures) are learned by the middle-class white child through the socialization process but are not as well internalized by minority children. Thus, it was assumed that exposure and interaction with middle-class white students would enable minority students to assimilate the achievement motivation and value structure that is allegedly mitigated by lower-class socialization processes.

This expectation was largely based on conclusions from the Coleman report:

> If a white pupil from a home that is strongly and effectively supportive of education is put in a school where most pupils do not come from such homes, his achievement will be little different than if he were in a school composed of others like himself. But, if a minority pupil from a home without much educational strength is put with school mates with strong educational backgrounds, his achievement is likely to increase. (Coleman Report, p. 22)

The remedial mechanism that could presumably mediate such an effect on the achievement of minority pupils in integrated schools is the lateral transmission of peer group values. There are two basic assumptions that are implicit in this remedial model. The first assumption is that initial differences in achievement motivation do exist between minority and white students. The second assumption is that high achievement motivation is essential for excellent academic achievement among the minority students. Results of recent research both from the Riverside school study and other studies on other populations raise questions and cast doubt about the validity of both of these assumptions that underlie the remedial effect hypothesized by the value transmission process.

Initial differences in achievement motivation

As indicated above, one essential underlying ingredient of the value transmission process is the assumption that before desegregation, minority children exhibit less achievement motivation than white children. Several items among the Likert-type questions administered in the children's interviews can be pooled to form indices of achievement motivation. To date, we have primarily focused

on a fifteen-item scale consisting of questions that seem to have face validity as indicators of achievement motivation, e.g., "Would you be happy if you got all C's on your report card?"; "Does it make you feel bad when you get a low grade in spelling?"; "Do you want to do things better than other children do them?." Another index of achievement motivation has been derived from the School Involvement Pictures--a set of line drawings depicting children engaged in various activities in a classroom and in a school yard. The child is asked which of the children pictured is most like him and which he would most like to be. The responses can be conceptualized as lying on a continuum running from active to passive (e.g., when choosing among children pictured sitting at their desk, does the child pick the one raising his hand or the one looking out of the classroom window?). From these data, the response indicating the child's ideal role was used in forming indices of motivation.

Intercorrelations of responses on these two scales were too low to warrant using a total score on either one as an index. Response bias in the achievement motivation scale may be responsible for much of the variance in the scores. We are currently performing extensive analyses (primarily factor analyses) to determine the extent to which this is true of this scale and other scales within our data. This problem is discussed more fully in a section dealing with personality measures. In some preliminary analyses, responses to individual items in this scale and their relation to one another were examined by chi-square analysis. Where results are significant, they indicate in six out of seven cases that the two groups of minority children have more achievement motivation than the white children. Significant chi-squares indicate that the minority children, as opposed to the whites, would feel worse about not being in the best reading group; would be more upset if they did not get all A's and B's on their report card; would be more interested in skipping a grade in school if they could; are more upset when they lose at games; are more concerned with doing things better than other children; and feel worse if someone else is chosen captain of the team.

On the other hand, the whites seem to be more unhappy with all C's than the minorities. The apparent contradiction between this last item and the one reported first, as well as the low intercorrelations casts some question on these items as measures of achievement motivation. However, it is clear that to whatever extent these items are measuring achievement motivation, it is not the case that the minority children have less of it.

On the school involvement pictures, when asked which seat among a row of seven would be most preferred, whites choose to sit further back than either of the two minority groups; Mexican-Americans choose to be closest to the teacher. Though there was no ethnic effect upon ideal classroom role (raising hand, looking out window, etc.), when asked about desired role in a game of tetherball, minority children again tend to choose more active roles. Once again, these data question the notion that minority children lack sufficient desire to be active and involved in school. However, it will be important to ascertain whether these differences effect motivation towards participation and involvement in school activity or instead other underlying motives such as need for approval or affiliation. One source of information about the strength of such other motives are the Children Apperception Test protocols. The tape-recorded CAT protocols have all been transcribed and are now being scored for such motives.

To add further to the possibility that minority children may not differ from whites in the motivational ingredients deemed necessary for superior academic performance, we turn to ancillary data from the school study. Tolerance for delayed gratification was one of the personality measures obtained in the children's interviews. Other psychologists (e.g. Mischel, 1961) see tolerance for delayed gratification as underlying achievement motivation. In consonance with the failure of Slogett et. al. (1970), to detect achievement motivation differences among minority members who differ substantially in academic performance, we fail to find racial differences in tolerance for delayed gratifi-

fication (Miller and Zadny, 1969). This failure cannot be traced to any inadequacy of the measure since very reliable and interpretable developmental trends appear in each of the two independent behavioral measures of tolerance for delay.

Ours is not the only data that reject the notions of minority deficiency in motivation. Proshansky and Newton (1968) after reviewing the voluminous literature on education and occupational aspirations of black and white children and their parents, conclude that the two groups do not differ substantially. The major difference lies in their expectations of attaining their goals. Low income students and parents expect to achieve lower level goals.

The most often cited support for a difference in achievement motivation between ethnic minorities and middle-class whites stems from fantasy imagery produced in response to TAT type stimuli. Imagery indicative of a need to achieve is less evident among low achieving groups (McClelland, 1961), (Atkinson and Feather, 1966). However, most of these studies have not been conducted with school age children. Baughman and Dahlstrom (1968) provide an exception. In a sample comparable in age to our school children in Riverside, they report that black children do indeed produce less achievement imagery than whites. Whether this holds for our own data awaits analysis of the CAT protocols. Nevertheless, the psychological implications of this difference as reported by Baughman and Dahlstrom brings us to the next issue, the validity of the assumption that achievement motivation mediates success in school.

Relationship between achievement motivation and performance

As previously indicated, the notion that achievement motivation is an important mediator of success in school is an essential tenet of the "value transmission" hypothesis. Obviously, there would be little reason to foster the adoption of these values and motives in minority children if once acquired, they were irrelevant to the child's overt behavior. Given the broad acceptance of the importance of such values and motivation, it is surprising to find that

among school children, evidence relating their possession to performance is virtually non-existent.

Baughman and Dahlstrom (1968) as mentioned above, did find a difference in amount of achievement imagery produced by black and white children. However, when they performed correlations within ethnic group between achievement scores and teachers' ratings of relevant behavior (e.g. capacity to work independently, reaction to success and failure, concern with quality of work, effort on lessons) they fail to find significant relationships even in their sample of white children. Of course, the negative outcome could also stem from invalid ratings by teachers. However, even if we are willing to grant the possibility of a relationship between need achievement and actual performance among white middle-class children, there is no evidence to support the notion that this relationship exists among ethnic minorities. Especially lacking is evidence relevant to minority children in the primary grades.

What little data does exist suggests no relationship for minority children. Slogett, et al. (1970) studied fantasy achievement need among high and low achieving Hawaiian-Americans--a group comparable in social position to our black and Mexican-American children. Although the high achieving group had significantly superior scores on standardized achievement tests, their need achievement scores were virtually identical to those of the low achieving group. Furthermore, the need achievement scores of <u>both</u> groups of Hawaiian-American children were lower than those of samples of Japanese and Fillipino children, (whose achievement on standardized tests was about midway between the two Hawaiian samples). The author summarizes this study succinctly:

> In general, the data suggest that attempts to explain the problems of American ethnic minorities in terms of psychological motives must first assess what is valued by the members of the respective groups. If there are variations across ethnic groups in the motivational antecedents of achievement, then attempts to foster higher achievement--for example, among Afro-American youngsters in ghetto schools--may fail if it is assumed that n Ach is or can be a primary motive. It is likely that greater success could

> be achieved if the schools were organized to take advantage of the motives operative within particular ethnic groups. (p. 60)

It is for precisely these reasons that we indicated some scepticism at the outset about the probability of substantial improvement in the academic achievement of Riverside minority children after desegregation. If it turns out to be the case that the motivational antecedents of learning are indeed different for minority children than for white children, then it is unreasonable to expect that a process that promotes assimilation of white values by minority children will affect the performance of minority children.

Instead, perhaps other motivational systems besides needs for achievement need to be tapped or perhaps characteristics of school climate, educational programs, or teacher attitudes are more important. Interestingly, one of the other conclusions of the Coleman report is consonant with the notion that school characteristics are particularly important for minority children.

> The average white student's achievement seems to be less affected by the strength or weaknesses of his school's facilities, curriculums, and teachers than is the average minority pupil's. . . .the inference might then be made that improving the school of a minority pupil may increase his achievement more than would improving the school of a white child increase his.

Proposed Analyses

Even if we accept the two questionable premises discussed above--1) that minority children lack the degree of achievement motivation possessed by whites, and 2) that achievement motivation is an essential requisite for superior academic performance among minority children as well as whites, the predictions that stem from the lateral value transmission hypothesis are not clearcut. Presumably, when embedded among whites, minority students will internalize the stronger achievement motives prevalent among their white peers. However, analysis of tolerance for delayed gratification--theoretically an essential ingredient for effective operation of achievement motivation--reveals interesting socioeconomic effects that may obfuscate the expected value transmission effects.

While blacks show the expected effect of more tolerance for delayed gratification as a function of higher socioeconomic class, the opposite effect occurs for whites! Among white children, regardless of their grade, the higher the socioeconomic level of their family, the less their tolerance for delayed gratification (Miller and Zadny, 1969)! This is exactly the finding that would be expected from Slater's (1970) analysis of the changing American culture. As a culture changes from an economy of scarcity to one of excess, the puritan values of frugality, postponement, and industry are inevitably undermined. But, what are the implications for the value transmission hypothesis? Who are the children most admired and emulated by minority students when they enter the formerly "all-white" receiving schools? If their ego-ideals or preferred models are those children highest in socioeconomic level, they will admire and emulate other children low in tolerance for delayed gratification!

While the discussion above is speculative and based on incomplete data analysis, it highlights some of the complicated strands that might comprise the causal net that we seek to unravel. Do the modeling effects that underlie the "lateral value transmission hypothesis" actually occur? Can these modeling effects documented with values and attitudes other than achievement related attitudes?

Is tolerance for delayed gratification related to need for achievement in the school study data? If so, is need for achievement or tolerance for delayed gratification less likely to be enhanced among minority children who are bussed to the more socioeconomically advantaged receiving schools? If so, and if society deems achievement motivation a value to be nurtured, what can be done? Is the modeling process simply a one-way exchange? Under what circumstances, if any, can values be transmitted from lower to more highly socioeconomically advantaged children? Do answers to some of these questions imply new policy decisions designed to move toward socioeconomic desegregation?

Clearly, the Riverside data cannot answer all these questions, but some clues can be gleaned through careful internal or subgroup analyses. For instance, a comparison was conducted to determine whether pupils bussed to schools at which their classmates are from high socioeconomic background achieve more than pupils bussed to schools with low socioeconomic classmates (Purl, 1971). The receiving schools were ranked at each grade level by the per cent of pupils whose fathers' occupations were professional or managerial. The scores of the bussed pupils at the five highest and five lowest among the 17 elementary schools were compared. No significant differences were found in four independent comparisons (see Table 1).

A similar analysis was then conducted using the average achievement of the receiving pupils instead of their socioeconomic status. Pupils bussed to high-achieving schools scored significantly higher than those bussed to low-achieving schools at every grade level. This was true for each of four independent comparisons (see Table 2).

These outcomes tend to support some of our arguments above. The lack of effect for schools comprised of students whose families differ substantially in terms of socioeconomic level meshes more nicely with the previously-mentioned socioeconomic effect on tolerance for delayed gratification than would a positive

TABLE 1

ACHIEVEMENT OF BUSED PUPILS IN CLASSES WITH HIGH AND LOW PERCENTAGES OF PUPILS WHOSE FATHERS' OCCUPATIONS ARE PROFESSIONAL OR MANAGERIAL

Grade	Socioeconomic Status of Receiving Pupils		
	High		Low
Kindergarten			
Number of Bused Pupils	53		73
* Mean Achievement Score	44.62		46.60
Standard Deviation	13.84		15.53
t		0.7466	
p (One-tailed)		N.S.	
Grade One			
Number of Bused Pupils	57		92
* Mean Achievement Score	19.54		19.26
Standard Deviation	5.36		6.17
t		0.2901	
p (One-tailed)		N.S.	
Grade Two			
Number of Bused Pupils	62		93
* Mean Achievement Score	27.47		30.40
Standard Deviation	.83		14.07
t		1.1711	
p (One-tailed)		N.S.	
Grade Three			
Number of Bused Pupils	47		43
* Mean Achievement Score	47.66		43.53
Standard Deviation	17.50		18.70
t		1.0669	
p (One-tailed)		N.S.	

* The differences among the means across grade levels is attributable to the fact that different reading achievement tests were used.

TABLE 2

ACHIEVEMENT OF BUSED PUPILS IN CLASSES WITH HIGH- AND LOW-ACHIEVING RECEIVING PUPILS

Grade	Achievement of Receiving Pupils		
	High		Low
Kindergarten			
Number of Bused Pupils	59		53
* Mean Achievement Score	50.20		45.47
Standard Deviation	14.45		13.09
t		1.8014	
p (One-tailed)		<.05	
Grade One			
Number of Bused Pupils	77		61
* Mean Achievement Score	21.77		17.82
Standard Deviation	6.97		6.47
t		3.4166	
p (One-tailed)		<.0005	
Grade Two			
Number of Bused Pupils	57		81
* Mean Achievement Score	37.19		28.16
Standard Deviation	16.04		13.15
t		3.4742	
p (One-tailed)		<.0005	
Grade Three			
Number of Bused Pupils	52		76
* Mean Achievement Score	51.29		40.86
Standard Deviation	17.26		21.84
t		2.9861	
p (One-tailed)		<.005	

* The differences among the means across grade levels is attributable to the fact that different reading achievement tests were used.

relation between achievement score and socioeconomic level of receiving school. Of course, the link is indirect. We will want to compare directly the tolerance for delayed gratification among students of these two sets of schools as well as other measures of achievement motivation as we derive them. The second analysis reported above--the one showing an effect for average achievement of the receiving pupils (instead of their socioeconomic status)--suggests that characteristics of individual schools rather than the underlying personality structures of the students in those schools may be the more important ingredient for enhancing minority performance. Curiously, these latter data contradict an alternate test of the same hypothesis (reported earlier by Singer). In that analysis, fourteen pairs of blacks matched for pre-integration achievement but contrasted in the level of mean school achievement of the receiving school to which they were sent did not differ in achievement. Whether this difference in outcome for two analyses concerned with the same essential question is due to the very small number of cases in Singer's analysis remains to be seen. It is also possible that the results of Purl's (1971) analysis reflect selection effects in the initial assignment of minority students to receiving schools. Perhaps those minority members sent to receiving schools with higher mean levels of achievement were those minority members who initially ranked high themselves in terms of minority achievement scores.

At any rate, it is clear that numerous other analyses need to be completed to understand the relation between achievement motivation and performance on achievement tests among both minority and white children.

For instance, analyses can be performed to more directly assess the strength of modeling between minority members and whites. Among those initially low in achievement motivation, do those who more characteristically make sociometric choices of persons high in achievement also show greater increments in achievement motivation over time? Analyses of this sort, exploring the modeling of change in and internalization of personality traits, can be performed in terms of

contrasting patterns of sociometric choice on a variety of personality dimensions (e.g. affiliation need, achievement need, tolerance for delayed gratification, achievement test performance, S.E.S., etc.). Although it is difficult to ascertain the causal direction in such relations, Blaylock (1964) Bhornstadt (1969) and others have discussed procedures for making causal inferences from such correlational data.

Other future work will further explore the antecedent conditions related to school performance within the minority groups. Gallimore (1969) provides some evidence to suggest that school performance among ethnic minorities is more closely related to an affiliation need than to an achievement need. He also suggests that ethnic minorities typically use patterns of socialization that train children to attend more to the social judgments of their peer group than to a single adult authority-least of all to a single female adult. This line of reasoning suggests that those minority children most thoroughly socialized within their own culture will suffer most in the typical public school classroom, a setting where the learning process usually depends on attention to a single teacher and inattention to the other children.

To test this hypothesis with our data, we plan to create an index of popularity with peer group using sociometric data, and to use this as an independent variable in assessing school performance. Those children who are most popular are most likely those who exhibit the characteristics most valued by their peer group. If the most popular children have lower achievement scores, the hypothesis would be supported.

There are several other measures on our interview schedule which should tap aspects of the affiliation need. One was a test of conformity to peer pressure. Before giving his own answer, the child is told that most other children answered a question in a certain way. On some critical trials the information on peer responses is wrong. If Gallimore's speculations are correct, minority children scoring high in conformity to peer pressure should perform more poorly in class.

As was already mentioned, a careful analysis of the CAT protocols is also proposed. The protocols are being scored both for achievement and affiliation motives so that the relative importance of each of these variables for school performance can be assessed.

A very important analysis concerns the relationship between the teachers' organization of the classroom and the performance of minority children. We suspect that those teachers who rely less on traditional authoritarian methods, and more on a classroom organized around student-centered activity, will be more successful in creating good performance among minority children.

Another area for future study concerns the relationship of certain parental attitudes and behaviors to the achievement and adjustment of their children. Again, the focus will be intra-ethnic. We plan to isolate those family characteristics that discriminate between children who are 1) popular and accepted among their peers, and 2) high achievers in school. Special attention will be paid to any existing conflicts between these two statuses.

In addition to pursuing the analysis of intra-ethnic motivational antecedents of achievement, we plan to investigate other possible predictors that are more cognitive in nature. This entails relating achievement motivation measures to the other personality traits assessed by our test battery.

Another question of basic concern is the extent to which comparisons of ability affect academic performance. Comparisons between minority children of equivalent ability (as determined by pre-integration standing in class performance or intelligence test scores) who are embedded in receiving classes where they differ either minimally or substantially from other minority children or from whites, should shed light on the importance of such social comparison processes. While on the one hand, the lateral value transmission process suggests maximal remedial effect where such discrepancies are large, social comparison theory (in combination with attribution theory) suggests just the opposite. Where such discrepancies remain small, self evaluation of ability will be higher. Consequently, such children

should reap the motivational benefits of their own and others' favorable perceptions of them.

Lastly, it might prove fruitful to examine the correlates of under and over-achievement. To pursue this, the relation between scores on the intellectual measures and the achievement measures can be used to define over and under achievement. Then specific subgroups can be derived from each ethnic group so that the relation between achievement motivation and over or under achievement can be assessed. These scores can also be used in a host of other analyses in an effort to tease out to the antecedents of high achievement. Although there are numerous problems implicit in attempts to measure under and over-achievement (Angoff, 1971; Thorndike, 1963), this line of attack may nevertheless prove fruitful.*

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* Lois Biener has been responsible for much of the work on the relation between achievement test performance and measures of achievement motivation.

Ethnic Attitudes*

Most of the research conducted in the area of racial identification and awareness has been done with preschool children using black or white dolls, or pictures of black or white children as stimuli. (Morland, 1958, 1962, 1963· Goodman, 1958; and Clark and Clark, 1947). The findings of these studies provide a relatively consistent picture of the development of racial identity of the minority child. Clark and Clark (1947) report that black children in racially mixed schools (black and white) tended to identify themselves as being black less frequently than did black children in segregated schools. In both groups, a larger proportion of four-year-olds correctly identified themselves with pictures of their own race than did three-year-olds. Black children were asked to express a preference for a black or white doll in answer to various questions in order to study: (1) the development of the child's ability to identify race by skin color, (2) his racial preferences, and (3) his acceptance or rejection of his racial identity.

The results show that at age three, 77% of the black subjects correctly identified the "colored" and "white" dolls, but by a ratio of two to one they did not choose the black doll as looking like themselves. By age seven, 100% of the black children correctly labeled the "race" of the dolls and 87% of them chose the "colored" doll as looking like themselves, but a majority still preferred to play with the white doll and identified it as the "nice" doll. At age five, 78% of the children identified the black doll as "bad", while by age seven, only 43% chose the black doll as the "bad" doll, but 40% refused to express a preference for either doll in response to this question.

Morland's series of studies which concentrated on regional differences in race awareness of nursery school children showed consistently that blacks

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* James A. Green had primary responsibility for the work in this section.

are less likely than whites to make correct racial self-identifications. Morland also found that black children prefer white children as playmates but not vice versa. When black and white children were divided into categories of high, medium, and low racial recognition ability, a majority in each category preferred whites. For both black and white children, the percentage preferring whites was greater for subjects of high recognition ability.

Goodman (1952) attempted to test the hypothesis that separate but equal schools cause personality damages to black children. On the basis of certain observational data, she classified the children into categories of high, medium, and low racial awareness and found differences in behavior and self-perception among the three groups. The most interesting differences indicated that blacks who are highly aware are most insecure about their racial status, while whites in the same category are most secure about their racial status. Also, the differences in the medium awareness category suggest that the blacks are more uneasy about the topic of race than the whites. Goodman suggests that peer influences are more important than parental values in determining racial or color awar[illegible] that parents' behavior, rather than their attitudes, shape the chi[illegible]udes. Goodman also found, as did Clark and Clark and Morland, that black and white children become aware of racial differences as early as age three or four, and that within this racial awareness lies an understanding of the values placed on color by the larger society.

In the light of these previous findings we chose to measure ethnic attitudes. We assume that these attitudes and ethnically relevant self perceptions will be crucial in determining the overall success of desegregation, the way in which the child fares in the mixed ethnic environment. Changes in interethnic attitudes and self perceptions ought also to be a good indicator of how well or poorly desegregation is going.

The Ethnic Pictures Test. The child was shown six faces of elementary school age boys: two white, two black, and two Mexican-American (see Appendix D). The psychometrist said, "These are pictures of six boys who are just about your age. I know that you don't know any of them but I want you to play a game and guess what they are like. Which of these boys do you think is the kindest?" She then turned the selected picture face down and asked the child, "Now which of these boys who are left do you think is the kindest?", and so forth until the child had rank-ordered the six faces. This same procedure was followed for rankings of the faces as to happiness, strength, speed, and scholastic performance. The entire procedure was then repeated with a set of six faces of elementary age girls. Finally the child was shown the faces corresponding to his own sex and asked to indicate which of the six children was most like him, which of the six he would most like to be, and which he would most like to have as a friend.

Each child gave a rank (from 1 = first choice to 6 = sixth choice) to each face for each dimension. The ranks across the four faces, two girl and two boy pictures for each ethnic group, were summed to yield a score which describes the child's evaluation of each ethnic group on each of the five dimensions (kind, happy, strong, fast, best grades). Table 1 presents these data by grade and ethnic group for predesegregation (1966) and one year post (1967). Note in reading the table that the children move diagonally down and to the right from 1966 to 1967. For example the kindergarteners in 1966 have become first graders in 1967 and their post-desegregation data are shown in the "first grade" column.

The white faces were ranked kindest by all the children for both pre- and post-desegregation years. Comparing the mean rankings for 1966, there is a linear trend such that as grade increases, the ranking of the white faces becomes less favorable. Overall, the ranking of the white faces is less favorable after than before desegregation, the post-desegregation unfavorableness increasing with age.

TABLE 1

AVERAGE OF SUMMED RANKINGS OF ETHNIC GROUP PICTURES*

(Summed over four pictures for each Ethnic Group)

KINDEST - Black Faces

	K	1	2	3	4	5	6	7
White								
1966	16.56	16.42	16.32	16.67	14.90	14.81	13.83	---
1967	---	18.10	17.03	16.61	17.14	14.96	15.74	14.70
Mex.-Am.								
1966	16.56	17.76	17.62	18.02	16.93	17.35	16.74	---
1967	---	18.05	18.33	18.53	17.50	17.55	17.24	16.93
Blacks								
1966	15.25	15.24	14.90	14.64	15.44	14.60	16.11	---
1967	---	15.18	15.08	15.35	14.69	14.41	15.59	14.52

KINDEST - White Faces

	K	1	2	3	4	5	6	7
White								
1966	9.95	8.85	9.57	9.72	11.02	11.95	11.77	---
1967	---	8.09	8.81	10.35	9.29	11.05	11.35	11.32
Mex.-Am.								
1966	11.30	10.33	10.04	9.77	9.67	9.13	9.49	---
1967	---	9.83	9.73	10.22	9.52	9.21	9.95	9.51
Blacks								
1966	12.03	12.32	11.95	10.66	11.42	11.14	9.77	---
1967	---	11.98	11.57	11.88	10.72	12.10	10.25	10.95

KINDEST - Mexican-American Faces

	K	1	2	3	4	5	6	7
White								
1966	16.15	16.71	16.14	15.55	15.95	15.23	16.36	---
1967	---	15.80	16.31	15.02	15.56	16.08	14.89	15.98
Mex.-Am.								
1966	14.75	13.95	14.33	14.26	15.39	15.50	15.76	---
1967	---	14.17	13.92	14.00	14.98	15.46	15.18	15.55
Blacks								
1966	14.70	14.41	15.61	16.73	15.12	16.25	16.11	---
1967	---	14.96	15.33	15.22	16.58	15.47	16.15	16.52

*Each cell entry represents the average sum of rankings given to four pictures each ethnic group. The smaller the number, the more positive is the evaluation.

TABLE 1
(cont'd)

HAPPIEST - Black Faces

	K	1	2	3	4	5	6	7
Whites								
1966	15.89	16.28	16.27	16.55	16.15	16.03	16.02	---
1967	---	16.62	17.42	16.50	16.80	15.82	16.27	15.00
Mex.-Am.								
1966	15.41	16.38	17.12	16.97	17.26	17.43	17.05	---
1967	---	15.65	17.20	16.76	16.91	17.31	16.72	16.89
Blacks								
1966	15.58	15.55	16.01	15.75	16.22	16.28	16.22	---
1967	---	15.35	15.96	16.18	15.95	15.33	15.90	15.52

HAPPIEST - White Faces

	K	1	2	3	4	5	6	7
Whites								
1966	11.09	10.34	11.07	11.31	11.55	11.93	11.92	---
1967	---	9.91	9.64	11.77	11.00	11.93	11.57	12.43
Mex.-Am.								
1966	12.09	11.06	10.70	10.94	10.85	10.29	11.09	---
1967	---	11.20	10.65	11.57	10.98	10.55	11.03	11.34
Blacks								
1966	12.19	11.82	11.98	11.49	11.44	11.65	11.29	---
1967	---	11.75	11.77	11.77	12.13	12.93	11.78	11.21

HAPPIEST - Mexican-American Faces

	K	1	2	3	4	5	6	7
Whites								
1966	15.70	15.33	14.72	14.09	14.28	13.96	14.05	---
1967	---	15.45	15.15	13.71	14.20	14.24	14.15	14.56
Mex.-Am.								
1966	15.10	14.59	14.18	14.07	13.87	14.25	13.84	---
1967	---	15.13	14.22	13.98	14.09	14.21	14.32	13.76
Blacks								
1966	14.22	14.61	14.47	14.75	14.33	14.05	14.48	---
1967	---	15.11	14.33	14.03	13.90	13.95	14.31	15.26

TABLE 1
(cont'd)

STRONGEST - Black Faces

	K	1	2	3	4	5	6	7
Whites								
1966	15.33	14.51	13.42	12.87	13.28	12.06	12.31	---
1967	---	14.37	13.67	12.50	11.97	11.85	12.00	11.25
Mex.-Am.								
1966	14.93	14.45	14.22	13.05	12.39	11.37	11.00	---
1967	---	14.89	15.04	14.04	12.29	11.63	11.03	10.42
Blacks								
1966	14.29	14.17	12.84	12.33	11.72	11.77	11.81	---
1967	---	14.71	14.20	13.09	12.11	11.54	-1.21	10.91

STRONGEST - White Faces

	K	1	2	3	4	5	6	7
Whites								
1966	12.70	14.55	16.53	16.73	17.10	18.10	17.92	---
1967	---	14.17	15.48	17.56	18.53	18.40	18.06	18.95
Mex.-Am.								
1966	13.89	14.85	15.37	16.92	17.60	17.78	17.86	---
1967	---	14.28	15.24	16.21	17.72	18.51	18.63	19.06
Blacks								
1966	14.17	15.03	16.63	17.18	17.16	17.28	16.59	---
1967	---	15.05	15.50	16.42	17.18	16.97	17.96	18.08

STRONGEST - Mexican-American Faces

	K	1	2	3	4	5	6	7
Whites								
1966	14.65	12.93	12.11	12.39	11.61	11.82	11.75	---
1967	---	13.45	13.11	11.92	11.49	11.85	11.93	11.90
Mex.-Am.								
1966	13.80	12.90	12.36	12.00	12.00	12.83	13.13	---
1967	---	12.94	11.81	12.66	11.97	11.94	12.33	12.51
Blacks								
1966	13.51	12.79	13.30	12.47	13.11	12.97	13.51	---
1967	---	13.22	12.66	12.48	12.69	13.47	12.81	13.00

TABLE 1
(cont'd)

FASTEST - Black Faces

	K	1	2	3	4	5	6	7
Whites								
1966	14.93	15.18	14.01	14.65	13.55	12.76	12.78	---
1967	---	15.70	14.75	13.77	13.97	12.90	13.52	12.28
Mex.-Am.								
1966	15.40	15.04	14.84	13.54	12.30	11.46	11.25	---
1967	---	15.63	15.36	14.13	13.08	11.64	10.55	9.65
Blacks								
1966	14.48	15.00	13.30	12.73	12.46	11.45	12.74	---
1967	---	13.96	14.46	13.77	12.55	12.14	10.71	12.95

FASTEST - White Faces

	K	1	2	3	4	5	6	7
Whites								
1966	12.85	12.36	13.03	13.22	14.60	15.50	16.03	---
1967	---	12.19	13.07	13.85	15.26	15.56	15.81	17.05
Mex.-Am.								
1966	13.06	13.[illegible]	13.52	14.27	15.04	15.09	15.37	---
1967	---	12.94	13.40	14.60	14.50	16.10	16.34	18.21
Blacks								
1966	13.51	13.86	14.49	15.22	14.75	16.88	15.44	---
1967	---	14.18	13.83	14.74	15.41	15.47	16.87	16.47

FASTEST - Mexican-American Faces

	K	1	2	3	4	5	6	7
Whites								
1966	14.90	14.42	15.02	14.11	13.81	13.73	13.17	---
1967	---	14.20	14.61	14.37	12.76	13.52	12.79	12.66
Mex.-Am.								
1966	14.15	13.57	13.61	14.16	14.63	15.44	15.37	---
1967	---	13.42	13.28	13.65	14.41	14.67	15.10	14.12
Blacks								
1966	14.00	13.11	14.77	14.01	14.77	14.60	13.81	---
1967	---	13.98	13.97	14.29	14.02	14.37	14.40	14.00

TABLE 1
(cont'd)

BEST GRADES - Black Faces

	K	1	2	3	4	5	6	7
Whites								
1966	15.72	15.22	15.51	16.47	15.73	15.89	15.63	---
1967	---	15.96	16.24	15.58	16.77	15.78	16.47	16.10
Mex.-Am.								
1966	15.61	15.85	16.68	16.27	15.52	16.17	15.80	---
1967	---	16.32	16.68	16.91	16.44	16.83	16.83	17.08
Blacks								
1966	15.00	14.61	14.80	14.69	15.61	15.00	15.44	---
1967	---	14.81	14.15	14.74	15.39	15.18	15.40	15.56

BEST GRADES - White Faces

	K	1	2	3	4	5	6	7
Whites								
1966	11.50	10.77	10.90	10.46	10.62	10.42	10.11	---
1967	---	10.39	10.30	11.31	9.66	9.90	9.30	8.93
Mex.-Am.								
1966	12.70	12.78	11.74	11.54	11.30	9.90	9.70	---
1967	---	11.78	11.43	11.92	10.70	10.00	9.83	8.53
Blacks								
1966	12.20	13.05	13.15	12.07	11.66	11.22	10.66	---
1967	---	13.03	13.13	12.75	11.44	11.85	10.43	11.04

BEST GRADES - Mexican-American Faces

	K	1	2	3	4	5	6	7
Whites								
1966	15.45	15.99	15.63	15.05	15.63	15.68	16.25	---
1967	---	15.63	16.02	15.41	15.56	16.31	16.22	16.95
Mex.-Am.								
1966	14.29	13.42	13.56	14.18	15.08	15.89	16.47	---
1967	---	13.89	13.95	13.67	14.85	15.13	15.32	16.38
Blacks								
1966	14.79	14.29	14.42	15.22	14.70	15.77	15.70	---
1967	---	14.28	14.76	14.50	15.16	15.33	16.15	15.39

A different pattern emerges for the kindest ranking of the black faces. Both the linear and quadratic trends are significant in 1966, but only the linear trend is significant in 1967. The linear trends for both years account for almost 90% of the variance. Generally, the rankings of the black faces increase in favorability as grade increases. In 1967 black faces are perceived as kinder with increasing grade, a trend which is also present in 1966 but which is not quite as strong.

For the Mexican-American faces the trend for grade is linear for both years with the rankings becoming more unfavorable as grade increases, except for 2nd and 5th graders, who show an increase. The Mexican-American faces are ranked less kind as grade increases. The data appear to indicate that black and Mexican-American children think that being white is good but that there is some disenchantment as a function both of age and desegregation.

The rankings for "happiest" yield a similar pattern, although the grade and ethnic differences are not as striking. "Kind" is an interpersonal trait whereas "happy" is not. Specifically, the white faces are ranked "happiest" by all the children for both years. For 1966 the trend is linear, [illegible]he kindergarten children showing more favorable rankings and the 6th grade children showing the least favorable rankings. Rankings of the black faces for "happiest" show a statistically significant linear trend for 1966, but not for 1967. The trend is such that the older children rank the black faces as less happy than the younger children. The ranking of the Mexican-American faces for "happiest" shows a significant linear trend for both 1966 and 1967.

Analyzing the results by taking the percentage of children whose first choice was either a white, black, or Mexican-American face, we find the percent who pick white faces as "happiest" decreases sharply from 1966 to 1967 for all three ethnic groups as compared with the decrease in the choice of white faces

as "kindest." Whites are perceived as less happy (an intrapersonal trait) after a year of desegregation, but there is no change in their being perceived as kinder after a year.

The rankings of the children's faces as "strongest" show some of the clearest trends. Black faces are perceived as " strongest" and this perception increases linearly with age. The white faces are perceived as least strong and this tendency increases with grade. In all cases, for all pictures, the linear trend for grade is significant. Obviously, being strong has its advantages in school. It implies that a child could use this strength to manipulate or wield power over peers. Other data indicate that minority children are likely to use physical means to assert themselves.

The "fastest" rankings reveal almost the same pattern as for "strongest"; that is, black pictures tend to be ranked as "fastest," and these rankings tend to become more extreme and disparate as grade increases. The linear trend for the black faces for 1966 and 1967 accounts for almost 90% of the variance. Linearity holds for the white faces but instead is a decreasing trend.

The divergence of the rankings of the faces for "best grades" is very striking. The white faces are ranked as receiving best grades by all sample children over grade and year with an increased linear trend across grade which accounts for almost all of the variance. The Mexican-American faces are less chosen as grade increases for both 1966 and 1967, most of the variance being accounted for by the linear trend. There is no linear trend by grade for the black faces. The contrast between the strong trend by grade for white faces in the favorable direction and for Mexican-American faces in the unfavorable direction is particularly striking. The rankings of "best grades" is probably indicative of what is happening in the desegregated classroom--minority children are faring poorly by comparison with whites, and the sense of this is keener in

the higher grades. Predesegregation the white faces are overchosen for "best grades" by all three groups. Interestingly, the minority children, most of whom have had no prior classroom contact with white children, still appear to overchoose white faces with increasing age. A year of contact serves to sharpen the tendency markedly.

To sum up, the white faces are ranked most favorably on the dimensions of "kindest," "happiest," and "best grades" with little or no change for "kindest" and "happiest" after desegregation. On "best grades" the ranking of the white faces becomes more favorable. The minority faces are rated most favorably on "strongest" and "fastest." Most striking are the clear age trends, unaffected by desegregation.

Overall, the data for the adjective rankings indicate that certain stereotypes, which undoubtedly reflect aspects of reality, become more extreme with increasing age, the increase being more marked for the minority children. The children are responding to the content and not to the form of the questions. They do not seem to be responding in terms of demand from the tester or any variables irrelevant to the questions being asked. On the contrary, they seem to be making clear discriminations among the five characteristics. Table 2 presents a summary of the results.

"Most like you," "most like to be," and "most like for a friend." The predesegregation data for "most like me" are comparable to those reported by Clark and Clark (1947). Approximately 82% of the white children chose white faces as being "most like me"; approximately 48% of the Mexican-American children chose Mexican-American faces; and approximately 56% of the black children chose black faces. This same trend is repeated in 1967. Notable, however, is the increase for Mexican-Americans from 48% to 56% in "correct" choices. Within both the 1966 and 1967 data for the minority children we find fewer cross-group choices with

TABLE 2

Average of Summed Rankings of Ethnic Group Pictures

(by year, ethnic group of child, ethnic group of picture, and dimension)

KINDEST

	White pictures		Mexican-American pictures		Black pictures	
	1966	1967	1966	1967	1966	1967
White subjects	9.87	9.87	16.06	15.76	15.74	16.39
Mex.-Am. subjects	9.74	9.74	14.69	14.03	17.29	17.83
Black subjects	11.48	11.48	15.31	15.59	15.12	15.01

HAPPIEST

	White pictures		Mex.-Am. pictures		Black pictures	
	1966	1967	1966	1967	1966	1967
White subjects	11.16	11.01	14.66	14.62	16.15	16.44
Mex.-Am. subjects	10.98	11.03	14.30	14.37	16.70	16.75
Black subjects	11.75	11.94	14.41	15.20	15.83	15.78

STRONGEST

	White pictures		Mex.-Am. pictures		Black pictures	
	1966	1967	1966	1967	1966	1967
White subjects	15.92	17.08	12.52	12.34	13.55	12.66
Mex.-Am. subjects	16.04	16.79	12.68	12.30	13.25	13.09
Black subjects	15.99	16.39	12.99	12.87	12.99	12.97

FASTEST

	White pictures		Mex.-Am. pictures		Black pictures	
	1966	1967	1966	1967	1966	1967
White subjects	13.67	14.49	14.18	13.68	14.13	13.95
Mex.-Am. subjects	14.07	14.82	14.27	14.03	13.63	13.26
Black subjects	14.53	14.92	13.96	14.13	13.49	13.26

BEST GRADES

	White pictures		Mex.-Am. pictures		Black pictures	
	1966	1967	1966	1967	1966	1967
White subjects	10.67	10.01	15.65	16.01	15.65	16.13
Mex.-Am. subjects	11.55	10.81	14.47	14.57	15.96	16.69
Black subjects	12.28	12.27	14.75	14.95	14.92	14.86

TABLE 3

Proportion of subjects choosing faces for "Most Like Me," Most Like to Be," "Most Like for a Friend"

	Most Like Me		Most Like to Be		Most Like for a Friend	
	1966	1967	1966	1967	1966	1967
White Males						
White faces	.82	.82	.79	.73	.55	.61
Mex.-Amer. faces	.11	.11	.15	.17	.23	.19
Black faces	.07	.08	.05	.10	.21	.20
White Females						
White faces	.82	.75	.68	.66	.44	.56
Mex.-Amer. faces	.10	.14	.19	.25	.30	.28
Black faces	.09	.10	.14	.10	.26	.16
Mex.-Amer. Males						
White faces	.44	.37	.55	.54	.46	.48
Mex.-Amer. faces	.51	.57	.43	.42	.34	.37
Black faces	.05	.05	.02	.04	.20	.15
Mex.-Amer. Females						
White faces	.49	.39	.64	.58	.57	.50
Mex.-Amer. faces	.46	.56	.31	.36	.29	.37
Black faces	.04	.04	.05	.07	.14	.13
Black Males						
White faces	.29	.24	.51	.39	.48	.42
Mex.-Amer. faces	.13	.17	.23	.32	.23	.22
Black faces	.59	.58	.26	.29	.23	.35
Black Females						
White faces	.24	.22	.42	.37	.41	.32
Mex.-Amer. faces	.23	.23	.19	.24	.28	.30
Black faces	.53	.55	.39	.40	.31	.38

TABLE 4

PROPORTION OF CHILDREN BY ETHNIC GROUP AND GRADE CHOOSING A PICTURE OF SOMEONE IN THEIR OWN ETHNIC GROUP AS "MOST LIKE ME"

Grade	White	Black	Mexican-American
K	72 (.85)	25 (.58)	29 (.36)
1	116 (.88)	45 (.63)	43 (.42)
2	68 (.93)	36 (.77)	41 (.46)
3	74 (.84)	29 (.67)	44 (.54)
4	75 (.81)	31 (.72)	44 (.58)
5	48 (.76)	21 (.70)	65 (.70)
6	45 (.58)	17 (.77)	31 (.66)
	498	205	297

increasing age; that is, the older the child, the more likely will he choose a picture of his own ethnic group as being "most like me." The reverse, however, seems to be true for white children. For the minority child, the older he gets the more aware does he become of his uniqueness against the backdrop of the uniquitous majority white culture. He sees others in supermarkets, on T.V., and elsewhere who are different in certain specific characteristics. It is probably the case, although experimental evidence is lacking, that the person tends to classify himself on traits concerning which he is deviant. Short or tall people will tend to be aware of height and redheads will tend to be aware of hair color. That this effect is opposite for the white children may indicate that ethnicity becomes less of a basis for classification for the white child as he grows older since, for him, there is no growing awareness of any sort of uniqueness; most of those in the larger world around him share his racial identity. He may be more likely, therefore, to use cues other than racial features (e.g., shape of head, size of ears, smile or frown, clothing, etc.). This suggested interpretation of the opposite trends for white and minority children is a basic theory about self attribution that has implications beyond the kind of judgment that concerns us here.

There are other plausible interpretations for the interaction between age and ethnicity on self-identification, but the one suggested here seems like the most parsimonious. It's easy to find other explanations for the age trend for the minority children, but it's hard to interpret those trends as well as the trend for the white children by invoking a single principle.

In the questions concerned with self-attribution there is a clear-cut status hierarchy for "most like me" and "most like to be." White children overchoose white faces, the boys more so than the girls, and there are relatively few out-group choices. A large proportion of Mexican-American children choose out for

both questions. Their outgroup choices, however, are almost exclusively limited to the white faces. Blacks, when choosing out, select both white as well as Mexican-American faces, with a preference for white faces. This pattern is clear evidence of a status hierarchy, with whites on top and blacks on the bottom. Black males' choice of white faces as "most like me" and "most like to be" decreases sharply after desegregation, indicating that something dramatic may be happening in their contact with the previously all white classroom. Blacks as well as Mexican-Americans tend to choose white faces less often on all three questions ("most like me", most like to be", "most like for a friend) one year after desegregation. In general, both minority groups tend to choose more faces of their own ethnic group after desegregation.

Predesegregation the minority child may have an idealized image of white children, assimilated, perhaps, from the media. The cold, hard facts of actual classroom contact appear to change that image considerably. Our results suggest that the three groups tend to separate themselves within the mixed classroom. This pattern is abundantly evident in the sociometric data where we find actual choices of friends to occur along ethnic lines. We are currently examining various classroom variables, including the sociometric structure, as they affect interethnic and ethnic relevant self-attitudes.

Family Background*

To date, only portions of the 1966 and 1967 questionnaire data on parents have been available for analysis. In examining the available data, the major emphasis up to the present has been to acquire an understanding of the family background and its influence on the children in the study. We have explored several characteristics of the families of the children of the study. These include: socio-economic status; parental values; personality characteristics of the parents; and initial attitudes toward the bussing program.

Socio-economic status

The children in the project come from a total of 1,196 families: 674 white; 309 Mexican-American; 213 black families. These families represent a broad cross-section of living styles. In addition to cultural differences resulting from the various ethnic group affiliations, the parents of the children in the study cover the entire range of socio-economic positions.

We have primarily used Duncan's socio-economic index for occupations (1950) to assess the socio-economic status of the families in the study. The socio-economic status (SES) of each family was determined by the Duncan index value for the occupation of the head of each household. The index has a range from 0 - 96 with higher index numbers indicating higher socio-economic positions. It is clear that the SES profile for the white families differs considerably from those of the two minority groups. The white families are essentially distributed normally over the socio-economic range, whereas contrariwise, over 50% of the minority families fall below the second decile. In general, the black families hold slightly higher SES positions than the Mexican-American families, but this difference is relatively insignificant in comparison to the SES advantage of the white families over both minority groups. Whereas 93% of the Mexican-American families fall below the 5th decile on the scale and 76% of black families fall

* Vivian Nagy has organized and analyzed much of the material on family background.

Table 1: Proportion of Parents Within Each Racial Group Selecting a Value as One of the Five Most Important

Values	For Boys			For Girls		
	White	Mexican American	Black	White	Mexican American	Black
Good at sports	.14	.40	.38	.02	.14	.08
Dependable	.50	.35	.38	.50	.33	.32
Curious about things	.26	.12	.23	.24	.12	.17
Happy	.47	.30	.32	.54	.34	.38
Neat and clean	.22	.42	.46	.31	.64	.56
Obedient	.31	.50	.47	.30	.56	.46
Honest	.56	.49	.51	.57	.57	.49
Good student	.38	.54	.42	.38	.53	.49
Good manners	.24	.42	.32	.23	.42	.40
Popular with other children	.08	.18	.14	.10	.17	.19
Considerate of others	.59	.34	.38	.63	.36	.50
Has self-control	.30	.30	.35	.27	.21	.34
Nice looking	.01	.08	.03	.02	.08	.05
Independent	.21	.18	.18	.15	.14	.17

Sample size

White	674
Mexican-Amer.	306
Black	216
Total	1196

fall below this point, only 27% of the white families have correspondingly low occupations on the Duncan Index.

These figures clearly indicate major differences in the family backgrounds of the children in the study. These living standard differences, in conjunction with the cultural or ethnic differences among parents in the sample, can be expected to be related to varying attitudinal and value orientations that should combine to produce differing emphases in child-rearing practices and ultimately in the behavior of the children.

Parental values: The first parental interview

In the first year of the study, parents were questionned about the behavioral characteristics they would most prefer their children to possess. In most cases, mothers provided this information. They were asked to select those five traits among a list of 14 that they value most in an elementary school girl, then again those most valued in a boy. The list included the following traits: good at sports; dependable; curious about things; happy; neat and clean; honest; good student; good manners; popular with other children; considerate of others; has self-control; nice looking; independent. The responses were analyzed in terms of the proportion of parents who chose each alternative as one of the five most important characteristics desirable in elementary school boys and girls. The discussion below focuses on those characteristics chosen as most desirable by 40% or more of the parents (an arbitrarily chosen percentage).

The three racial groups differ considerably in their expression of desired values in boys. The primary difference lies between the white and minority parents. For white parents, considerate, dependable, and happy, are three important values for boys. However, among the minority parents these are not among the characteristics chosen by 40% or more as desirable for boys. Instead, the minority parents stress obedience and neat and clean, values that are relatively

unimportant for white mothers.

As was the case for boys, black and Mexican-American parents expressed nearly identical preferences for girls; neat and clean, honesty, good student, obedient, and good manners were most frequently favored. The concerns of the white parents, however, again reflect a considerable difference in values. In addition to honesty (highly valued by parents of all three ethnic groups), considerate, happy, and dependable were the most desirable values for girls. Their emphasis on the importance of happy and dependable contrasts with their relative lack of emphasis on neat and clean, obedient, good student, and good manners--traits favored for girls by the minority parents. Another major difference between the minority parents and the whites is an emphasis on considerate of others by whites. All told, white and black parents failed to differ significantly on only five characteristics: curiosity, honesty, self-control, nice looking, and independent.

Parental values are basically the same for both boys and girls. Only several characteristics were selectively chosen by the parents as more desirable for children of one sex than the other. White parents stress independence and ability at sports more frequently for boys than for girls, and happiness and neatness and cleanliness as more desirable for girls than boys. Black parents express a concern for ability at sports and consideration for boys. Ability at sports and, to a smaller degree, neatness and cleanliness are the only two characteristics that all three groups agree are distinctly more desirable for boys or for girls.

Table 2: Values Judged Differentially Important for Boys and Girls by Parents of Each Racial Group

	White	Mexican-American	Black
Good at sports	.01	.01	.01
Dependable	ns	ns	ns
Curious about things	ns	ns	ns
Happy	.01	ns	ns
Neat and clean	.01	.01	.05
Obedient	ns	ns	ns
Honest	ns	.05	ns
Good student	ns	ns	ns
Good manners	ns	ns	ns
Popular with other children	ns	ns	ns
Considerate of others	ns	ns	.01
Has self-control	ns	.05	ns
Nice looking	ns	ns	ns
Independent	.01	ns	ns

Value Differences among Socioeconomic Classes.

The analyses discussed above examine the relative desirability of the 14 value dimensions as judged by each ethnic group. Additional analyses were conducted to assess value differences attributable to socioeconomic status (It should be noted that there is considerable overlap between racial group and social class. Seventy-three percent of the Mexican-American parents and 60% of the black parents are classified in the low socioeconomic class, as opposed to only 13% of the white parents).

Examination of the proportion of parents at each level of socioeconomic class who chose each characteristic as one of the five most important characteristics desirable in elementary school boys reflects the correlation of race with socio-economic class. As expected, considering the distribution of racial groups into socioeconomic class levels, the value preferences of the low socioeconomic class predominately reflects the values of the black and Mexican-American parents and those of the upper socioeconomic class reflect the dominant values of the white parents. "Honest" and "good student" are desirable characteristics for approximately equivalent proportions of parents in all three socioeconomic classes. Among the most desired characteristics for children, happy, dependable, and considerate become

Table 3: Proportion of Parents Within Each Socioeconomic Level Selecting a Value as one of the Five Most Important

Values	For Boys			For Girls		
	Low SES	Middle SES	Upper SES	Low SES	Middle SES	Upper SES
Good at sports	.41	.24	.15	.12	.06	.02
Dependable	.40	.55	.60	.37	.55	.58
Curious about things	.18	.23	.35	.15	.21	.34
Happy	.40	.43	.60	.47	.52	.65
Neat and clean	.49	.40	.20	.68	.50	.30
Obedient	.51	.46	.34	.53	.48	.33
Honest	.54	.69	.62	.59	.71	.64
Good student	.53	.46	.47	.57	.46	.48
Good manners	.43	.34	.23	.44	.35	.23
Popular with other children	.19	.10	.11	.21	.12	.12
Considerate of others	.43	.61	.67	.48	.65	.76
Has self-control	.36	.34	.35	.27	.32	.31
Nice looking	.06	.03	.01	.08	.02	.02
Independent	.17	.22	.30	.16	.15	.20

Sample Size	
Low	358
Middle	296
Upper	324
	978

Table 3: Values chosen by 40% or more Parents as Desirable

Racial Differences

	Whites		Mexican-Americans		Blacks	
For Boys	Considerate	(.59)	Good student	(.54)	Honest	(.51)
	Honest	(.56)	Obedient	(.50)	Obedient	(.47)
	Dependable	(.50)	Honest	(.49)	Neat and clean	(.46)
	Happy	(.47)	Good manners	.42	Good student	(.42)
			Neat and clean			
			Sports	(.40)		
For Girls	Considerate	(.63)	Neat and clean	(.46)	Neat and clean	(.56)
	Honest	(.57)	Honest	(.57)	Considerate	(.50)
	Happy	(.54)	Obedient	(.56)	Honest	.49
	Dependable	(.50)	Good student	(.53)	Good student	
			Good manners	(.42)	Obedient	(.46)
					Good manners	(.40)

Socioeconomic Differences

	Low		Middle		Upper	
For Boys	Honest	(.54)	Honest	(.69)	Considerate	(.67)
	Good student	(.53)	Considerate	(.61)	Honest	(.62)
	Obedient	(.51)	Dependable	(.55)	Dependable	.60
	Neat and clean	(.49)	Good student	.46	Happy	
	Good manners	.43	Obedient		Good student	(.47)
	Considerate		Happy	(.43)		
	Sports	(.41)	Neat and clean	(.40)		
	Dependable	.40				
	Happy					
For Girls	Neat and clean	(.68)	Honest	(.71)	Considerate	(.76)
	Honest	(.59)	Considerate	(.65)	Happy	(.65)
	Good student	(.57)	Dependable	(.55)	Honest	(.64)
	Obedient	(.53)	Happy	(.52)	Dependable	(.58)
	Considerate	(.48)	Neat and clean	(.50)	Good student	(.48)
	Happy	(.47)	Obedient	(.48)		
	Good manners	(.44)	Good student	(.46)		

more highly valued from lower to upper class parents, and obedient, neat and clean, good manners, and ability at sports decrease in value from lower to upper class respondents.

Within socioeconomic class levels, there are few prominent differences in the values expressed for boys and girls. Lower class parents stress "neat and clean" for girls more than boys, upper class parents stress "considerate" for girls more than boys, and sports ability is deemphasized among all three social classes for girls. As with the parent values for boys, upper class values for girls reflect white parent desires and lower class values reflect minority parent concerns. Whereas obedience, good manners, and neat and clean become less important for girls the higher the social class, consideration, happiness, and dependability on the other hand become more highly valued. Honesty and competency in school are highly desired characteristics for girls (as well as boys) for parents at all socioeconomic levels.

Comparison of racial and socioeconomic differences in value structure.

There is some indication that differences in values between the minority parents and the white parents may be due to socioeconomic status rather than race. A subsample of white parents, divided into the three previously established social class levels, was examined for preferences among the 14 value dimensions. The differences do not follow the pattern that obtains for the entire parent sample. Among the entire parent sample, characteristics such as neat and clean, obedience, and good manners decrease in importance with an increase in social class status. Among the white parents in the three socioeconomic classes, however, the significant differences in proportions of parents selecting traits for children occur between the middle and upper social classes. The lower and middle class show concordance in their value expressions. For both boys and girls, there are no significant differences between the lower and middle class whites. However, whereas the lower and upper class parents differ significantly on only two alternatives (curious about things and neat and clean), the middle and upper class parents differ

Table 4: Social Class Differences in Values among Whites

	Girls			Boys		
	1*	2	3	1	2	3
Good at sports	.05	.02	.02	.23	.17	.13
Dependable	.58	.59	.60	.51	.57	.63
Curious about things	.15	.25	.35	.18	.26	.37
Happy	.66	.59	.68	.59	.46	.62
Neat and clean	.53	.44	.26	.40	.36	.17
Obedient	.38	.41	.31	.38	.41	.32
Honest	.68	.73	.63	.68	.70	.61
Good student	.45	.45	.46	.45	.46	.45
Good manners	.30	.32	.22	.33	.31	.24
Popular with other children	.15	.11	.12	.08	.08	.11
Considerate of others	.73	.71	.77	.73	.71	.69
Has self-control	.30	.33	.32	.37	.37	.34
Nice looking	.05	.02	.02	.03	.02	.01
Independent	.15	.14	.21	.21	.20	.30

*1= low social class
2=middle social class
3=high social class

significantly from the middle class on a single value dimension. The interpretation of this outcome remains somewhat of a puzzle. It will certainly be important to examine the effects of social class within the other racial groups.

Family size.

It is possible that the differing emphasis in values among socioeconomic levels (or, alternatively, between white and minority group parents) stems from the physical demands of the family upon mothers. It is commonly assumed that minority groups or low social class families tend to have more children than upper class or white families. If so, the emphasis by lower class parents on good manners, obedience, and neatness and cleanliness as desirable characteristics for children may reflect practical considerations. A mother with four or five children might not have sufficient time to attend to the caretaking of each child personally. By emphasizing neatness and cleanliness, she can conceivably lessen the problem. Likewise, by stressing good manners and obedience, a mother might hope to facilitate order and efficiency within the family. If, on the other hand, upper class families generally consist of only one or two children, these parents need not concern themselves about obedience, cleanliness, or good manners, since the absence of these qualities will not produce the chaos faced by parents with more children. With a decreased need for characteristics implementing order, the priority of values can change toward an emphasis on the psychological adjustment of each child and the interpersonal values of consideration and dependability.

Analysis of the distribution of racial group by number of children in the family (one or two vs. three or more children), shows that the common conception that minority families are larger than white families is not true for the Riverside sample. Sixty-two percent of the white families, 56% of the Mexican-American families, and 67% of the black families have one or two children. Furthermore, a significant difference in proportion of parents endorsing each value was found

in only one comparison of large and small families--39% of parents with three or more children chose "good manners" as one of the most desirable traits as opposed to 30% of parents with one or two children. Thus, family size cannot account for racial or social class differences and value structure.

Parental values: The second parental interview

In 1967, the second year of the study, the parents were again asked about the characteristics they most desired for children. However, the questions covered a different set of characteristics and, instead of asking the parent to rank the five most desirable characteristics out of 14 alternatives as was done in the previous year, the parents were asked to choose one of two alternatives in a series of 15 paired-comparison questions. These 15 questions paired each of six alternatives with the other five characteristics ($\frac{6!}{4!\,2!}$ = 15).

The six alternatives were: be good-natured; behave himself in school; be independent; get good grades in school; finish things he (she) starts; get along with other children. The format of each question was: "Would you rather have your child: A--be good-natured, or B--behave himself in school?"

The mean number of times parents chose each of the six items when presented in the paired-comparison format is presented in Table 5.

Talbe 5: Mean Number Responses to Paired-Comparison Items by Facial Group (rank of importance in parentheses) 1967

	W	B	M-A
Get along with other children	3.04 (1)	2.54 (3)	2.96 (2)
Finish Things	3.02 (2)	2.79 (2)	2.46 (4)
Good grades	2.57 (3)	3.02 (1)	3.07 (1)
Behave self in school	2.23 (6)	2.28 (5)	2.71 (3)
Be good natured	2.41 (5)	2.05 (6)	2.09 (5)
Be independent	2.42 (4)	2.46 (4)	1.64 (6)

Range of responses--0 to 5

Comparison of the dataon parent values in 1967 with the "choose and rank" questions on parent data in 1966 is difficult at best. The questions are presented in entirely different formats (rankings vs. paired-comparisons) and there is little overlap among the value dimensions presented in the two years. Very generally, parents seem to show the same interest in their children receiving good grades (being a good student) and relatively little interest in their children being "independent" on this form of measure as well as that used in the pre-measure.

One problem with the paired-comparison format for determining rank of choices is consistency. If the choices of alternatives are selected in a consistent, meaningful manner, this method of obtaining rank measures is valid. On the other hand, inconsistency of choice does not reflect a menaingful hierarchy of choices and is invalid for the determination of rank order. Consistency of the paired-comparison data was defined in terms of "intransitivities." Examination of the total number of intransitivities among each racial group shows that no parent respondent made more than eight inconsistent responses, and one-fifth of the parents expressed no inconsistencies. Twice as many white parents made three or fewer inconsistencies as those who made four or more (an arbitrary division was made here on the split between the two categories of frequency-of-inconsistencies). Black and Mexican-American parents, however, made four or more inconsistencies as often as three or less. A test for the significance of the differences of proportions of each racial group displaying three or less intransitivities vs. four or more shows whites to be more consistent than either set of minority group parents ($p < .01$). The differences in proportions between the minority group parents was insignificant. There are several possible reasons for the more consistent responses of the white parents. They may have had prior experience with paired-comparison questions, and thus this format of inquiry was not as confusing as it may have been to those parents who have never encountered

questions of this nature previously. It is also possible that they possess more stable value hierarchies than minority group parents. Instability of values would create vacillation in alternative choices and thus produce inconsistent responses.

Personality characteristics of parents

Parents were also measured on Authoritarianism (F-scale), Internal-External Control (Rotter), and Anomie (Scrole). These scales consist of items selected from instruments previously devised by others. Eight items were selected from each of the first two scales; the Anomie scale contained five items. Comparison of racial groups shows whites as least authoritarian, most internally controlled, and lowest in anomie. On all three scales, Mexican-Americans differ most from whites; blacks are intermediate, though typically closer to the Mexican-Americans.

Since none of the three scales is balanced for agreement response set, response bias is a rival interpretation of this simple or consistent outcome. The response bias interpretation is supported by social class analyses which show the same directions of effect regardless of whether social class is separately defined within each racial group or within the total pooled sample. Although there is not substantial data on the issue, agreement response set is probably negatively correlated with social class. If so, as seen in the figures, it provides a consistent explanation for all the obtained differences (see Figs. 1-6). This interpretation receives further support from the high intercorrelations between the three scales: F and IE, r = .51; F and Anomie, r = .42; IE and Anomie, r = .50. The correlations within black and white groups separately analyzed are very similar to one another and of the same magnitude as those above (the mean r for the Mexican-Americans is slightly lower: r = .43.

The one exception to an explanation of these data that ignores content of the items and focuses instead on response bias comes from the Anomie scale, Inspection of Figure 6 reveals an interaction between racial group and socio-economic class. The reversal of the blacks and Mexican-Americans (and its deviance

F-SCALE

Figure 1

Social Class Trichotomized across all Ss

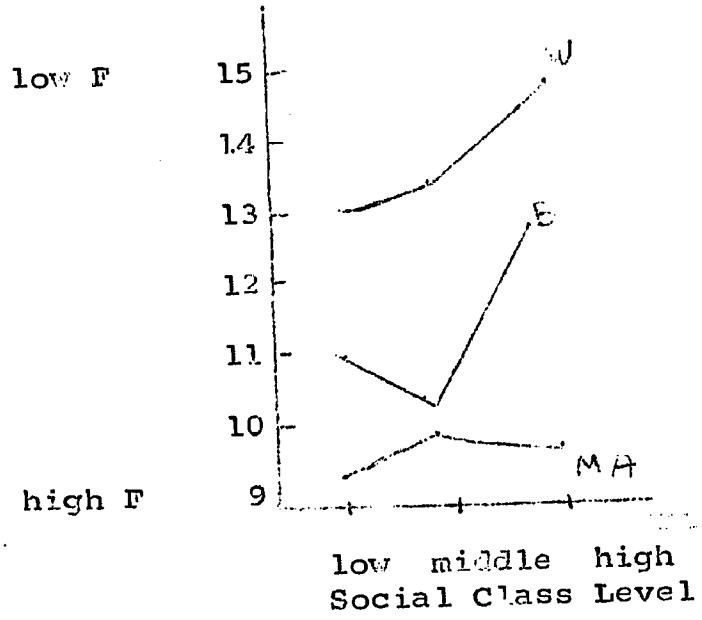
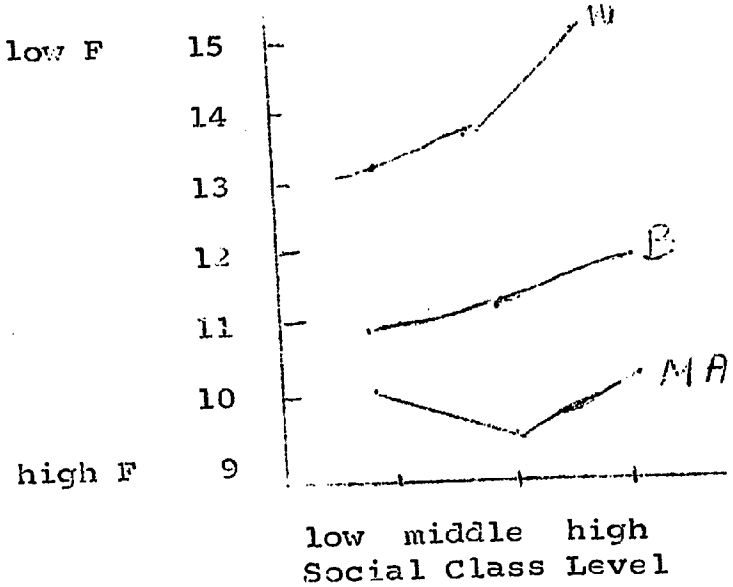


Figure 2

Social Class Trichotomized within each Racial Group



p values for F ratios:

--racial group: .01

--socio-economic level: .05

--group x socio-economic level: ns

---racial group: .01

--socio-economic level: .01

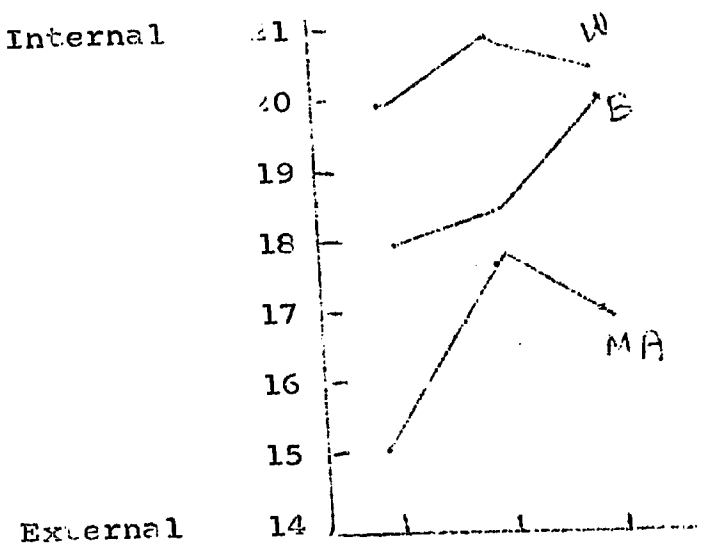
--group x socio-economic level: ns

INTERNAL-EXTERNAL CONTROL

OF REINFORCEMENT

Figure 3

Social Class Trichotomized across all Ss



p values for F ratios:

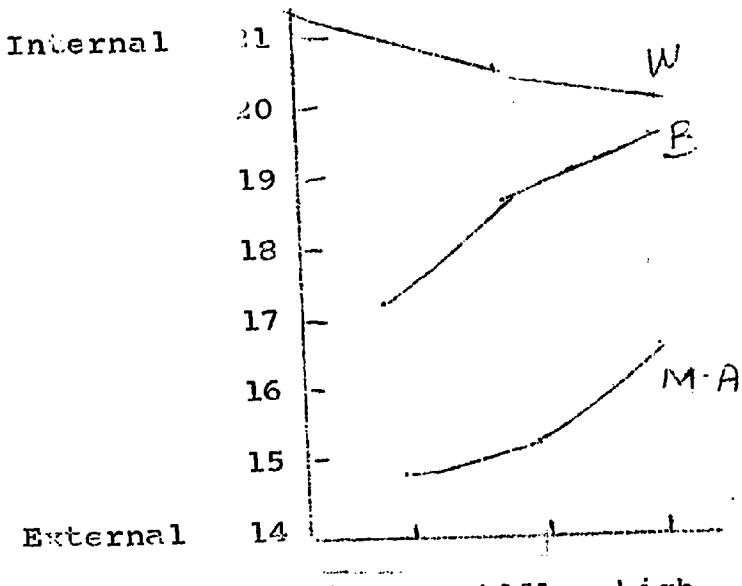
--racial group: .01

--socio-economic level: .01

--group x socio-economic level: ns

Figure 4

Social Class Trichotomized within each Racial Group



--racial group: .01

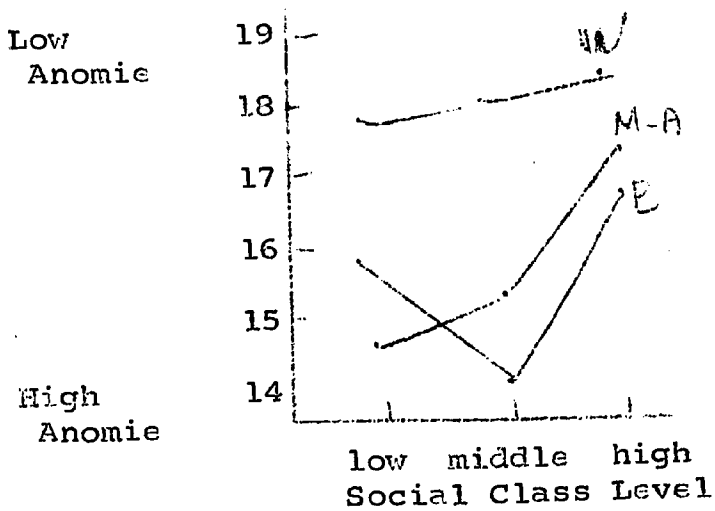
--socio-economic level: .01

--group x socio-economic level: .01

ANOMIE

Figure 5

Social Class Trichotomized across all Ss



p values for F ratios:

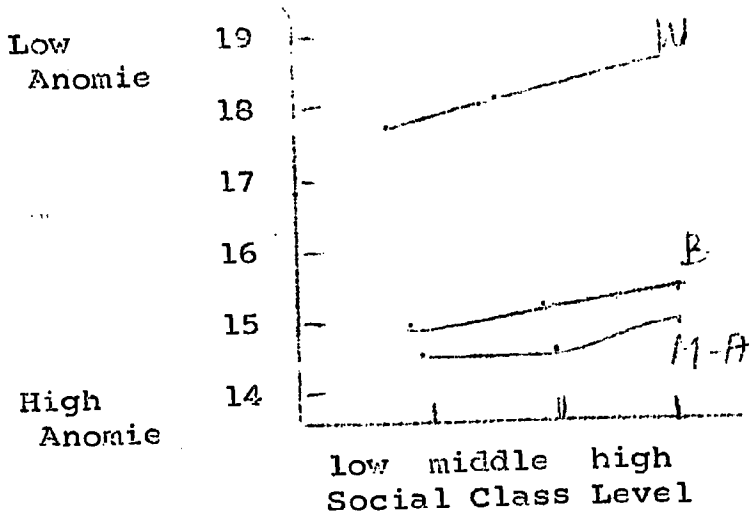
--racial group: .01

--socio-economic level: .01

--group x socio-economic level: .05

Figure 6

Social Class Trichotomized within each Racial Group



--racial group: .01

--socio-economic level: .01

--group x socio-economic level: ns

from the typical pattern) suggests that a "content domain" (other than agreement response bias) may be tapped by these items. The higher anomie or alienation of middle and high socioeconomic blacks in comparison to Mexican-Americans seems congruent with the current dissatisfactions of black people. Figure 5 is even more striking when it is kept in mind that the blacks classified as middle and upper social class are higher than the Mexican-Americans within these categories. In other words, the reversal of blacks and Mexican-Americans (shown by contrasting the position of the three racial groups in this figure to their positions in all of the others) has overcome a mean socioeconomic difference between the two groups that (within racial groups) predicts the opposite direction of effect.

Attitudes toward the desegregation project

In 1966 the parents were questioned about the favorability of their opinions about the desegregation program. In the following year their perceptions of the effect of the program on the children's education and their social activities were assessed. In general, all three ethnic groups were favorable to the program before its initiation and also favorable in their evaluation of the effects of desegregation in the subsequent year. However, the white parents were consistently least optimistic of the program, whereas black parents expressed the most enthusiasm.

Other relevant data from parent interviews

Until now, analyses of the parent questionnaire data primarily provided descriptive and demographic information about the parents of the children in the study, their attitudes toward the school program, and their childrearing values. The full potential of this information, however, has yet to be tapped. In the next few months, all responses to the 1966 and 1967 questionnaires will be available, as well as the 1969 responses. This will allow access to information such as the extent of participation in social and community activities by the

parents, their views on the role of the family in the development of the child, and their responses to questions concerning their achievement orientations. In addition, the 1969 interview data will enable us to determine what changes, if any, there are in the responses to repeated interview items. Lastly, the 1969 parent interview schedule includes some items not included in the previous parent interviews. Of particular interest are the 1969 opinions of the parents toward the desegregation project. After three years of desegregation, do the parents perceive the program as beneficial or diliterious to their children's academic and social activities?

The emphasis of work in the next year or two will shift from a demographic orientation to an attempt to relate information about the parents to the measures of achievement and adjustment taken on their children. A variety of questions can hopefully be answered:

1. Is there a relationship between the parents' expression of desired academic achievement for their children and their children's achievement in school? Are their expectations realistic in comparison to the intellectual abilities of their children? If not, what are the characteristics of parents who overemphasize accomplishments in school? Is this related to the expression of general or school anxiety by the children?

2. To what extent do some of the parent values (such as the characteristics they mention as most important for children or their opinions on what schools should teach) correspond to the teachers' values? Is this correspondence related to expressions of satisfaction or dissatisfaction with the desegregation program? Is this correspondence related to the children's accomplishments in schools? How do the parents' conceptualizations of their children correspond to the teachers' impressions and the children's own statements about what they are like?

The Effects of Teacher Attitudes on Achievement

Kenneth Clark (1965) has argued that racial assumptions and expectations have an important impact on the institution of the school. It has been Clark's contention, as well as the contention of others (e.g., Katz, 1964), that white standards of performance, when applied to minority students who show real differences from white students in motivation and cultural background, result in a set of expectations and institutional policies which are detrimental to a minority student's performance. This argument has been one of the major instigations to school desegregation. It has been argued that school desegregation will place majority and minority students in classrooms where there is greater motivation to teach and where teaching facilities will be equal (Dyer, 1969). Moreover, it is argued that integrated classrooms will reduce existing cultural and motivational differences between students. Minority students should adopt the achievement standards of their white peers.

The Coleman report provides very qualified support for the above assumptions. Desegragation leads to improvement in minority group performance only if desegregation occurs in an "atmosphere" of racial acceptance in the classroom. Interracial acceptance in classrooms where the social class background of majority students is beneficial to achievement results in improvements in minority group school performance (Coleman, 1969).

The teacher is an important influence on the atmosphere of any classroom. In a desegregated classroom her racial attitudes can be expected to have an important impact on both the majority and minority students. Clark's (1965) argument that a teacher's racial expectations influence the atmosphere of a ghetto school, implies that teacher expectations should influence the child's desegregation experience. We have attempted to examine this teacher influence in the desegregated Riverside school system.*

*Eugene Johnson has had primary responsibility for this analysis.

Teachers were asked during the first (and subsequent) years of desegregation to rate the children in their classroom on a series of 55 semantic differential scales (see Appendix D). An orthogonal factor analysis of these ratings was made in order to determine the evaluational dimensions that were salient to teachers. Two major factors emerged, intellectual competence-motivation and passivity-compliance. These factors and their respective item loadings are presented in Table I. Semantic differential scale points to the left are those which loaded highest on the factor. In other words, a child rated high on these factors was seen as possessing those traits on the left of the semantic differential scales. It is not surprising that these two factors emerge from the factor analysis; teachers are most concerned with the ability of the children they teach (factor II) and with the discipline problems they pose (factor I). The variance accounted for by the two factors suggests that teachers were more concerned about discipline than ability. It is also interesting to note that teachers do not distinguish between motivation and ability when judging school competence. The intelleetual competence-motivation factor has a mixture of both motivational (e.g., persevering-quitting and independent-dependent) and ability (e.g., quick-slow, intelligent-dull-minded) items.

Teachers' semantic differential ratings of children for the year preceeding desegregation and for the second and fourth years of desegregation are presently being factor analyzed. These factor analyses should show the same factors as found in the first year of desegregation. We suspect that the factors are stable dimensions of a teacher's phenomenal world. Moreover, the variance accounted for by the factors pre-desegregation can be compared with the variance accounted for post-desegregation to assess the degree to which the salience of the discipline and competency dimensions shanges. If Clark (1965) and Becker (1953) are correct, and teachers in ghetto schools are most concerned with discipline than learning roblems, then the variance accounted for by the passivity-compliance factor should

Table I: Factor Analysis of Teachers' Semantic Differential Ratings of Sample Children, First Year Desegregation

Factor I
Passivity - Compliance

Item	Loading
Disobedient - Obedient	-.83
Difficult to discipline - Easy to discipline	-.83
Obstructive - Cooperative	-.81
Cruel - Kind	-.79
Prone to anger - Not prone to anger	-.77
Impatient - Patient	-.77
Irritable - Good natured	-.75
Prone to tantrums - Not prone to tantrums	-.72
Noisy - Quiet	-.70
Demanding - Not Demanding	-.69
Unscrupulous - Scrupulous	-.69
Suspicious - Trusting	-.68
Jealous - Not Jealous	-.68
Emotional - Calm	-.68
Dishonest - Honest	-.67
Fluctuating - Stable	-.65
Soft - Hard	+.62
Attention seeking - Attention avoiding	-.61

Variance accounted for = 32.0%

Factor II
Intellectual Competence - Motivation

Item	Loading
Good memory - Poor memory	+.79
Quick - Slow	+.79
Intelligent - Dull-minded	+.78
Able to concentrate - Subject to distraction	+.71
Persevering - Quitting	+.66
Interesting - Boring	+.64
Curious - Uninquiring	+.63
Self-confident - Subjectively inferior	+.63
Deep - Shallow	+.63
Organized - Disorganized	+.62
Independent - Dependent	+.62
Strong willed - Weak willed	+.62
Formed - Formless	+.60

Variance accounted for = 17.3%

be even higher among teachers in segregated schools pre-desegregation than among teachers in desegregated classrooms after desegregation. The discipline factor might also be less salient to teachers in all-white schools prior to desegregation than it is to teachers in integrated classrooms. These possible teacher differences pre- to post-desegregation are currently being studied.

A given teacher's judgments for a given child on those scales which loaded on the intellectual competence-motivation factor were summed for all children to form an index of judged or perceived brightness. All scores on this index were then standardized with $\bar{X} = 100$, and s.d. = 15, within grades and sex. This allows for the comparison of brightness judgments across grades and sex. Not surprisingly, teachers' brightness judgments for whites were much higher than for Mexican-American or black children, who were similar to each other. It would be expected, nevertheless, that teachers would differ in the extent to which white children were judged to differ from minority children. Furthermore, variation on this dimension might serve as an indirect measure of teachers' expectations.

In order to investigate the potential utility of a teacher's brightness judgments as an indirect measure of expectancy, it is necessary to sample those classrooms after desegregation which have enough sample children (white, Mexican-American, and black) for which teachers' brightness judgments exist. We selected for study those classrooms which had a minimum of three white Riverside School Study (RSS) and three minority RSS children. There were 30 classrooms in the first year of desegregation which met this criterion. These classrooms contained a total of 260 sample children (134 white, 66 Mexican-American, 60 black). In the first year of desegregation, they were distributed across all grades but tended to predominate in the lower grades.

For each of these 30 classrooms the means of a teacher's brightness judgments of white children and of minority children were computed. The size of the ratio of a teacher's average brightness judgment of white children to her average brightness judgment of minority children reflects the extent to which she judges

the children to be brighter. Of the 30 teachers for whom a discrimination score was derived, twenty-five (83.33%) judged white children on the average to be brighter than minority children. Nevertheless, there is considerable variation among these teachers in the size of the index.

A teacher's discrimination index may be high because the minority children in her class are in fact much lower in achievement than the white children. For each class, ratio of actual achievement was derived by dividing the average pre-desegregation achievement of RSS white children in the class by the average pre-desegregation achievement of the RSS minority children. Dividing the teacher's discrimination ratio by the achievement ratio of the children in her class yields a corrected discrimination index which is independent of pre-desegregation differences in achievement and which reflects the extent to which a teacher over or underestimates actual differences in ability between white and minority children in her class.

Rosenthal and Jacobson (1969), in a controversial field experiment, demonstrated that teachers' expectations of performance influenced actual differences in performance. Teachers were informed that children were being given the "Harvard Test of Inflected Intelligence," a measure of presumed "late blooming." In actuality, the test given was a standard test of intelligence. Twenty percent of the children were chosen at random, without regard to their actual test scores, and teachers were informed that children who had scored very high on the test were "late bloomers" and would show rapid gains in intelligence in the ensuing school year. The intelligence test was re-administered three months later, and those children labelled "late bloomers" showed significantly greater gains in intelligence test scores than those children not so labelled.

The "Pygmalion" effect is presumed to have been mediated by the teacher's attitude toward these "late bloomers," which somehow encouraged intellectual growth. Such effects may also occur if the teacher has an attitude which tends

to downgrade a child as in the case of a teacher who tends to underestimate the ability of minority children. If such effects occur, our sample of teachers might be expected to affect white and minority performance differentially depending on their discrimination index. In a 2 x 3 design, teachers were categorized into high and low discrimination groups. White, black, and Mexican-American children were then desegregated as being in high or low discrimination classrooms depending on their teacher's classification.

Table 2 presents mean changes in verbal achievement pre to postdesegregation as a function of ethnicity and the teacher's discrimination index, and Table 3 presents the ANOVA. There is a discrimination X ethnic group interaction of borderline significance. In classrooms where the teacher scores high on the discrimination index, minority children show a decrease in verbal achievement pre to postdesegregation, whereas white children in those classrooms show an increase. When their teacher is low on the index, white children show a decrease in verbal achievement while minority children show a slight increase. This teacher influence is not powerful, it does not account for much of the variance in changes in verbal achievement, and the teacher's influence appears to be greater for black and white children than for Mexican-American children, but the effects obtained do suggest effects of expectancy bias in the classroom. Moreover, this discrimination X ethnic group interaction obtained is highly significant when both minority groups are combined ($F = 7.69$; $p < .01$, $df = 1,212$).

Table 4 presents mean changes in total achievement pre to postdesegregation with the ANOVA presented in Table 5. There is a sizable discrimination X ethnic group interaction when Mexican-American and black children are combined ($F = 4.10$; $.05 > p > .01$, $df = 1,146$).

Although our analysis suggests effects of expectancy bias, some of the observations are not independent of one another since, in a given classroom, white and minority children are exposed to the same teacher. In order to eliminate

Table 2: Pre- to Post-Desegregation Changes in Verbal Achievement for Ethnic Groups in High and Low Discrimination Classrooms.

Teacher Discrimination	White	Chicano	Black
high	n=60 +2.47	n=15 -1.40	n=36 -3.94
low	n=52 -1.35	n=35 +0.57	n=18 +1.50

Table 3: Summary of Analysis of Variance of Changes in Verbal Achievement (Table XI)

Source	SS	df	MS	F
Discrimination	60.531	1	60.531	0.55
Ethnicity	89.145	1	89.145	0.40
Discrimination X Ethnicity	611.820	2	305.910	2.79*

* (.10> p >.05)

Table 4: Pre- to Post-Desegregation Changes in Total Achievement for Ethnic Groups in High and Low Discrimination Classrooms.

Teacher Discrimination	White	Chicano	Black
	n=59	n=14	n=32
high	+1.68	+0.93	-3.34
	n=48	n=31	n=16
low	-1.77	+0.26	+0.81

Table 5: Summary of Analysis of Variance of Changes in Total Achievement (Table XIII)

Source	SS	df	MS	F
Discrimination	0.006	1	0.006	0.00
Ethnicity	91.002	2	45.501	0.42
Discrimination X Ethnicity	377.747	2	188.873	1.77
Error	20665.883	194	106.525	----

this confounding, it is necessary to examine the influence of teacher discrimination on achievement using the classroom as the unit of analysis. The difference in change scores were computed for verbal and total achievement on a classroom basis for white and minority children. The larger this difference of differences, the greater the gap in achievement between white and minority children after desegregation. If there are expectancy bias effects, both measures (for verbal and total achievement) should correlate positively with a teacher's discrimination score; that is, the higher the teacher's discrimination index, the more divergent should be the scores between white and minority children. Rank order correlations between teacher's discrimination and the two discrepancy measures reveal this to be the case.

Out data are in line with the Rosenthal and Jacobson findings as well as research in more experimental settings (Johnson, 1970). Expectation does appear to influence performance. The effect is, however, not powerful. So many other variables influence performance. Small influences, however, are probably cumulative and are probably greater the younger the child. We are currently investigating the details of these teacher effects on a larger sample of children over a span of years.

There are some suggestive data which indicate that teachers' rankings on the discrimination index may be related to patterns of interracial preference in the classroom. Children were asked in the interview schedule to choose from a set of six pictures (two black, two Mexican-American, and two white) which picture was most like them, which picture they would most like to be, and which picture they would most like for a friend.

If the teachers' expectancy bias influences pre to postdesegregation achievement, it might also influence interracial preferences. Minority children may react to this teacher attitude by withdrawing more into their own racial group. This might be expected to affect minority achievement adversely if it is assumed that

minority children benefit from a truly integrated classroom.

Minority children were uninfluenced by teacher expectancy in choosing the face that "is most like me" but were influenced in choosing the face "who would you most like to be?". These data are presented in Tables 6 and 7.

White children are most likely to prefer a white face in the low-discrimination classrooms, and black children are least likely to choose a white face in the high discrimination classrooms. It is interesting to note that the two groups that are most disadvantaged by the teacher's attitude, i.e., white children in low-discrimination classrooms and black children in high-discrimination classrooms, as measured by achievement effects, show the largest deviations from expected frequencies.

Table 6: Percentage of White, Chicano and Black Children Who Choose a White Picture in Response to the Question: "Who Would You Most Like To Be?"

		White	Chicano	Black
Teacher Discrimination	high	n=63 65.1%	n=19 53.6%	n=41 31.7%
	low	n=67 73.1%	n=44 56.8%	n=19 42.1%

Table 7: Percentage of White, Chicano and Black Children Who Choose Own Race Picture in Response to the Question: "Who Would You Most Like To Be?"

		White	Chicano	Black
Teacher Discrimination	high	n=63 65.1%	n=19 42.9%	n=41 36.5%
	low	n=67 73.1%	n=44 38.6%	n=19 42.1%

Psycholinguistic analysis

Speech changes

We would expect contact of the relatively few minority children desegregated in each classroom with the majority of white children to have an affect on a wide range of attitudes and behavior. Speech changes may be one indicator of the degree of impact of the majority culture. This ought to be particularly so when the contact occurs primarily within an educational context and particularly so when the children involved are in their formative years. We would expect initially accented speech of the children of both minority groups to change toward standard California English. This change should be greater to the extent that the particular child both wants and experiences contact with his white classmates. Baehr (1968) reports that among black, inner-city adolescent boys, dialected speech is less pronounced the greater the child's achievement need and actual school achievement. Baehr's data suggest that aspirations affect behavior patterns, speech being one such pattern. We might therefore expect to find speech changes among minority children who are quick to adopt the values of the new school context. Just as any behavior pattern yields to group pressure, speech mannerisms are also likely to change toward the group norm. We would therefore expect that to the extent that aminority child is assimilated to the group, he will show speech changes. The effect of these two influences on speech, value change and assimilation, are difficult to separate since the child who adopts the values of the "new" classroom is also more likely than the child who does not change his values to become assimilated into the informal social network of the class.

The speech protocols used for this analysis were the Children's Apperception Test (CAT) stories (see appendix D). We analyzed a sample of 530 children out of the total sample. This subsample is shown below. Erhan Yasar had primary respon-

sibility for this analysis.

Grade	White	Black	Mexican-American
2nd	20	37	65
3rd	20	30	61
4th	20	32	61
5th	20	25	66
6th	20	15	38
TOTALS	100	139	291

GRAND TOTAL: 530

The raw data used were the transcribed protocols collected in 1966, 1967, and 1969. The protocols were punched onto IBM cards and processed through our IBM 1800 TEXT analysis program.

In specifying a set of children's speech properties to use as an index for development and change, the following criteria were met:

1. The specific set of speech properties should be suitable to serve as a common ground for comparisons across ethnic groups as well as for developmental and longitudinal comparisons within each ethnic group.

2. The specific set of speech properties should be sensitive to developmental changes and to desegregation as a factor influencing these developmental changes.

3. The specific set should also be an index of the child's educational status. In this respect, certain aspects of language have, at best, an ambiguous implication for an individual's educational achievement, such as pronunciation. Although mispronunciation of a word may reflect negatively on a person's achievement and mastery of that language, a "correct" pronunciation yields little mastery information. A ceiling is reached very quickly and pronunciation rapidly loses its ability to differentiate among individuals who achieve correct pronunciation.

These criteria led to the consideration of alternative statistical means of assessing our speech samples, such as the measurement of word length and vocabulary size, rather than through brute-force linguistic analysis. The

statistical properties of the kind of speech produced in these interviews, however, are not expected to be significantly affected by the particular circumstances of the testing situation since these properties are independent of any particular contextual and semantic considerations (Herdan, 1964).

Zipf (1935, 1942, 1965), Yule (1944) and Herdan (1964) report that shorter words are distinctly favored in usage than are longer words. Shorter words are, therefore, more frequent in both spoken and written language. One implication of this is that the shorter a word, the more likely will it be learned because shorter words are more likely to be used by other speakers. Average word length is a measure which satisfies our criteria. Word length is free of any subcultural biases provided that the groups being measured speak the same language (Zipf, 1935; Miller, 1951; Miller et. al., 1958). Word length also constitutes a sensitive measure of speech development and mastery.

We also counted the number of different words used by the child for each stimulus picture. Our analysis is based on the idea that the informational value of speech is an index of its sophistication. Informational value is a function of the number of different words the speaker uses and the mean informational value of each word, which is captured by word length.

The results thus far can be summarized as follows:

The sheer volume of verbal output is relatively higher for minority children, and this volume increases for all groups as the interview progresses.

White children use the longest words, but this difference diminishes as desegregation progresses. Development differences are also apparent. The older a child is, the longer are the words he uses.

Vocabulary size, as measured by the number of different words used, is greatest for black children.

Mean word length tends to drop as the interview progresses. This is

particularly so for minority respondents.

A relatively high volume of verbal output, a greater number of different words, and a comparatively short word length indicate relatively restricted speech. This pattern characterized the younger and minority children and those children who experience a high degree of anxiety during the interview. A relatively low volume a verbal output, fewer different words, and a comparatively long word length suggest ready coded and organized and organized speech. This type of speech characterizes older respondents, those with a high I/Q/, more of the white children, as well as those with lower levels of anxiety during the interview. These children also exhibit less of a drop in word length during the interview.

Desegregation increases word length for the minority child more the younger he is.

We are currently examining the effects on these speech indicators of a variety of other factors since we still assume that it is a sensitive indicator of the degree to which external influences have been internalized.

Earlier we performed an analysis of dialected speech on a limited sample of protocols and found trends which parallel those listed above. It is a good guess that, at least for children, our combined measure of word length and number of different words can be used instead of dialect analyses to study speech development and change in the desegregation context.

Speech anxiety

Among the measuring instruments used in our testing, six black-and-white cartoon-like pictures from the Children's Apperception Test (C.A.T.) developed by Bellak (1954) were shown to the child, one at a time. These pictures depict animals in various school, home and play situations. Each child was asked to make up stories about each picture. His stories were taped and transcribed.

Since the testing situation is not unlike the situation between pupil and teacher, we believed that the child's school anxiety would be reflected in his speech and that an analysis of the child's protocol might therefore be a useful indirect measure of school anxiety that would reflect adjustment changes from year to year. In attempting to apply Mahl's category system (Mahl, 1956; Zimmerlo, Mahl and Barnard, 1963), our intuition was violated by the fact that the categories were not distinguished as to their importance or weight in the overall measure. Also, the measure had been constructed primarily to assess the course of psychotherapy for adults in treatment. In order to refine the technique and make it appropriate for our sample, we decided to use the medium of a laboratory experiment to control certain influences on the child's spontaneous speech. (This experiment has been described in detail in "Speech Parapraxes and the Development of Language," by H. B. Gerard and M. A. Thelia, unpublished manuscript, 1969).

In this pilot work, the Rustic Lane Study (the experiment was run at the Rustic Lane School), the main experimental factor was the induction of anxiety, since our objective was to "bootstrap" a measure of children's speech disruption. Each child was instructed to make up stories to a sequence of the CAT pictures used in the larger Riverside study. For half of the children we attempted to induce anxiety by having a teacher enter the testing room half way through the picture series, that is, after two pictures had been administered. The teacher

took a particularly stern attitude and the child was told that the teacher would grade him carefully and strictly. The low anxiety Ss told stories about all of the pictures without the midway anxiety induction.

We set out to do a detailed analysis of speech in which, among other things, we determined the structural positions of the many disturbances in the stream of speech which are referred to as "permissible non-linguistic variations." We chose to name "speech parapraxes" all hesitatory devices achieved through the use of ready-made phrases, breaks in construction, repetitions, exclamatory sounds, etc. This determination was achieved through a detailed, three level system of coding which includes syntactic (surface structures), semantic (clichés), and contingency descriptions.* Our major goal was to determine which parapraxes were sensitive to the anxiety induction. We attached a pair of Beckman electrodes to the child and measured changes in his skin conductance during the entire experimental session. We planned to use these data as the basis for an internal check on the occurrence of suspected speech anxiety indicators. If the speech event did indeed reflect anxiety there also ought to be a physiological concommitant.

The sample consisted of 128 children in a factorial design which counterbalanced for anxiety level as well as sex, grade (1st and 4th), interviewer (Mrs. Blue and Mrs. Green), and picture set used (set A and set B).

A sub-sample of 16 interviews of fourth-graders was drawn to run trial analyses. Protocols of these interviews served to establish a manual of definitions and examples for coding children's spontaneous speech. Appendix F is a condensed version of the coding.

The tabulation of the frequency of occurrence of given codes, both individually and by complex contingencies, was accomplished by our IBM 1800 TEXT system

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* Michel Thelia had primary responsibility for developing this system.

which edits, transgenerates and counts the coded speech events. The process is exceedingly tedious and time consuming. We are currently analyzing the speech of all fourth-graders while the protocols of the first-graders are being coded.

The speech protocols from the 16 fourth-graders were examined in detail. Our aim was to find indicators of anxiety in spontaneous speech and secondarily to explore other potentially useful psycholinguistic parameters. Eight Ss were in the high and eight in the low anxiety treatment.

Our approach* has been guided largely by the work of Basil Bernstein (1962) and Frieda Goldman Eisler (1955, 1968). Briefly, Bernstein distinguishes between two main classes of language-patterning habits, which he terms "restricted" and "elaborated" codes. The codes or quasi-dialects of sub-cultures within a language are thought to be reflected chiefly in the structure and classes of lexical contents of highly-coded utterances used by speakers in spontaneous speech conditions. Restricted codes tend to suggest high group identification, with little interest in literally individuating either the referents of the utterance, the speaker's affect, or his individual role as a cognitive agent. Such a code will involve shorter utterances, frequent high-probability sequences, greater non-verbal specification of affect. Restricted code speech is then highly stylized. Elaborated codes, on the other hand, reflect less group identification, with greater tendency toward literal specification of individual experience in longer utterances with less reliance on high-probability strings. Opie and Opie (1959) have shown that the language of the elementary school child in his peer group is a system in which highly-coded utterances dominate. More recently, Labov (1969) has shown high group identification and strong adherence to the language code of the group among pre-teen urban Negro boys. It seemed reasonable to think, then, that Bernstein's theses might be fruitfully applied to the Rustic Lane Study (RLS).

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* Kay Bikson has primary responsibility for the work presented below.

We predicted that restricted code-users would exhibit greater anxiety, at least initially, during a speech-related task. Goldman Eisler (1955) shows how differential anxiety manifests itself in selective sets toward the speech task and also in response to different affective conditions. Her collection of studies (1968) provides strong empirical support for her distinction between now-organizing and well-organized speech. Well-organized speech is highly-coded and more fluent, being semi-automatic. Now-organizing speech is speech in which much verbal planning has to occur; not being highly coded, it is full of choice points which occasion both hesitancy and anxiety. We can predict that, because restricted code-users are going to have to engage in more verbal planning (non-organizing speech) than elaborated code-users (who have a more sophisticated code on hand), restricted code-users should exhibit anxiety marked by hesitancy. Goldman Eisler looks at hesitancy chiefly in terms of duration and distribution of pause time; affect is also studied in terms of speech breathing rate and expulsion rate (syllables per breath). Mahl (1956) had previously found hesitation useful for assessing anxiety, along with frequency of certain speech disturbances. However, neither Mahl nor Goldman Eisler have studied children.

Hesitancy. Pauses "filled and unfilled" (FP, UP, see Appendix C for the legend used in the present analysis). Unfilled pauses are measured either by duration (Goldman Eisler, 1961) or frequency (Maclay and Osgood, 1959). Frequency is by far the simpler measure, but it also yields more conservative results (since a pause has a frequency count of one whether it lasts two or twenty seconds). The measure used here is a frequency count of the combined RLS second-level categories V and = (Appendix F). Goldman Eisler's work gives strong support to the claim that unfilled pause time is used for verbal planning (partialled out for lexical, syntactic, and semantic choices). On the hypothesis that more now-organizing speech occurs in less verbally sophisticated subjects (restricted code-users), UP should

correlate negatively with all the fluency measures except for the ready-made phrases category. This expectation is supported in the data.

UP, AR: -.75*
UP, utterance length: -.80*
UP, utterance duration: -.56*
UP, ready coded: .50

If it is the case that a person who needs to do a great deal of verbal planning tends to be anxious, then this data is also consistent with Mahl's finding hesitancy an indicator of anxiety.

FP, represented by category U (ah) in the RLS first level code, is thought by Mahl not to "vary with anxiety, thereby differing from other influences." "Ahs" are rather regarded by Maclay and Osgood as responses by a person to his own silence. This hypothesis is lent confirmation by our data; fluent Ss, not being accustomed to silences interspersing their speech, are the most frequent users of FP (AR, FP: r = .43). That FP and UP relate differently to fluency is not a trivial result: Goldman Eisler and Maclay and Osgood have shown that the two do not simply vary inversely--the tendency to pause, cet. par., produces more of each kind. Thus, FP and UP do not correlate significantly here in either direction; but the less fluent Ss pause more in general, and have more frequent UP's.

The proportion FP/UP represents the tendency to prefer filled to unfilled pauses, regardless of how frequently S tends to pause; this ratio is uncorrelated with total pauses (FP+UP). It correlated negatively with UP (-.75*), positively with FP (.33*), and therefore positively with fluency measures:

FP/UP, AR: .61*
FP/UP, utterance length: .58
FP/UP, utterance duration: .46

A repeated measures analysis of variance produced no significant results for FP or FP/UP, a finding consistent with those of Maclay and Osgood and Goldman

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* p<.01 for starred values and .05 for unstarred values.

Eisler (who report FP data to be extremely variable). However, a significant order by condition interaction effect was obtained for UP ($F = 3.54$, $p < .05$) and for FP+UP ($F = 4.87$, $p < .01$). That the differences occur in the predicted places in both instances is shown by the significant t values for the fourth story on both UP ($t = 2.5$, $p < .025$) and FP+UP ($t = 2.95$, $p < .01$). in each case "high anxiety" Ss exhibited greater hesitation frequency. It is not clear that both kinds of hesitation are related to anxiety in the same way. Hesitation phenomena would seemingly merit further study on a larger scale both in the Rustic Lane data and in the larger RSS sample.

Fluency. (Articulation rate, utterance length, utterance duration, ready-coded phrases). 'Fluency' refers here to measures of speaking facility. Such measures have in previous studies involved both words and syllables as units of utterances. Because children infrequently use polysyllables, the potential discrepancy is narrowed; all fluency measures referred to below were taken using both units, and were found to have a rank correlation of .95 or better. Since the protocols seemed to suggest that Ss who use longer utterances also use more polysyllables, Ss were dichotomized on the basis of mean utterance length:

short utterance subjects:	median words = 6950
	median syllables = 7650
long utterance subjects:	median words = 12639
	median syllables = 15042

For long-utterance Ss, the difference between words and syllables is considerably greater than chance (using a Mann-Whitney U). This result is not surprising in view of the fact that developmental linguistics (McNeill, 1970) commonly uses mean utterance length to calibrate linguistic development. Consequently, fluency measures below use the syllable as a unit so as not to depress differences at the upper end of their ranges. ('Utterance' here is taken as any verbal response longer than one word).

Summing across the four stories, the following rank correlations were obtained:

1. AR, utterance length: .86*
2. utterance length, utterance duration: .74*
3. AR, utterance duration: .43

The fourth measure, ready-coded phrases, is termed a measure of fluency because, according to Goldman Eisler, reliance on standard cut-and-dried phrases is perhaps the only way to increase articulation rate (AR) beyond the normal baseline. Such outputs coincide with what Bernstein characterized as short, high-probability sequences including his "sympathetic circularity" phrases. In the RLS code the union of first-level categories K, L, O, W, X, and 9 was used to represent this class of restricted code outputs; the ready-coded measurement represents frequency of items occurring within this joint set per 100 words. (All category based measures represent frequency projected onto a 100-word base). Importantly, it was predicted here that even though ready-coded phrases can increase fluency, their use will correlate negatively with other fluency measures since it is restricted code-users who are obliged to rely on them. The prediction was borne out as follows:

1. ready-coded, AR: -.72*
2. " , utterance length: -.63*
3. " , utterance duration: -.59

A repeated measures analysis of variance of fluency measures was run with Ss grouped into two conditions for the four stories. We find an order effect, significant at the .01 level, for utterance length; utterance duration does not change significantly, probably because the continuing increase in AR (a close-to-significant order effect)decreases the time it takes to output longer utterances. Comparison of the high with the low anxiety groups on AR yielded a t-value of 1.85 for story 3 ($p < .10$) and a t of 1.58 for story 4 ($.05 < p < .10$); and wilcoxen t-test shows a significant increase in AR for low anxiety Ss from story 2 to story 3 ($p < .025$), but no change for high anxiety Ss. This result

suggests that the introduction of the "teacher" in story 3 for the high anxiety S inhibits fluency. Remembering that Goldman Eisler gets a significant decrease in anxiety from the first to the second half of an interview, it may be hypothesized that the increased AR for the low anxiety S represents such relaxation while the absence of such an effect for the high anxiety S suggests continued caution. This result would seem to warrant further investigation with the full RLS sample. The argument we are suggesting is further supported by the ready-coded data, the analysis of which yielded a significant t-value between high and low anxiety for story 4 ($t = 1.88$; $p < .07$), with the difference in the expected direction (the high anxiety S relied more heavily on ready-coded phrases).

Speech breathing measures. (SBR, ER, non-verbal vocalizations, see Appendix C). Speech breathing measures are of interest because there is no relationship between resting breath rate and either SBR or AR. Rather, breathing, like basal conductance, is part of the autonomic system and is responsive to task demands. Breath rate is measured by counting the number of inhalations heard on the tape during an utterance (this method being the standard one for SBR since pneumagraph methods would interfere with the speech itself--cf. Goldman Eisler, 1968). SBR and ER have been found by Goldman Eisler to be more sensitive indices of affect than AR alone, since, for example, an AR of 300 syllables per minute could be maintained either by an SBR of 10 and an ER of 30, or by an SBR of 30 and an ER of 10--conditions which suggest quite different subjective states.

Correlational study of the data showed, as expected, that SBR and ER do not correlate with one another, but each correlates positively with AR:

AR, SBR: .93*
AR, ER: .59.

Because of the common relationship to AR, SBR and ER would be expected to vary together with many third variables. However, it would be predicted on the basis of Goldman Eisler's work that with greater anxiety, SBR will decrease and/or ER

will increase (she has found the latter more sensitive to changes in affect). For this reason, the two should be differentially related to pauses, SBR varying inversely with UP:

SBR, UP: -.71*
ER, UP: n.s.
SBR, FP: .64*
ER, FP: n.s.
SBR, FP/UP: .74*
ER, FP/UP: n.s.

Both measures, however, correlate negatively with pausing in general:

SBR, FP + UP: -.58
ER, FP + UP: -.71

Non-verbal vocalizations, although not properly regarded as breathing measures, have been grouped under this heading because they seem often to function as tension-reduction devices and are frequently related to inhalation (sighing) and expulsion of air (laughs). This measure is based on the union of first-level categories Q, R, S, and Z, a set of which is capable of providing for the non-literal specification of affect (cf. Bernstein, above). Consequently it is expected to correlate positively with all fluency measures except the ready-coded measures; it should correlate negatively with the tendency to fill pauses, and positively with unfilled pauses. These predictions hold, in the following manner:

non-verbal sounds, AR: -.60
" , utterance length: -.49
" , ready-coded: .47
" , FP/UP: -.57
" , UP: .51

Finally, non-verbal vocalizations ought to correlate negatively with SBR but positively with ER. The former correlation does reach significance (-.53), and the latter fails to approach significance.

Repeated measures analysis of variance, grouping Ss under high and low anxiety for four stories, yielded a significant order effect ($p < .01$) for non-verbal vocalizations (they decrease in frequency from story one to story four).

If such sounds indicate anxiety, then the relaxation-effect from the first to the second half of the interview is apparently overriding differential response to the anxiety condition for this variable. However, a Wilcoxen t-test for change in ER between stories 2 and 3 shows the high anxiety S to undergo a significant increase ($p < .025$), as would be expected in the case of increasing anxiety; the low anxiety S shows no such change. Moreover, although the anova for SBR did not yield significant results, the standard t-test for story 3 comparing high and low anxiety Ss came very close ($.05 < p < .10$) with the difference in the proper direction (the high Ss had the higher SBR).

Anacoluthon and aposiopesis. (counted as occurrences in the combined set of third level RLS categories / and = per 100 words). Mahl had counted grammatical unfinished constructions or shifting among the class of speech disturbances which also included FP and non-verbal vocalizations and had suggested that they might well be responses to anxiety (on the thesis that one of the most common results of anxiety is the disruption of any ongoing complicated process such as speaking). Moreover, they might be thought to mark off places where verbal planning is occurring. However, rank correlations showed the following concerning the relation between unfinished constructions and Mahl's other measures of hesitancy and disturbance:

(A+A), UP: n.s.
" , FP+UP: n.s.
" , FP/UP: .68*
" , FP: .55
" , non-verbal noises: -.43

Interestingly, the following correlations with fluency measures were found:

/+=, AR: .51
" , utterance length: .59
" , utterance duration: .47

It is not obvious why unfinished constructions should correlate with fluency and not hesitancy. Perhaps only "expanded" utterances are sufficiently complex to be

left unfinished and only verbally the more sophisticated child attempts them at all and feels secure enough to impose them upon his interlocutor. A repeated measures analysis of variance yielded no significant effects for this variable. It might be more fruitful to look at the distribution of pauses around such constructions.

Subordination index (SI). Goldman Eisler uses as a dependency measure the ratio of dependent-clauses to total clauses to represent syntactic complexity of utterances. She finds that such complexity, as part of well-organized speech, requires no additional hesitancy. This suggests that complexity as part of an elaborated code should correlate positively with fluency factors and negatively with hesitancy factors.

Complex connectives fall into first level code categories E and J; category T is a simple connective used only for stringing together independent clauses. Two measures were computed, simple/complex connectives and complex-connectives-per-100-words. The two correlated at .63*. The latter measure was preferred because its correlations with other variables were more clear-cut and its use of the 100-word baseline makes it more comparable with the other variables. All of the predicted hesitancy correlations were significant. Moreover, the index correlates positively with fluency factors (SI, AR: .54; vs. SI, ready-coded: -.58).

A repeated measures analysis of variance for SI yielded a close-to-significant order effect in favor of increasing complexity. This result is firmed up by pooling across conditions and comparing subjects on story 2 and story 3 using a Wilcoxen t; the difference here is significant at $p < .005$. Moreover, t-tests comparing the high and low anxiety Ss showed significant differences for story 3 ($t = 2.29$, $p < .025$) and story 4 ($5 = 3.5$, $p < .005$), with those in the high condition employing fewer complex constructions.

Because the probability of occurrence of any function-word decreases with length of content (i.e., the proportion of function-words is relatively highest for the first hundred words of spoken speech and decreases by consecutive hundreds to reach asymtote in the fourth hundred), it seemed reasonable to try weighting subjects' SI scores differentially depending on the length of story for which it was calculated. Using the percentages given in Fries (1952, p.105), stories of 400+ words were weighted most, those of 100- words were weighted by one, and stories of intermediate lengths had their SI scores given the appropriate intermediate weights. This new measure correlated .82* with the old one. Moreover, calculating all possible between-story correlations for the old variable resulted in rho values from -20. to .71, with an average rho_s of .24 (n.s.). But the weighted SI yielded rho values ranging from .34 to .83, with an average of .54 (p .05, pooled across conditions). These comparisons suggest that the weighted SI is a more reliable measure. In addition the weighted SI (unlike the unweighted one) exhibits similar patterns of intercorrelations with other variables in all four stories.

The above discussion of SI assumes that the use of complex connectives by children represents a level of linguistic sophistication different from that represented by the compounding of independent clauses with simple connectives. To check on this assumption, the simple connectives code category T (first level) was examined. The values of rho T between SI for stories 1-4, respectively, are: .29, .20, .03, and -.47, the average being close to zero. It seems clear, then, that these two structural classes should not be identified with each other.

Another possible interpretation of the T class was that its members function as hesitations, either as FP's or as drawn out word boundaries (class V of UP). The rho values between T and the hesitation classes for the four stories respectively are:

T, FP: .24, -.21, .10, -.18
T, UP: -.34, .12, -.09, .03

The average value of rhos between T and FP and between T and UP are both close to zero. On this basis it seems unlikely that T-items function as hesitation devices.

Finally, all possible pairs of correlations of SC with itself for the four stories were computed. Values of rho range from -.11 to .54, with the average at .24. That occurrences of T do not intercorrelate suggests that this category does not define a stable linguistic behavior in children.

Specific lexical or structural classes of contents, adjective measures. In an early article Busemann (1925), following Rorschach, suggested that an "action quotient" based on the relative proportion of action words (verbs) to qualitative description (adjectives) would measure a "personal symptomatic style" and would change with varying emotionality during spontaneous children's speech (increases in the proportion of verbs correlating with increased emotional instability). Osgood, (1953, p.719) cites data showing that more finely qualified and discriminative language (with higher frequencies of nouns and adjectives) increases with I.Q., while disproportionately frequent use of verbs characterizes young children, and low I.Q.s. Finally, Boder (1940) argues that adjective use corresponds to "higher type" ideational and linguistic behavior than is usually required by the other speech forms and so should be more easily influenced than are the others by different subjective states. Using as his measure the number of attributive adjectives per 100 verbs, Boder found different contents to have significantly different "adjective-verb quotients." Adopting somewhat similar measures (adjectives/words, uncommon adverbs/words), Bernstein found significant differences between social classes even after equating for verbal and non-verbal I.Q. Thus, it seemed feasible to attempt some sort of adjective measurement for our data.

Both an adjective/verb ratio and an adjectives-per-100-words measure were computed; these measures correlated well with one another (.88, p .01), but failed to correlate significantly with any other dependent measures for which a correlation was predicted. Subsequently the measure "attributive-adjectives-per-100-words" was computed by counting only adjectives in first level RLS code (omitting predicate adjectives); this measure likewise failed to bear a significant relationship to its predicted correlates. Repeated measures analyses of variance, using each of the three dependent adjective variables, did not yield any significant results. Finally, the attributive-adjective was examined for reliability by doing rank correlations on that variable between stories. All possible comparisons were made: values of rho ranged from -.26 to .53, with an average of .17. Additional checking of within-story correlations between the adjective measure and other dependent measures showed that the over-all correlational pattern from story to story was quite irregular. It should be noted that Boder's results came from written language, and neither Boder nor Bernstein had elementary-school-aged subjects. By checking what constituted, in actuality, the category of class 3 words (Fries) in our interviews, we found that most adjectives were near-function words (quantitative and ordinal numerals such as next, other, two, all,more, own) or supplements to class 1 words (nouns used as adjectives: mother (bear), lady (cat), dog (food)) and that they were not descriptive in the sense of Boder's concept. We consequently revised our definitions and separated out the merely descriptive attributive adjectives (RLS class 5 words) from new RLS class 3 words indicative of time, place, quantity, etc. The whole speech sample has been now recoded in that way and we will shortly compute a new adjective/verb ratio.

Factorial Analyses

Because the number of dependent measures involved in the present undertaking

was somewhat unwieldly and because it was desirable to get a sound empirically based grouping of them, factor analysis seemed the next logical step. Fourteen variables were analyzed: AR, V+≡, K+L+O, W, X, FP, UP, FP+UP, FP/UP, SBR, ER, non-verbal noises, adjectives, and SI. (Least promising or reduplicative dependent measures were omitted in order to keep the number of variables to be factor analyzed less than the number of subjects and leave sufficient degrees of freedom). A maximum of four factors was requested from the program, and data for each story were analyzed separately to find out whether factor loadings would be consistent.

Only three factors emerged (see Table 1), but they emerged consistently for each story. The loading of each variable on its factor for each story is given. What is of striking theoretical relevance for psycholinguistics is the nature of the factors: variables load together which theoretically ought to be together; those which ought not go together load on different factors; and the three factors themselves appear to be conceptually distinct.

Factor I might be regarded as the fluency factor. It has been seen that breaths per minute will be subordinated to the speech task (speaking rate is not affected by normal breathing rate). Consequently the reason for SBR and AR loading on the same factor should be sought in AR: increasing the number of syllables per minute eventually requires accelerating SBR to supply breath needed for verbal production. Moreover, both relative frequency of filled pauses (FP) and the tendency to fill pauses rather than leave them unfilled (FP/UP) have been seen to correlate with fluency measures (not only AR but also utterance length and duration); it was hypothesized that verbally fluent persons are unaccustomed to unfilled pause time. For this reason, too, factor I should be thought of as a fluency factor. It is our feeling now that filled pauses may function somewhat like syllabic morphemes for the fluent speaker, keeping the sound production rate nearer its normal pace while he is momentarily lacking word. (The protocols suggest that if the pause lasts too long, a second and

TABLE 1

Factor Analysis of the Fourteen Fluency and Disruption Categories

Factors				
factor I	1	2	3	4
AR	.767	.877	.844	.810
SBR	.845	.920	.949	.889
FP	.895	.714	.441	.415
FP/UP	.917	.595	.599	.740
Q.R.S.Z.	-.312	-.643	-.427	-.655
factor II				
ER	.812	.826	.880	.707
FP+UP	-.419	-.586	-.763	-.858
factor III				
V+= (first level)	.629	.522	.560	.902

(variables which did not load on any factor: K+L+O, W, X, SI, UP, adjectives.)

even a third FP may occur). Finally, the set of non-verbal noises loads negatively on this factor. It has already been shown that such occurrences correlate negatively with fluency measures and with filled pauses, and it was suggested that such vocalizations are non-verbal ways of specifying affect. If they do serve this latter function, and surely also serve to fill silences, one might wonder why they vary inversely with filled pauses ostensibly filling the same roles. Bernstein, it will be recalled, suggests that such non-verbal items might be more characteristic of the restricted code user.

We should like tentatively to propose that Q, R, S, and Z are meaning-bearing (non-literally), and although they do fill silences they do so in a non-speech-like way which is of no help in keeping up AR. On the other hand, FP's are in no way meaning-bearing (not even connotatively), but they do provide a speech-like way of keeping up AR. Bearing this in mind, it may be conjectured that elaborated code users (fluent speakers) tend to shun non-literal meaning-bearing items (either because they are non-verbal, or because they disrupt AR, or both) in favor of FP's as a response to silence; restricted code users would not exhibit such a tendency (either because of less need to specify experience literally, or greater satisfaction from (quicker tension reduction from) specifying it non-verbally, or being more accustomed to disruptions of AR).

Factor II is especially interesting in view of what was previously learned about SBR, AR, and ER. Both SBR and ER have been seen to correlate with AR (increasing the number of syllables per breath eventually results in an increasing AR); however, it was suggested that SBR and ER, while contingent and related, measure independent aspects of the speech situation. For this reason, it was theoretically important to learn that SBR and ER do load on different factors (or, that at least one of them but not more than one of them, loads on the same factor as AR). In addition, it is interesting to learn that it is ER which loads

on factor II. Goldman Eisler had previously found in adults that ER is the most reliable indicator of affect in a speech situation. She suggests that this result may be properly interpreted by assuming that speakers adapt to the requirement of situation, topic, and interviewer mainly through variations in the rate of speech output (AR) and that they preserve balance by keeping the economy of air outflow per speech unit (ER) constant. On this assumption, deviations from the speaker's preferred ER level would indicate some upset in the balance of affect and control (emotion not being channeled through verbal activity). In particular, lower ventilation (increasing ER) was found to indicate caution, anxiety, and repressive affect in general. This result is consistent with the significant increase in ER noted earlier for Ss in the high anxiety condition from story two to story three. For this reason factor II might be regarded as the affective factor. The other variable loading on this factor is FP+UP, which loads negatively in relation to ER. (It might be conjectured that UP might well load on this factor except for its much higher variance: otherwise, it has a high rank-correlation with FP+UP and produced similar anova results). Such a result was to be expected in view of the high negative rhos predictably obtained between ER and pausing. If factor II is properly represented as an affective factor, increased pausing represents a response to affect different from the increased ER response. It will be recalled that pausing has been proposed to relate to verbal planning (Goldman Eisler, Maclay and Osgood). Moreover, Goldman Eisler has suggested that delaying speech for cognitive activity involves inhibition or control in a manner basically incompatible with an emotional response. This suggestion calls attention to the fact that while ER and pausing are to a degree trivially related (the more pauses, the fewer syllables per breath--but only if AR does not increase), they may well be related on a more important level (as the high negative rhos, even while AR increases, would imply). That is,

it may be hypothesized that speakers may respond differentially to an anxiety-inducing stimulus in a speech situation--either by an increased ER (representing affect not channeled through the task, so that tension reduction is not adequately effected) or by increased pausing (representing affect under control and cognitive activity under way).

Factor III has only one loading, the combined category, V+=. It is tempting to interpret this factor as the ready-coded factor. Unfortunately, this interpretation is weakened by the failure of other variables in the ready-coded category to load on factor III. (K, L, O did not load on any factor for any story. W and X did not appear for every story, but when they did appear they failed to load on any single factor). That failure might in part be accounted for by the low intra-subject reliability for those variables noted earlier. Possibly the first level RLS code category nine, representing the frequency count of high-transitional-probability items in ready-coded sequences, may well have loaded on this factor. Conceptually the occurrence of V+= as a factor distinct from both fluency and affect is important and bears further investigation.

On the basis of the factor analytic results, another analysis of variance was undertaken. Scores on all variables were normalized, and those loading on the same factor were added together (with negatively correlated factors negatively weighted). Repeated measures analyses of variance with Ss nested under high and low anxiety conditions for the four stories resulted in no significant F values (factor II approaches an interaction effect, with a p of about .10).

Conclusions and projections. Finding a basic factor structure in the subsample data is of considerable interest. It is especially noteworthy that the factor structure remains fairly constant across the four stories, being stable even under the anxiety manipulation. Moreover, the factors themselves seem interpretable as representative of the major theoretical ideas which motivated

the present study. If factor I represents verbal sophistication (well-organized elaborate coding) and factor III represents short, high-probability ready-coded phrases (well-organized restricted coding), then it is understandable that they would not necessarily reflect the anxiety manipulation. It would, however, be predicted that subjects ranking high on factor III would in general be more anxious during any speech task and would respond to the anxiety-inducing stimulus with a change in their factor II score in the direction of even greater anxiety. Whether that change was sufficient to yield significance would depend on its magnitude relative to the initial baseline score on factor II. It is important, then, that factor II is the one which is most promising as an indicator of anxiety.

It should be pointed out that we are looking for a significant interaction effect with some measure of anxiety, representing a difference for the high anxiety S only, and only on the last two of the stories, that is, after the anxiety induction. Factor II yields such an interaction which might be strengthened considerably by the addition of the rest of the Ss in the sample. Although our subsample size of 16 compares favorably with the number typically employed by Goldman Eisler, Bernstein, Mahl, and Maclay and Osgood, it may well be that children's speech habits are more variable and increasing sample size will help. (It is of considerable interest to developmental psycholinguistics that the parameters involved in adult spontaneous speech are emerging so regularly in fourth-graders; it is uncertain whether the first-grade data will approach this degree of regularity). It should also be mentioned that factor II variable, FP+UP, suffers from a severely limiting ceiling effect, so that higher extremes on this parameter are not adequately represented. UP, it will be recalled, is measured here in terms of frequency rather than duration (Bernstein and Goldman Eisler use duration, as does Mahl). But in frequency terms, very long hesitations and very short ones count equally--it is not possible on a frequency basis to have more than one UP occurring between any two morphemes. We suggest that this

accounts for the failure of UP alone to load on the factor. It seems appropriate to consider using an automatic pause-time measuring device which processes voice tapes and prints out pause times (for the large n in our sample, this method is much superior to Mahl's use of two Springfield stop watches manually regulated). We are also planning to look at the distribution of pauses about utterances, following up leads in Maclay and Osgood, and to see whether distributional properties reflect anxiety.

Beyond this, it seems important to select new specific classes of codes which have some prima facie probability of reflecting changes along the lines of factor II (increased repressive affect, independently of whether it is channeled through verbal planning). Second and third level categories might be more carefully investigated for this purpose. A look at the within-story correlations between the variables studied here, along with a look at the within-variable correlations between stories, might provide some clues as to what can be expected. Briefly, the within-variable correlations suggest that along many linguistic dimensions children have developed some fairly stable habits by the fourth grade. This stability is also reflected in the great similarity of the between-variable correlation patterns for the four stories. However, it should be noted that stories one and two have most similar patterns; story three is basically similar, but the rho values become lower, in several cases not reaching significance. Story four is again similar in pattern, but with much fewer significant correlations, and some correlations beginning to change in the opposite direction. These comparisons suggest that Ss are responding to the observation condition but not in univocal fashion, so that a single indicator may be difficult to find. If, however, the interpretation of the inversely related variables loading on factor II is approximately correct, there is some reason to hope that responses to the high anxiety condition will be classifiable into two groups (depending on whether they are associated with uncontrolled affect or cognitive inhibition).

Experimenter Effects:*

A finding of some general interest concerns the Ss differential response to the two experimenters whom we shall call Mrs. Blue and Mrs. Green. Mrs. Blue obtained greater speech output from girls than she did from boys, and Mrs. Green obtained the reverse effect. Also, for the "high anxiety" boys, Mrs. Green produced a conductance increase for boys but not for girls just prior to the anxiety induction. The experimenters were not blind to the child's treatment, so that this latter effect may be interpreted as anticipatory. Mrs. Blue is a very professional Ph.D. candidate whereas Mrs. Green is very motherly and has a reputation for being protective to boys. We administered an attitude and personality inventory to both experimenters and found personality and attitude differences that are consistent with the experimenter by sex interaction.

* Toni Falbo was primarily responsible for this analysis.

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Appendix A

Original Proposal

FACTORS CONTRIBUTING TO ADJUSTMENT AND ACHIEVEMENT IN RACIALLY DESEGREGATED PUBLIC SCHOOLS

A
JOINT PROJECT

Riverside Unified School District
and
University of California, Riverside

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Riverside Unified School District

Robert R. Hewitt
Associate Dean for Research
University of California, Riverside

Harold B. Gerard
Professor of Psychology

Norman Miller
Associate Professor of Psychology

Harry Singer
Associate Professor of Education

June 1, 1967 – May 31, 1972

Title : Factors contributing to adjustment and achievement in racially desegregated public schools

Cooperating Agency : University of California, Riverside, California
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Contracting Officer :

Robert R. Hewitt
Associate Dean for Research

Duration of Activity : June 1, 1967 -- May 31, 1972

Total Federal Funds Requested:

Date Transmitted : August , 1966

II. ABSTRACT

Title of Project: Factors contributing to adjustment and achievement in racially desegregated public schools

Principal Investigators: Harold B. Gerard, Professor of Psychology
Norman Miller, Associate Professor of Psychology
Harry Singer, Associate Professor of Education

Contracting Agency: University of California, Riverside, California

Federal Funds Requested:

Beginning and Ending Dates: June 1, 1967 -- May 31, 1972

This research program examines the antecedents, concomitants, and consequences of successful integration of Negro, Mexican-American, and white children in the elementary grades of the public school system. It assesses both long term and short term effects of desegregation. The major indices of success are academic achievement and emotional adjustment. The study focuses on three antecedents or concomitant factors which may affect these dependent measures: characteristics of the child, his parents, and the school.

Essentially, the proposed research is a longitudinal study involving nearly 1800 children. Approximately half are minority group members and half white. The two halves are matched for grade. The design is basically a seven year natural time series experiment consisting of a premeasurement and six successive postmeasurements. Selected matched control groups will provide baselines for evaluating the effects of community sensitization, repeated testing of the sample, and general social-cultural changes occurring over the time span of the study. The basic research strategy is extensive multiple measures of all variables: achievement, personality, and adjustment of the child, parental values and attitudes, and school and teacher characteristics. Other sources of support have financed the major portion of the premeasurement phase of the study. This proposal requests funds to complete the premeasurement phase, to administer postmeasures over the next six years, to measure control groups, and to analyze the data.

This study will provide basic information on the antecedent child, parent, and school characteristics that promote achievement and adjustment following termination of de facto segregation. The impact of desegregation on both the majority and minority child will be evaluated. Likewise, the extent to which these effects feed back through the child to alter family attitudes, values, interaction patterns, and community participation will also be assessed. An important, though incidental outcome will be an accumulation of a wealth of child development data.

III. FACTORS CONTRIBUTING TO ADJUSTMENT AND ACHIEVEMENT IN RACIALLY DESEGREGATED PUBLIC SCHOOLS

A. OBJECTIVES

1. Problem

The major goal of the proposed research program is to determine the antecedents and concomitants of successful integration of Negro, Mexican-American and white children in a public school system. This task must, of course, be broken down into more specific questions. These can be organized under two major categories of dependent variables that define successful integration: academic achievement and emotional adjustment. The antecedents and/or concomitants of these indices of success stem from three sources: the child, the parents, and the school. This research program focuses on the variables from each of these three arenas which importantly contribute to the success of the Negro, Mexican-American and white child after desegregation is implemented. The general procedure consists of a series of sequential measurements beginning with premeasurements obtained prior to the implementation of desegregation. The premeasurements, taken between March and September of 1966, were financed by grants from the Rockefeller Foundation, the Regents of the University of California, and the California State Department of Education. These funds, which total to $222,454, will be exhausted by August 31, 1966. This proposal requests support to continue the research into the second phase which will consist of successive postmeasurements for six consecutive years, and measurements on selected control groups.

This research will primarily be conducted in the Riverside Unified School District on students who were in kindergarten through the sixth grade during the school year 1965-66. In conjunction with the decision to integrate, the school administration is thoroughly committed to evaluation and has assured complete cooperation. They will provide test scores and all other data they already have on the children and in addition, provide some personnel for the project. Members of the school administration participated extensively in the planning stages of the research. The chief school psychologist has received released time to work on the study and currently receives one-third of her salary from project funds. In every sense, the study is a joint venture between the University and the school district.

The integration of public schools is probably the most important social innovation of both the past decade and the present. The moral issue of the Negroes' and Mexican-Americans' inferior social position within the culture will only be resolved with the support of changes in cultural institutions. The work scene and the education scene, in contrast to residential patterns, are the institutional settings where changes are now occurring and are most likely to occur in the future. As communities end de jure and de facto segregation, the need for information becomes increasingly vital. We need to know what factors contribute to successful integration and what short term and long term effects should be expected as a consequence of desegregation. Though 43% of biracial southern school districts had begun token desegregation by the fall of 1964, thereby placing one out of every nine Negro southern school children in schools with white southerners

(Southern School News, 1964), there is a notable paucity of research on the factors which contribute to the success of the enterprise. In his recent review of research on school desegregation, Weinberg (1965) concurs in this need for research on both the underlying dynamics that occur as a consequence of desegregation, and the antecedent characteristics of the child, parent, and school which pattern the outcome.

The city of Riverside seems to be a particularly apt choice for a research site on school integration. For one thing, it is de facto, not de jure, segregation which is being terminated. As Pettigrew (1965) points out, while de jure segregation decreases, the problem of de facto segregation is ironically increasing at a rapid rate and will eventually become a problem in the nominally "desegregated" cities of the south. In this respect, it is important to note that terminating de facto segregation may pose some special problems: e.g., bussing children, reducing the role of the school as a socio-cultural focal point in the immediately contiguous community, (the so-called neighborhood school), choice of ratio of minority and white children in classrooms, etc. Secondly, being a city of 125,000, Riverside has much commonality with numerous other cities. As perhaps one index of its typicality, it was chosen as the All-American City in 1955. Thirdly, by fortunate coincidence, Riverside is one of ten communities in which the decisional process and impact of desegregation will be studied from another stance. This other project is currently supported by Office of Education funds and directed by Raymond Mack of Northwestern University.[1] It utilizes a case study and selective interview approach to augment a sociologist's insights into the Riverside situation, and thereby stands in contrast to the large scale empirical data collection we propose. The two types of study of the same community should nicely complement one another.

The most important of the reasons why Riverside presents a unique opportunity, however, is that there was time to make the essential premeasurements before desegregation was implemented. These premeasures are currently being made by a trained field staff of seventy interviewer-testers. The local importance of the proposed research has already been highlighted by the numerous requests for information received by the school administration and the research staff from other California communities in spite of the fact that desegregation itself has not yet been implemented.

2. Related Research

The research program envisaged is perhaps distressingly broad in approach. From each of the three sources of factors seen as contributing to successful integration (parent, child, and school), there is a wealth of variables to be studied, each with its own background of relevant literature. For this reason, it would seem to make more sense to cite literature in connection with specific problems and procedures as they are presented in subsequent sections rather than try to first review "the literature" in a separate section. Since a review is specifically prescribed by the Office of Education Application Instructions, however, some basic sources will be indicated in this section.

One of the most thorough reviews of research on school desegregation has

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1 According to Professor Mack, Robert York is the person at the U. S. Office of Education who is most directly familiar with this project.

been prepared by Weinberg (1965). Katz' (1964) fine article on the effects of desegregation on Negro performance, wherein he considers factors affecting both emotional as well as intellectual responses, is also an excellent general reference. In addition, however, there are some specific research areas which, though not directly concerned with the effects of desegregation, nevertheless provide what may prove to be fruitful leads. We will now briefly examine some of these areas and in a very general way discuss certain methodological issues.

A fundamental notion behind the impetus to end segregation is the hope that Negro and Mexican-American children who currently show little interest and poor performance in academic settings will internalize those values and attitudes that characterize the striving white child.[2] Those advocating integration hope to promote internalization of middle class values through sheer contact and exposure. It seems important, however, to consider the factors that might lead the minority child to respond positively to the new school setting. Home and personality characteristics seem particularly crucial. Performance is more likely to blossom when parental values previously seed the child's personality with kernels of achievement. The vast literature on the familial antecedents of achievement motivation by McClelland and his co-workers (1961); McClelland, Atkinson, Clark, and Lowell (1953), is extremely relevant. So, too, is work by Bronfenbrenner (1961) on the antecedents of leadership and responsibility in the school, and also the work by Sears and his co-workers (Sears, 1960; Sears, Maccoby, and Levin, 1957) and Aronfreed (1961) on the socialization antecedents of the middle class value structure. Clearly, however, it is the germ of achievement motivation in the child that is more directly relevant to performance than the mere presence or absence of the parental behaviors which are typically thought to induce it. Achievement motivation must therefore be examined directly as a personality trait of the child.

There are a number of other traits which should also predict a differential response to integration. In contrast to achievement motivation, however, there are some traits for which little is known about the parental behaviors which produce them. To this extent, they too must of course be studied directly in the child. Some additional traits which are adjudged important, along with references presenting some of the relevant research are: anxiety, (Katz, 1964 ; Sarason, 1960), closemindedness (Rokeach, 1960), need for social approval (Crowne and Marlowe, 1960; Marlowe and Crowne, 1961; Miller, Doob, Butler and Marlowe, 1965), tolerance for delay of gratification (Mischel, 1958; Mischel, 1961a; Mischel, 1961b; Mischel, 1961c), and aggression (Berkowitz, 1962; Buss, 1961). The Handbook of Research Methods in Child Development (Mussen, 1960) which is useful as a general reference for measurement techniques appropriate for each age level, suggests that some of these traits (e.g., closemindedness, need for social approval) cannot be measured with the standard techniques used on adults. Thus other techniques more appropriate for children must be employed.

Certain methodological problems stem from the necessity of relying on a correlational design. Discussions of problems in making causal inferences from correlational research are found in the work of Campbell (1961a) and Campbell (in press); Campbell and Stanley, (1963), and Blalock (1964).

2 These motivational differences no doubt, reflect a social class problem which is a racial problem only to the extent of the high correlation between race and class.

3. Hypotheses

Within the three broad sectors of inquiry already suggested (child, parent, and school) a somewhat shotgun approach must frankly be acknowledged. This is dictated by the lack of substantial research specifically concerned with evaluating the effects of school integration on academic performance, the very restricted opportunity for experimental manipulation of variables, and the vast array of variables which appear to be relevant. Though some hypotheses have been hinted at in the preceding section, they will be listed below in more detail. In many instances too little is known to permit any guess at direction of effect; instead, one can only surmise that a variable will be relevant though its effect awaits discovery.

In general, all factors interfering with or reducing emotional adjustment should also have debilitating effects on academic performance. It has been shown, for example, that anxiety, which can be viewed as one index of adjustment, partially mediates performance on intellectual tasks (Katz, 1964; Spence, 1963). It will be important to discover if there are some dimensions of emotional response (or adjustment) which in fact do not affect academic performance. For the present, however, we assume that the two are related in this way. Therefore, hypotheses regarding social-emotional factors will not be restated in parallel form for academic performance.

Immediate Effects on Children

Minority Children. Speaking in a general sense, desegregation will be disruptive and threatening to minority group members. Some social-friendship ties are likely to be destroyed. The possibility that new friends and patterns of interaction may have to be established will tend to arouse anxiety. Objectively, the minority members will be embedded in a more competitive environment in that at present there are true performance differences in the direction of Negro and Mexican-American inferiority. Furthermore, these differences, which are typically exaggerated in stereotypes, are often internalized by the minority member even though such internalization is self-denigrating (Merton, 1957; Lewin, 1948; Clark and Clark, 1958). Radke, Sutherland and Rosenberg (1950) note evidence of self-rejection by Negro children in an integrated school containing approximately 15% Negroes. Bettelheim and Janowitz (1964) concur in this expectation of stress and explicitly suggest that self-rejection may be increased by transferring Negro children from one school to another in an attempt to achieve racial balance. Experimental evidence indicates that a low self ability estimate will lead to derogation of one's own behavior (Gerard, Blevans, & Malcom, 1964).

1. Integration will have a more debilitating effect on those minority members who are (a) high in anxiety; (b) low in self-esteem; (c) low in intelligence; (d) low in achievement motivation; (e) low in socio-economic class.

2. It is difficult to anticipate the effect of integration on minority students at the opposite end of the distribution on the above variables. Initially, integration ay well have a disruptive effect on them, too, but their recovery may occur more rapidly. On the other hand, there may be no disruptive effects but instead, increased feelings of self-worth, happiness, and acceptance.

3. All of the above effects should interact with age. In other words, they should be more pronounced in older children since the discrepancy in performance between minority and white children increases with age.

4. In general, girls are more compliant (Campbell, 1961) and therefore more likely to be rewarded in the school setting. Therefore, all of the above effects should also interact with sex. Being less conforming, and therefore receiving less reinforcement from teachers in the new setting, males should find integration more disruptive.

5. The same argument underlies the prediction that those lower in need for social reinforcement or approval (Crowne and Marlowe, 1964) should find the new setting more disturbing. Those high in this need orient toward the external situation for cues to guide their behavior; they adapt to situational demands, (Miller, Doob, Butler, & Marlowe, 1965). They are inclined to seek reinforcement (and indeed obtain it) by providing cues and reinforcements for others. In contrast, those low in this trait should be less adjustive and as a consequence receive less reinforcement. This, in turn, should make the entire school scene more negative to them.

6. There may be a number of children whose depressed academic performance simply manifests compliance to the dominant peer group value structure in the lower class school. Coleman (1962) has documented the pervasive and debilitating effects of peer group conformity. Vulnerability to peer pressures may therefore qualify predictions of adjustment and achievement. The direction of the relation should depend upon which particular peer group a child joins. If, for example, the child is sociometrically embedded in a well defined subgroup of minority children within the new classroom situation and is particularly vulnerable to peer pressure, we might expect little or no beneficial effects on achievement attitudes. If, on the other hand, the minority child is integrated within a middle-class white subgroup, we might expect a stronger orientation toward achievement. Gerard (1961, 1965) has identified attitudinal and physiological correlates of conformity to and deviation from peer group pressure. The anxiety induced by the new situation may result in greater dependency upon the peer group (Schachter, 1959; Gerard and Rabbie, 1961; Gerard, 1963).

7. As indicated, the new classroom situation is likely to be disruptive, at least initially. Furthermore, the disruption will in part consist of a considerable degree of conflict between established values and behavior patterns and new middle-class ones. The child's ability to confront and deal directly with this conflict may predict the success of integration. To the extent that the minority child possesses a good deal of inner-directed self-reliance he may weather this disruption more comfortably.

8. It is expected that there will be substantial variability in outcome not only between schools within the system, but also, between classrooms within a single school as well. For those who are optimistic about the success of integration, this expectation will hopefully turn out to be true, in that there is a kind of millennialism hidden in the extent to which the child's personality or the values and behavior of the parents control the variance in outcome. Some of the important school features may be (a) attitude of the teacher toward minority members, (b) permissiveness of the teacher, (c) the permeability of the friendship structure in the receiving classroom, (d) the proportion of minority and majority members, (e) the extent to which there is homogeneous ability grouping, (f) the social class of the white children in the school or classroom, and (g) age-grade level.

White Children. It is more difficult to anticipate the effects of integration on the emotional adjustment of white children. Some tentative notions are presented below.

1. For those who are anxious, low in self-esteem, "underachievers," or social isolates, the addition of children believed to perform poorly (minority members) should reduce anxiety by apparently providing a new lower anchor (Bieri, Atkins, Briar, Leaman, Miller, and Tripodi, 1966; Katz, 1964).

2. Such effects would be more pronounced among older white children. For them, the stereotype of the poorer performing Negro student is more firmly internalized. Likewise their own anxiety and self-doubts are likely to be more vivid to themselves or stronger, even if well-defended against (Cattell, 1965).

Delayed Effects on Children

1. As indicated in a previous section, one major argument for integration, and one that is often advanced most strongly by minority members themselves, is that exposure and interaction with middle class white students will enable minority students to assimilate the achievement motivation and value structure that is characteristically absent among lower class groups. Such changes, if they do occur, would take time and could only be expected to appear after several years of interaction in the new environment.

2. Controlling length of time in an integrated school, such effects are more likely to occur in children who are youngest at the initiation of integration. Knobloch and Pasamanick (1958, 1960) report that differences between Negro and white children, though undetectable at 40 weeks, begin to be dramatic by age three. These data suggest that remedial attempts should be initiated even prior to normal kindergarten age. There are some suggestions, however, that age eight is crucial for the development of achievement motivation (McClelland, 1961). In conjunction with these findings, it has been noted that the difference between Negro and white school performance seems to appear most markedly in the third grade where children are approximately eight years old (Kennedy, 1963). Thus, favorable prospects for young school children may indeed be more forseeable.

3. If changes in achievement motivation are indeed detected, we should also find changes in tolerance for delayed reward. Mischel (1958, 1961a, 1961b, 1961c), cites tolerance for delayed gratification as one of the important features distinguishing middle class value structure from lower class. Perhaps a more important consideration from our own view is that it can be readily measured in very young children whereas there is some question concerning the reliability and validity of achievement motivation measures that have been developed for the very young school child (Bronfenbrenner and Ricciuti, 1960).

4. Another related variable is level of aspiration. Those high in achievement motivation tend to set moderate aspiration levels whereas those with low achievement set either inordinately stringent standards which they cannot hope to meet, or on the other hand, extremely lax standards. A moderate level of aspiration is more likely to be associated with classroom success (Atkinson, 1964; Feather, 1961).

5. If new values are to be assimilated, there are several obviously relevant school factors. These have been mentioned in the preceding section as determinants of immediate stress induced by the new setting, but these same factors can be expected to bear on long term outcomes as well.

6. Family factors might pinpoint the children in whom high achievement needs are most likely to develop: those with upwardly mobile parents, who are high in need achievement themselves, who clearly display interest and concern with the child's activities and progress in school. In accounting for the minority child's response to the new school environment, it may be particularly

important to ascertain some of the details of family interaction patterns. McClelland (1961), Bronfenbrenner (1961), Winterbottom, (1958), Rosen and D'Andrade (1959) and others have depicted to some extent the type of family interaction pattern associated with high achievement in children. In the light of some of this literature, it would seem that the more dominant position of the Negro mother in conjunction with her typically warm and affective role should be conducive to the development of high achievement motivation. Yet, curiously, such needs do not develop in their offspring.

7. Related to this problem is the possibility that acceptance into the white community, even if the gesture is more of a token than a reality, may nevertheless modify the child rearing behavior of the minority parent. Such effects would be difficult to extricate from the effects of history per se. If they do occur, attention to the community structure suggests that it is less likely in the Mexican-American minority group.

8. The second important arena for long term effects is attitude toward outgroup members. Clearly, a major impetus for integration is the hope for a reduction of ethnocentric hostility. An overwhelming array of data suggests that desegregation will indeed create more favorable attitudes, though Weinberg (1965) does report an occasional instance where it had the opposite effect. Desegregation provides the basis for interaction between minority and majority group members. The proposition that interaction results in friendship is one of the central propositions in Homan's (1961) theory of group behavior. More specifically, the army studies (Star, Williams, and Stouffer, 1958) showed more favorable attitudes toward Negroes after integration even among those initially opposed; among white merchant marines, the number of voyages with Negro seamen was directly related to favorable attitudes toward Negroes (Brophy, 1945); studies of integrated housing show increased favorability of attitude even in those living in separate but adjacent housing units as well as those in the truly integrated units (Deutsch and Collins, 1958); likewise, studies of racially integrated summer camps show more favorable attitudes (along with increased emotionality) as resulting from a brief eight weeks of interaction (Yarrow, Campbell, and Yarrow, 1958). While there are undoubtedly personality variables associated with individual differences in prejudice, recent research (e.g. Pettigrew, 1961; Rokeach, 1960; Rokeach & Mezei, 1966) suggests that personality variables are less important than they were thought to be a few decades ago (Adorno, Frenkel-Brunswik, Levinson and Sanford, 1950). It is now thought that in many instances prejudicial attitudes are merely a correlate of the factual, institutionalized separation of races--a conformity to the objectively observable distinction in the social system between races and a conformity to existing community norms (Pettigrew, 1961). The recent work of Rokeach & Mezei, 1966; and Stein, Hardyck, and Smith (1965), suggests that similarity or dissimilarity in belief system (rather than race) is a more potent contributor to attitude. Sherif's (1961) field studies with well-adjusted eleven-year-olds suggests that when joint interaction between groups with initially negative attitudes toward each other is initiated against some external threat, the formerly negative attitudes become more favorable. This suggests for instance, that athletic competition between teams comprised of different racial groups will disrupt the typical coordination of attitude and racial membership. The goal for those intent on remedial restructuring of social attitudes should not be to eliminate expression of hostility but rather, to devise ways of eliminating its coordination with racial boundaries. The extent to which individual schools succeed in eliminating this correlation should predict changes in

attitude and exaggerated stereotype. Some of the important school factors include individual differences in teacher attitudes, the extent to which there is homogeneous grouping within the classroom according to ability, the extent to which the social class membership of the several racial groups is homogeneous within race and variable between races, the permeability of existing clique structures prior to integration, and the ratio of minority to majority members. Of course, parent attitudes and numerous other family factors will nevertheless importantly determine the intractibility of negative attitudes toward outgroup members.

Effects on Parents

While the study primarily focuses on the impact of desegregation upon the child, parents too may change. This may be more true for the minority parents, particularly the Mexican-Americans who have remained isolated and actively resist assimilation into the mainstream culture. On the other hand, at this point in history, the Negro actively seeks avenues toward upward social mobility. From this standpoint, introjection of middle class values, orientations, and aspirations may have greater impact on the Negro adult than the Mexican-American adult. For white parents, the consequence of increased interaction between their own children and minority children merits study. Hopefully, attitudes of greater tolerance and understanding for customs, beliefs, and ways different from one's own will develop in the children and perhaps to some smaller extent be transmitted to their parents as well. If any of these changes in parents do indeed occur, they would certainly be delayed effectswhich would only appear several years after the implementation of desegregation.

While specific effects are difficult to foresee, it seems appropriate to look at such family factors as degree of assimilation of middle class values, degree of structural integration into the community, attitudes toward desegregation and minority groups, patterning of authority within the family, and attitudes toward child rearing.

Summary

Dependent Variables. The post-desegregation characteristics of the child which will be studied as dependent variables are academic achievement, intellectual ability, peer group interaction, attitude toward the outgroup, feelings about the self, emotional adjustment, achievement motivation, and level of aspiration. Parental values, attitudes, aspirations, interaction patterns, and involvement in community activity will also be studied as dependent variables.

Independent Variables. In addition to the desegregation experience itself, five other types of independent variables will be explored.

1. Pre-desegregation characteristics of the child: It is hypothesized that children will respond differentially to desegregation and that significant predictive variables will be age, sex, and pre-desegregation academic achievement, intelligence, level of anxiety emotional adjustment, and personality characteristics.

2. Characteristics of the home: It is hypothesized that the child's responses to desegregation will be mediated by the socio-economic status and style of life in his home, the cultural and structural characteristics of his

family, the attitudes of his parents toward desegregation and toward the outgroup, the values and aspirations of his parents for him, and the child rearing patterns practiced by the family.

3. Characteristics of the peer group interaction: It is hypothesized that the level and nature of a child's relations with his peer groups before desegregation and the extent to which he is influenced by peer group norms will be related to his post-desegregation behavior.

4. Characteristics of the school environment: The post-desegregation school environment will be evaluated as an independent variable influencing a child's response to desegregation. The study will focus on certain personality characteristics of teachers and on such structural variables as the size, ethnic composition, and socio-cultural characteristics of the student body.

5. Impact of the "barrio" environment: The impact of the "barrio" as an independent variable influencing response to desegregation will be studied by examining the differential response of two types of Mexican-American children to the desegregation experience. One group, living in the "barrio," is isolated from the larger community and has intensely resisted assimilation. The other group is somewhat more integrated into the larger community and is less clearly lower class. The next section presents a more thorough description of the differences between these two Mexican-American groups.

B. PROCEDURE

1. Background

The background and natural events of the Riverside situation dictate the research design. Historically, the Riverside School District favored the development of the neighborhood elementary school. Because of a high degree of residential segregation in the community, this policy fostered the development of three de facto segregated schools consisting entirely of Negro and Mexican-American children.

These three schools represent quite different situations. Irving and Lowell schools are on the East Side of town within a few blocks of each other. They are located in the "zone of transition", the area of deterioration which tends to develop just outside the central loop zone of a city. The population of the community served by Irving consists of 49.6% Negroes and 50.4% Mexican-Americans, while that served by Lowell consists of 61.5% Negroes and 34% Mexican-Americans. Negro families are mainly migrants since World War II, as shown by the fact that 60% of the Negro heads of household were born in the South. The Mexican-Americans in these communities are the more upwardly mobile and more assimilated members of that population. They contrast vividly with those in Casa Blanca, the third segregated community.

Casa Blanca is a Mexican-American community in a southern section of town several miles from the downtown shopping center. Its history extends over several generations beginning with a settlement of migrant workers and their families near a citrus packing plant. A tradition of separatism and insulation from the white community emphasizes the preservation of the Mexican culture and the Spanish language. Over 50% of the families speak Spanish at home. The community is best characterized as a "barrio" whose central institution has been the Casa Blanca school. Under the benevolent "patroonship" of the school principal who served as community mediator in all conflicts with the larger community and as father and protector to those in need, the community has maintained its identity. In recent years a few Negro families have moved to the fringes of the Casa Blanca community because housing was inexpensive and available, but many of these families have elected to send their children to schools other than Casa Blanca. Currently the school population is overwhelmingly Mexican-American. The median education of adults over 25 in the "barrio" is 7.7 years and the area has the lowest average incomes of any section in the city.

Three years ago, the Riverside School District implemented a program of compensatory education for the three minority schools. This program, however, was rejected by a group from the East Side. These parents were mainly Negroes. They felt that compensatory education was too slow and would not solve the problems of their children as effectively as total and immediate desegregation. They petitioned the school board for total desegregation and threatened to boycott the public schools at the opening of school in September, 1965, if their demands were not met. On October 25, 1965, the School Board of the District made a historic decision to phase out two minority group schools and gerrymander the district of the third minority school. This decision was the culmination of the five years of agitation by the Negro community and the work by the School Board to determine if integration was feasible. (The Mexican-Americans typically remained relatively silent about the segregation issue.)

A successful arson attempt on one of the minority schools precipitated the decision to desegregate. Faced with the problem of not having classrooms for the kindergarten through third grade pupils in that school, the School Board made an interim decision to bus these children out of that area into neighboring "all-white" schools. At an open meeting in September, 1965, the Board committed itself to develop a plan for complete integration. This decision was a consequence of a very articulate group of younger minority parents and the happenstance of a liberal Board. In the face of some vigorous protest from a sizeable segment of the white community they decided to desegregate the schools. A honeymoon atmosphere now surrounds the relationship between the School Board and the Negro and Mexican-American communities. Both the School Board and the school administration are thoroughly and publicly committed to evaluating the effects of the program.

Characteristically, the Mexican-American parents in the Casa Blanca district were not active in the boycott nor were they favorable to the idea of desegregation. In April, 1966, the school board decided to only desegregate approximately half the Casa Blanca students. While this complicates the sample, it provides about 200 students who will continue in segregated schools for an undetermined number of additional years and makes other types of analysis possible which were not envisaged in the original design. Because of the community resistance to assimilation, children from the Casa Blanca "barrio" represent a special case of children who come from homes which do not seek entry into the white society but instead wish to preserve their identity as a sub-culture. This is not a rare case in the Southwest. Furthermore, ethnic groups with similar resistance to cultural assimilation exist in numerous major cities. It can be anticipated that the response of these Casa Blanca children and their families to desegregation will differ significantly from that of the Negroes and Mexican-Americans on the East Side.

2. Sample

The basic research design is a longitudinal study of those children in kindergarten through sixth grade during the school year 1965-6, who will experience desegregation in September, 1966. It is a "natural time series experiment" of the "before and after" type, with multiple "after" measures extending over time. "Before" measures will be taken on children, families, and teachers, during the spring and summer of 1966 and "after" measures will be taken in the spring and summer of 1967 and at regular intervals thereafter. Hopefully, the study can be extended eventually to follow the entire sample through the public school system and into adult life, although such long-term plans seem out of place at the present time.

The proposed study examines the short and long term effects of desegregation on five groups of kindergarten through sixth grade children:

1&2. Negro and Mexican-American children from de facto segregated schools attending predominantly white schools for the first time. (617 children).

3. Mexican-American children from a "barrio" community (Casa Blanca) attending predominantly white schools for the first time. (355 children).

4. White children in the receiving schools associating with relatively large numbers of Negro and Mexican-American children for the first time. (698 children).

5. Negro and Mexican-American children who have been attending predominantly white schools and now attend the receiving schools. They will experience the impact of having larger number of other Negro and Mexican children in

the school with them for the first time (55 children).

Table 1 presents the sampling frame and contains the numbers of children expected to fall into each category. The basic analytic groups are as described above. As can be seen from Table 1, 360 minority children from Lowell and Irving, and 355 minority children from Casa Blanca will be desegregated for the first time in September, 1966. These are titled the "sending schools" in the table. In addition, 257 minority children from Lowell and Irving who were desegregated in September, 1965, will have already experienced one year of desegregation at the onset of the study. They will have to be analyzed on this basis.

According to the present vacancy pattern, eleven schools will receive the children being reassigned from Lowell and Irving schools. On the basis of known vacancies in classes, the school district staff projected the number of minority group children who will be assigned to each grade in each receiving school. The sample design called for selecting, at random, a number of white children from each grade in each receiving school equal to the number of minority children assigned to that grade in that school. Consequently, 698 white children matched for grade and school with the minority group children have been selected for study.

In addition, 55 minority group children from two of the receiving schools, Adams and Jackson, have been selected for the study of the impact of desegregation on minority group children already attending predominantly white schools.

Table 2 gives a breakdown of the sample by ethnic group. Of the 1736 children involved, 41% are white, 36% Mexican and 23% Negro The table also gives a parallel breakdown for the 1233 families involved.

3. Design

Table 3 schematically presents the basic design for the study of the child. The present Lowell and Irving kindergarten children (S_0 in the table), who were desegregated in September, 1965, represent the group of children who will have always been desegregated and thus become the criterion group exemplifying total desegregation. Children from Casa Blanca kindergarten were not desegregated in 1965 and provide a group of children segregated for one year and desegregated for six. They are indicated as S_1.

The present Lowell and Irving kindergarten students (S_0) are followed through first, second, third, etc. grades. Their performance will be compared with the performance of other groups when they were at that particular grade level and it will be possible to examine differences presumably related to their not having experienced segregation. For example, in 1967, the 1967 performance of the present kindergarten classes (S_0) can be compared with the 1966 performance of what is now the present first grade (S_2) to see what increment or decrement in performance the kindergarten children have experienced as a result of their differential experience with segregation.

At the other end of the structure, the present sixth grade (segregated seven years, S_7) will never experience desegregation in elementary school and their performance on measurements given in 1966 will serve as the baseline for comparison

TABLE 1

SAMPLING FRAME
RIVERSIDE DESEGREGATION STUDY

Minorities from Sending Schools	Grade (Spring, 1966) K	1	2	3	4	5	6	Sub-Total	Total
Lowell and Irving (Desegregation, 1965)	99	61	49	43	4	1	0	257	
Lowell (Desegregation, 1966)	0	0	0	0	47	30	28	104	
Irving	0	89	38	45	26	43	15	256	
Casa Blanca	68	63	63	48	40	42	31	355	
Sending Minority Total									972
White in Receiving Schools									
Adams	11	18	11	13	12	3	7	75	
Alcott	13	11	11	15	18	4	14	86	
Bryant	7	12	3	4	5	7	3	41	
Jackson	6	13	5	6	8	7	4	49	
Jefferson	9	13	8	3	12	3	7	55	
Liberty	5	7	1	5	5	6	9	38	
Magnolia	10	19	11	12	14	4	12	82	
Monroe	15	30	10	15	3	14	11	98	
Pachappa	13	15	7	14	13	11	7	80	
Palm	8	9	9	9	8	8	4	55	
Victoria	8	15	10	5	5	2	7	52	
White Total	105	162	86	101	103	69	85		711
Minorities in Receiving Schools									
Adams	3	6	8	4	6	7	2	36	
Jackson	5	4	1	2	2	1	2	17	
Receiving Minority Total									53
Children									1736

TABLE 2

SAMPLE CHILDREN AND THEIR FAMILIES BY ETHNIC GROUP

Sample Children	f	%
White	712	41
Mexican	622	36
Negro	395	23
Other	7	0
Total	1736	
Sample Families		
Anglo	668	55
Mexican	318	25
Negro	241	20
Other	6	0
Total	1233	

TABLE 3

SCHEMATIC DIAGRAM OF THE LONGITUDINAL RESEARCH DESIGN*
(Grade Location of Seven Groups at Seven Points in Time)

Time Dimension	Grade (Spring, 1966)													
	Lowell & Irving K	Casa Blanca K	1	2	3	4	5	6	7	8	9	10	11	12
Retrospective Data 1965 & Before			'65	'64-'65	'63-'65	'62-'65	'61-'65	'60-'65						
Pre-Desegregation 1966	S_0	S_1	S_2	S_3	S_4	S_5	S_6	S_7						
Post-Desegregation 1967		S_0	S_1	S_2	S_3	S_4	S_5	S_6	S_7					
1968			S_0	S_1	S_2	S_3	S_4	S_5	S_6	S_7				
1969				S_0	S_1	S_2	S_3	S_4	S_5	S_6	S_7			
1970					S_0	S_1	S_2	S_3	S_4	S_5	S_6	S_7		
1971						S_0	S_1	S_2	S_3	S_4	S_5	S_6	S_7	
1972							S_0	S_1	S_2	S_3	S_4	S_5	S_6	S_7

* S_7=Segregated 7 years, S_6=Segregated 6 years, S_5=Segregated 5 years, S_4=Segregated 4 years, S_3=Segregated 3 years, S_2=Segregated 2 years, S_1=Segregated 1 year, S_0=Segregated 0 years. School policy has already desegregated the Lowell and Irving kindergarten children. Consequently they provide the study with a group always desegregated. The Casa Blanca kindergarten has not been desegregated and this provides a group desegregated one year.

with other grade groups as they reach sixth grade level. Thus, the proposed research design has several strengths. The before and after design means that each age group can be compared with its own past performance. Thus, changes in a single child can be assessed by measures before and then again after desegregation. Secondly, by comparing groups who have experienced different amounts of segregation and desegregation in their school experience as they reach equivalent grade levels, it will be possible to isolate the extent to which length of exposure to desegregation has an impact on performance. Thirdly, it will be possible to identify critical ages at which desegregation may have a greater or lesser influence on the child's behavior.

On first inspection, the design appears to suffer from the weakness of any type of "before and after" experiment that lacks a control group. The absence of a control group makes it more difficult but not impossible to isolate the extent to which changes in the children's behavior over time is a result of events extraneous to the school system and desegregation. Since our entire society is in the midst of rapid change in inter-racial policy and attitudes, these societal changes will undoubtedly produce changes in each child's behavior quite apart from those specifically produced by the school. Nevertheless, by selecting children who have experienced similar amounts of desegregation but at different historic periods, it may be possible to estimate the amount of change resulting from the desegregation experience and the amount attributable to changes in the larger society.

In addition to data which will be collected in interviews with the child, his parents, and his teachers, another important source of data may permit a more direct evaluation of the effects of history per se. School records constitute a data source for investigating the child's prior performance on achievement tests, his prior grades in school, and his prior behavior as reported by his former teachers. Furthermore, the average performance of minority and majority children at every grade level can also be assessed from school records. It is important to note that, in addition to extending data on achievement backward over time, these records do the same for emotional adjustment. A variety of permanent record entries such as teacher evaluations, absences, tardiness, etc. can be converted to adjustment indices. Thus, the time dimension for the study extends both backwards and forwards from 1966. If, as we suspect, attitudes and emotional adjustment mediate scholastic achievement, this retrospective nature of the data provides a foothold for estimating the extent to which general socio-cultural events extrinsic to Riverside itself contribute to any observed improvements in academic performance. The slope of time series measures after the implementation of desegregation can be evaluated against the slope observed in the preceding years. This comparison extricates the effects of both the general socio-cultural climate of the time and the effects of repeated post-measurements on the same children. Toward this aim, we have persuaded the school system to retain the standard achievement measures that have been in use prior to the onset of the study. Even though the scheduled expansion of the school achievement testing program will provide a more detailed set of measurements, standard instruments administered during the preceding ten years will be retained during the next ten.

Another tool for more directly evaluating the effect of contemporary socio-cultural events on attitudes is the use of the "non-comparable control group." There are several such groups available. One is the San Bernardino school system, which, like Riverside, also has de facto segregation. Unlike Riverside, however, San Bernardino appears headed toward compensatory educational programs rather than

desegregation. Two other school districts adjoining Riverside on the west side of town are Alvord and Rubidoux. They appear even more preferable in that neither has been confronted with any minority agitation regarding de facto segregation. An additional alternative consists of those white children in the Riverside system who have not been included in the study. A periodic attitude measure on separate samples comparable to our basic sample in sex and grade will substantially add to our efforts to directly assess general societal changes in inter-racial attitude. Furthermore, such measurements administered once to each group will be free from effects due to the repeated testing scheduled for our basic sample. Furthermore, measurements on samples from other communities will not contain bias arising from any sensitizing impact of the study itself on the Riverside community. Final decision on the choice among these alternative additional groups has not been made. One of these other school districts, however, has already contacted the project and expressed interest in becoming involved in the study.

A second unavoidable problem in the design of all longitudinal studies, is the problem of attrition. Twenty-five per cent of the residents of Southern California change residence every year. Such geographic mobility will rapidly deplete the original sample of any longitudinal study projected to extend over a long time span. On the basis of the past experience of the school district, it is estimated that only 60% of the kindergarten children in the original sample will still be available for study by the time they reach 12th grade. Mexican-American families are notably less mobile than either white or Negro families, but this population has a higher school drop-out rate which will produce significant losses from that portion of the sample.

Two methods will be used to estimate the amount of bias introduced into the study by losses from attrition. A vast amount of data on all children selected for study will result from the initial testing and interviewing and from previous school records. This will allow assessment of the characteristics of children lost to the study because of mobility. The extent of probable bias introduced into findings because these children were not available for further testing can then be estimated. Secondly, an attempt will be made to follow up a selected sub-sample of the missing children and in this fashion determine the reasons for losses--geographic mobility, school drop-out, death, illness, and so forth. It was because of this anticipated attrition that it was decided to select a large initial sample of children which would, hopefully, provide sufficient numbers of children for study through 1972 and perhaps beyond.

4. Instrumentation and Data Collection

Premeasures

Data for the "before" phase of the study of the individual child is now being secured from four sources: two hour-long interview and testing sessions with each child; sociometric ratings from the pre-desegregation classroom; behavioral ratings by the pre-desegregation teacher; and an interview with each of the child's parents. Though this proposal requests no support for the development of these measures or for their initial administration, it is important to describe them in detail since they constitute the basic premeasures of the study. Furthermore, apart from school-administered measures of academic achievement, these same instruments and procedures will comprise the subsequent dependent measures. Therefore each of the five operations will separately be described in some detail.

Interview and Testing Session with The Child.[1] The schools agreed to release each child in the sample for two fifty-minute periods of interviewing and testing during the spring semester, 1966. Upper division undergraduate and graduate students from the University of California, Riverside, who had been recommended as especially capable by their teachers and who underwent special training and practice in preparation for the sessions conducted the interviews. Spanish speaking interviewers have been employed for work in the Casa Blanca district.

In schools with a large number of children involved in the study, the interviewers tested children in trailers leased by the project and parked on the school yard. In schools with fewer children, interviewing was conducted in rooms made available by the principal.

In this section the individual variables measured will be listed. The specific measures for each will be indicated by reference to the relevant items in the appended interview schedules or by reference to published tests.

Children's first interview (see Appendix A):

1. School attitude (questions 1 through 5): These items secure a rating of positive and negative attitudes toward school and extent of acquaintance with school personnel. The interviewer obtained this information while walking to the testing center.
2. Tolerance for delayed gratification (question 6).
3. Interests and aspirations (questions 7 through 20): These items tap educational and occupational aspirations of the child and the child's perception of the parents' aspirations for him.
4. School involvement (questions 21 through 27): These measures pursue the child's self-perceived role in the school and classroom situation. In addition, they tap differences between perceived and desired role.
5. Level of aspiration (questions 28 through 37): These items measure level of aspiration using standard ring toss procedures. Two measures will be derived: how difficult the child makes the task and how realistic is his performance expectation.
6. Ethnic attitudes (questions 38 through 50): Using a rank ordering of six pictures of ethnically different children, these items measure ethnic attitudes and ethnic preference. Dimensions used for ranking were selected from Osgood's work on the semantic differential. This measure will provide data on the development of stereotypes and on the respondent's own racial identification.
7. Supplemental CAT (questions 51 through 56): Projective measurement of the child's response to pictures from Supplement to the Children's Apperception Test were taped so that they may be used in a variety of different ways. Besides story content and dialect, speech disruption will also be coded. This provides a good anxiety measure (Mahl, 1956). In addition to providing a general measure of adjustment, content can be scored for achievement motivation, and other specific motives such as fear of failure, and affiliation, etc.
8. Man in frame test (questions 57 through 68): This is an adaptation of a technique devised to measure degree of self-reliance (Witkin, Lewis, Machover, Meissner, & Wapner, 1954). It consists of a standard "rod and frame" task in which a "man" is substituted for the rod (see schedule for a description of the apparatus).
9. Behavior ratings (questions 69 through 89): Interviewers record their impressions.
10. Draw a man test: The child does a standard draw-a-man task which was introduced as "busy work" to allow time for the interviewer to make the behavior ratings. These pictures will be scored for IQ and other variables as they appear relevant (Machover, 1951).

[1] See Appendix H for procedures used in securing the informed consent of parents.

Children's second interview (see Appendix B):

1. Sensitivity to social approval or reinforcement (items 8a-10): These consist of a second set of Children's Apperception Test cards on which the interviewer differentially provides reinforcement for story-telling. The major dependent measure is the length of story after reinforcement. The story to the first card or the average story length to the CAT cards in the previous schedule provide baselines for evaluating the reinforcement effects. In addition, however, these protocols can also be scored for emotional adjustment and specific social motives.

2. Self-image (question 11): This item is concerned with how the child sees himself.

3. Tolerance for conflict or dissonance (question 12 on page 15): This measure examines the extent to which a non-preferred toy receives an inflated rating after it is given to a child. Length of decision time is also recorded.

4. Raven progressive matrices (question 13): Though access to all of the school records for both intelligence and achievement test scores is assured, it seemed wise to administer a few standard measures of intelligence to all age-grade levels. The Raven test has been considered a more "culture fair" instrument than those ordinarily administered though Jensen (1959) casts come doubt on the issue

5. Direct personality measures: Likert items include direct measures of school anxiety and general anxiety (Sarason, Davidson, Lighthall, Waite & Ruebush, 1960), self attitudes, attitudes toward others, need for school achievement.

6. Peabody picture vocabulary (pages 6 and 7 of schedule): This provides another measure of intelligence which correlates highly with Stanford Binet IQ scores.

7. Vulnerability to peer pressures (pages 10 and 11): This is an adaptation of the typical laboratory conformity task in which the subject judges the size of objects after exposure to the judgment of others. In this case the child is confronted with a simulated group consensus which is false on some items. This task will measure the child's susceptibility to changing his response when he has knowledge of the group judgment.

8. Indirect school and general adjustment test (page 14): This is a projective test in which the child is asked to indicate how happy or sad various pictured situations make him feel (Bower and Lambert, 1962).

9. Behavior ratings (pages 16, 17, and 18): Interviewers record their impressions. These items are the same as those on the first interview and increase the reliability of the behavior ratings.

10. Draw yourself task: The child is instructed to draw a picture of himself while the interviewer is completing the ratings.

Interviews for children in the fourth through sixth grade were identical with those for children in kindergarten through third with the exceptions of two sets of questions. The dimension of "Achievement Motivation" was added to the dimensions tested in the series of attitudinal questions asked each child. The "Thinking About Yourself" task from the Bower-Lambert study was used for the self-rating (see Appendix C for the schedule for older children).

A staff of approximately 70 persons fulfilled this operation in all schools by the close of the 1966 school year.

Sociometric Measures and Peer Ratings (see Appendix C). The changing role of the child in the classroom as perceived by his peers is one of the most critical variables in the study of the impact of desegregation on the child. Therefore, pre-desegregation data on each sample child was secured by obtaining sociometric

information from each classroom in which one or more sample children were located. A special group of 12 women were recruited to visit all Kindergarten through third grade rooms and get sociometric information by individual questioning of all children in each classroom.

Standard sociometric questions gave the children three choices of persons they would like most to sit next to, to have on their team, and to have as a work partner. In addition, peer ratings were secured using the questions developed by Bower and Lambert. The pictures used by Bower and Lambert were redrawn to present more contemporary looking scenes while retaining their content. These questions will be used, as designed, for a score of emotional adjustment but will also be studied to determine the specific role types for which sample children are selected by their peers.

In classes for children grades four through six, the Class Play series developed by Bower and Lambert were used together with the same sociometric questions used with younger children. These were completed by the children themselves during the regular class hours and administered by the teachers to the children as a group. (See appendix D for the forms).

Teacher Ratings of Student's Behavior (see Appendix E). Each teacher was asked to complete five different types of ratings of each sample child in her class. In special training sessions, each teacher received a kit containing a list of the names of sample children in her class, instructions for teacher behavior rating, and a set of rating scales for each sample child. These scales have been distributed to all teachers and will be returned by July 1, 1966. During the summer, student helpers will score the scales and prepare them for key punching. Arrangements were made to reimburse teachers for time spent in completing the ratings--a total expenditure of approximately $5000. Following is a brief explanation of the measures:

1. Teacher behavior ratings: These were adopted from the Bower and Lambert study for use with self-ratings and peer ratings to give an index of emotional adjustment.
2. Sten rating scales: These are the same scales used by interviewers. They should give some indication of comparability and reliability of ratings.
3. Classroom behavior checklist: These scales were developed by Earl Schaefer of the National Institute of Mental Health. National data and data on comparison groups augment their usefulness.
4. Ratings of involvement in school situations: These questions were developed by the investigators to measure child's behavior in typical school situations.
5. School anxiety scale: This instrument was adapted from the work of Sarason and secures a rating on behavioral manifestations of anxiety as perceived by the teacher.

Interview with parents. (See Appendix F for a sample schedule of items). The final major operation in the pre-desegregation phase of the study of the child and his family is the parent interview. Interview schedules are now being developed. The interview will obtain information on the basic household composition, the assimilation of middle class values and aspirations particularly in respect to educational and occupational goals, structural integration in the community as indicated by a normal profile of roles within the social structure, alienation, attitudes concerning the effect of desegregation on own children and other children, attitudes toward minority members, authority pattern within the family structure, semantic differential ratings of own child, and items from selected subscales of the Parental

Attitudes Research Instrument. Twenty white, twelve Negro, and eight Spanish speaking interviewers have been employed to begin work on June 20th. Advance letters to parents and newspaper publicity will introduce this phase of the field work. Hopefully, most of the interviewing will be completed by the second week in August. The present time schedule calls for all information gathered on the child and his family to be punched on cards and ready for analysis by the end of September, 1966.

Teacher self ratings. (See Appendix G for a proposed schedule of items). These measures on the teachers are proposed for the early fall of 1966. They will provide the following information.

1. Demographic variables, educational achievement, background (pages 1-3).
2. Attitudes toward ethnic groups (questions 34-44): These items ask the teacher to describe the present ethnic compositions of class versus the ideal.
3. Semantic differential ratings (pages 5-7): For each sex of each ethnic group, a typical child is rated on four dimensions: power, activity, favorability, and intelligence (Osgood, et al., 1957).
4. Self rating (page 8): Teachers make self ratings on the same four dimensions as above.
5. Goals (page 8 bottom): Ordering of teacher's educational goals.
6. Direct attitude and personality measures (pages 9-18): These Likert type questions include items from Rokeach's (1960) Dogmastism Scale and Srole's (1962) Anomie Scale, items from selected sub-scales of the Parental Attitudes Research Instrument (PARI) developed by NIMH, and items on attitudes toward school desegregation and poor people.

Achievement. Premeasures on achievement variables, shown in Table 4 are being taken this spring in the primary grades and this fall in the intermediate grades. In addition, achievement data collected in previous years are also available as premeasures.

Postmeasures

The postmeasures consist of the five basic sets of measures described in the preceding pages plus the standard measures of academic achievement administered by the school.

The measures of academic achievement will be administered yearly according to the schedule presented in Table 4. Certain restrictions in tests and testing dates have been recognized in order to meet the requirements of state mandated testing programs. The testing program is designed to give consistent and sequential data on children's reading and arithmetic skills through the primary grades. Repeated administration of the Lorge-Thorndike Intelligence Test will allow for adjustment for bias due to different ability levels. Repeating the testing pattern at the sixth grade will permit evaluation of the same skills after more than two years have elapsed, and will also meet a state requirement. Continuing the regular use of SCAT (School and College Ability Tests) and STEP (Sequential Tests of Educational Progress) at grades four, five, and six will allow for the evaluation of different types of school aptitude and achievement and permit the comparison of such achievement with that of previous years. The city-wide testing program for secondary grades provides for the repetition of these tests at grades eight through twelve. Such data will allow longitudinal study of achievement patterns (see Table 5).

TABLE 4

TESTING PROGRAM - ELEMENTARY
1966-67

Grade	Fall	Spring
Kindergarten		Metropolitan Readiness, Form A
First		Stanford Reading, Pri. I, Form W Lorge-Thorndike, Pri. Level 1, Form A
Second		Stanford Reading Stanford Arithmetic Pri. II, Form W Lorge-Thorndike, Pri. Level 2, Form A
Third		Stanford Reading Stanford Arithmetic Pri. II, Form X Lorge-Thorndike, Pri. Level 2, Form B
Fourth	SCAT, 5B STEP, 4B Listening Reading Mathematics	
Fifth	SCAT (make-ups) 5A STEP, 4A Listening Mathematics Reading Science Social Studies Writing	
Sixth	Stanford Reading Stanford Arithmetic Inter. II, Form W Lorge-Thorndike, Level D, Form 1	SCAT, 4A STEP, 3B Listening Reading Mathematics LANGUAGE PERCEPTION TESTS

TABLE 5

TESTING PROGRAM - JUNIOR HIGH

Grade	Fall	Spring
Eighth	SCAT, 4A STEP, 3A Listening Mathematics Reading Science Social Studies Writing	
Ninth	Differential Aptitude Test	

TESTING PROGRAM - HIGH SCHOOL

Tenth	Test of Academic Progress Reading Lorge-Thorndike Intelligence Tests Verbal and Non-verbal Sections
Twelfth	SCAT, 2A STEP, 2A

The other post-measures will be administered every other year. In off-years, when the basic sample is not being premeasured, these same measures will be administered to selected "non-comparable" control groups (see Campbell, 1961a). As previously indicated, judicious selection of these additional comparison groups will provide a basis for evaluating any sensitizing effects produced by repeated measurements on the basic sample, sensitization effects on the entire Riverside community, and those attitudinal and social class changes occurring over the duration of the study attributable to general socio-cultural events at this time in history. Yet, though extremely valuable, such additional measures only provide gross baselines for assessing the changes occurring in the basic sample. The basic characteristics of this natural field study and the mechanics of staffing and organizing measurements impose these compromises on the design. As indicated by Campbell (1961a), Underwood (1957), and others, no matter how carefully matched, a design using matched controls never attains the precision achieved through true random assignment of a sample to experimental conditions. Furthermore, the administration of measures to the basic sample and the selected controls at different points in time, further complicates interpretation. Nevertheless, the proposed scheduling of measures is adjudged sufficiently adequate and comprehensive to assess the effects that are of interest.

We also propose to keep in close touch with and evaluate the sorts of grouping procedures the teacher uses for the various academic content areas since segregation within the classroom may be much more invidious and devastating than segregation within separate schools. We also plan to take spot checks of the school playgrounds during the free play periods. (Two of these periods typically occur during the normal school day). Such auxilliary substudies of aggregation tendencies might constitute an important behavioral measure of attitudes (Zimbardo, 1966).

In view of the extensive information that will be available on the families participating in the study, a variety of valuable substudies are planned for portions of the sample. Present plans include more extensive, indirect measures of social attitudes on selected subsamples. Determining the relation between verbal and behavioral measures of attitude is important. Other substudies on family interaction patterns are planned. These would include analysis of the type of behavioral control techniques employed by parents of the different subgroups in the sample: Mexican-American, Negro, and white. After some of the initial post-measures are analyzed, interaction patterns of families with high and low achieving minority children can be compared using techniques for studying social interaction such as those developed by Rosen and D'Andrade (1959) and Butler and Miller (1965). The power structure within the family and the preference for reward versus punishment as modes of social control may importantly predict different effects of the desegregation experience on the individual child. We also plan to undertake laboratory studies which would enable us to identify and induce positive and negative self-attitudes. Irwin Katz has agreed to consult with us on the possibilities for experimenting with minority children of different age levels in competitive and cooperative tasks. This would enable us to pinpoint more exactly the "critical period" for the development of self-other attitudes. This would constitute a social developmental cross-ethnic experimental program.

C. USE TO BE MADE OF FINDINGS

These data will be important in several ways. First, the study will provide extensive information on what factors contribute to or detract from a child's emotional stability and achievement following desegregation. The information gained from the study will provide valuable guidelines to other school districts who are attempting to desegregate. It can throw light on both the anticipated and unanticipated consequences of this type of social action. Furthermore, unlike many studies of desegregation which examine only Negro populations, the presence of the large Mexican-American contingent in the study makes it possible to investigate the impact of desegregation on a minority group of critical importance to the Southwest. The present lack of knowledge about this group buttresses the importance of the study. In addition, the inclusion of this second and different minority group importantly adds to the generality or external validity of the findings. Since the sample includes white students as well, it will provide information on the effects on all parties experiencing the desegregation. Finally, knowledge of the factors that produce emotional maladjustment and poor school performance will help the school district in the future to identify the possible causes of problems as they arise. If a particular child is having a problem the schools may be able to run down some list of likely sources of difficulties in the classroom or home and may in turn be able to take ameliorative action. If, for example, we find that particular types of classroom sociometric configurations lead to difficulties for pupils occupying certain positions, we may be able to solve a particular problem by moving a child out of one classroom and into another. There is a myriad of possible difficulties. By bringing their source into focus we may be able to thus provide guidelines for the school not only for solving problems that may be a direct result of desegregation but for solving problems that arise in <u>any</u> classroom.

A second important aspect of the research is that these data will provide a wealth of fundamental information (1) on basic measures of child personality, development, and performance; (2) their interrelation; (3) the relation of parents' behaviors and attitudes to child behavior; (4) the relation of teachers' behavior and attitudes to child behavior; and (5) the effect of desegregation on parental attitudes and behavior.

These findings will be disseminated as articles appearing in scientific journals which publish fundamental research. Conceivably, they may also appear as a single monograph as well. It seems essential in terms of the needs of the Riverside School Board and community, and perhaps the nation as well, to prepare some more popular or nontechnical form of report. This commitment to prepare some generally available document for lay consumption will not detract, however, from our more basic scientific and scholarly interests in the data.

The eventual additional uses and extension of the data bear consideration. As previously mentioned elsewhere in the proposal, given the wealth of data, its high quality, its richness, and the large sample of respondents, it will be fruitful to extend the study longitudinally so that the more remote long term effects of the desegregation experience can be evaluated. Its eventual impact on adolescence and adulthood in terms of personal values and attitudes, occupational aspirations and achievements, and community participation versus alienation and isolation, are perhaps of even greater long-run concern than the more immediate effects.

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IV. PERSONNEL AND FACILITIES

The facilities available are those to be expected on a University campus. There is office space for the personnel working on the study as well as some additional space for clerks, coders, and typists. There are two new buildings going up on the campus now, a psychology building, and a classroom and office building. Space in these will be available toward the end of the school year. During the early part of the year, however, space will be at a premium. Therefore, we will rent an office trailer for part of next year (There is an item for this in the budget).

We will have the use of our local computing center which has an IBM 7040 with a lot of online and offline facilities. In the event that some of the analysis will require more data storage than is available in a 7040, we will have the facilities at the Western Data Processing Center at UCLA available. Our own local computing center has a direct telephone tie-in to the center at UCLA.

Jane Mercer has had extensive field experience interviewing a large number of parents while working on a study of mental retardates for the Pacific State Hospital and Norman Miller was the research director of Donald Campbell's study of projection which involved a considerable amount of field work. Some years back, Harold Gerard conducted a field study of two Air Force staffs as well as a detailed interview study concerned with the staff experiences of a selected number of Air Force staff officers. Harry Singer has had extensive experience in the construction and administration of achievement tests and has completed a large scale systematic study of achievement in the elementary schools.

Both Norman Miller and Harold Gerard had a great deal of experience conducting laboratory experiments on a variety of social psychological problems.

There are good graduate students in psychology who are interested in working on various phases of the study and it is very likely that a number of dissertations will be written on problems coming out of the research.

VITA

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BIOGRAPHY

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EMPLOYMENT: Research Assistant, Research Associate, 1949-52, University of Michigan; Research Assistant Professor, 1952-54, New York University; Assistant Professor, 1954-55, University of Buffalo; Fulbright Scholar, 1955-56, University of Nijmegen, The Netherlands; Member of Technical Staff, 1956-62, Bell Telephone Laboratories; Professor, 1962-present, University of California, Riverside: U. S. Public Health Service Special Fellow, 1963-64; Fellow Center for Advanced Study in the Behavioral Sciences, 1963-64; Consultant, USPHS 1965; Consultant, Pacific State Hospital, 1965.

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VITA

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BIOGRAPHY

Associate Professor, b. 1933. B.A., 1956, Antioch College; M.S., 1957, Northwestern University; Ph.D., 1959, Northwestern University.

EMPLOYMENT: Teaching Assistant, 1955-57, Northwestern University; Research Assistant, 1957-59, Northwestern University; Instructor, 1958, Northwestern University; Assistant Professor, 1959-65, Yale University; Associate Professor, 1965-present, University of California at Riverside.

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VITA

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BIOGRAPHY

Associate Professor, b. 1925. B. A., 1949, Western Reserve University; M. A., 1952, Western Reserve University; Ph. D., 1960, University of California.

EMPLOYMENT: Teaching Fellow, 1951-52, Western Reserve University; Teacher, 1953-55, Oakland Public Schools; Teacher, 1955-60, University of California, Berkeley, Extension; Certified School Psychologist, Board of Medical Examiners, State of California, 1955-; Lecturer in Education, 1960-61, University of California, Riverside; Assistant Professor of Education and Assistant Director of the Study Skills Program, 1961-62, University of Arizona; Assistant Professor of Education, 1962-, University of California, Riverside; Field Reader, Small Contract Program, Cooperative Research, 1963, Office of Education, Department of Health, Education, and Welfare; Initiated and Consultant to Riverside County Reading Teachers Association, 1963; Director of Elementaty Education, 1964; Associate Professor of Education, 1966, University of California, Riverside.

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A strategy for developing a conceptual response to printed words at the kindergarten level. In J. A. Figurel (Ed.), Proceedings of the Eleventh Annual Reading Conference of the International Reading Association. Newark, Delaware: The International Reading Association, 11, 1966. In press.

STATEMENT ON "CLINICAL RESEARCH AND INVESTIGATION INVOLVING HUMAN BEINGS"

The Chancellor's Office of the University of California, Riverside, has appointed a campus-wide committee to consider each proposed new, renewal, or continuation, or supplemental research or research training grant involving human beings and to provide prior review of the judgment of the principal investigator or program director. This will assure an independent determination:
(1) of the rights and welfare of the individual or individuals involved,
(2) of the appropriateness of the methods used to assure informed consent, and
(3) of the risks and potential medical benefits of the investigation. The Committee will consist of four people. Two of these are senior faculty members from the Departments of Psychology and Physical Education; the others, the Director, Student Health Services, and the Campus Environmental Health and Safety Officer. (Statement dated April 26, 1966 to The Surgeon General, PHS).

Harold B. Gerard

Principal Investigator
Harold B. Gerard, Professor of Psychology

ROBERT R. HEWITT

Institutional Official
Robert R. Hewitt, Associate Dean for Research

Appendix B

Progress Report 1968

Grant No. PHS HD-02863

FACTORS CONTRIBUTING TO ADJUSTMENT AND ACHIEVEMENT

Progress Report

May 1968

Harold B. Gerard

Riverside School Study

University of California

Riverside, California

FACTORS CONTRIBUTING TO ADJUSTMENT AND ACHIEVEMENT IN RACIALLY DESEGREGATED PUBLIC SCHOOLS[1]

Brief Summary of Work Accomplished and in Progress

The goal of this project is to determine the antecedents and concomitants of successful or unsuccessful integration of Negro, Mexican-American, and Anglo children in a public school system. The two major dependent variables under consideration are academic achievement and emotional adjustment. We are analyzing data about the children that have been collected from four different perspectives: the child's parents, his teacher, his classmates, and from evaluation of him made through an extensive test battery.

The general procedure is longitudinal, beginning with premeasurements obtained prior to the implementation of desegregation and successive measurements thereafter. At the present time, we have collected the premeasurement and the first postmeasurement data. The research was conducted in the Riverside Unified School District in Riverside, California, on children who were in Kindergarten through the sixth grade during the school year 1965-66.

PHASE I

Spring and Summer 1966

The initial sample included all of the children attending three segregated minority schools and a random sample of Anglo children attending formerly segregated Anglo schools. The initial sample consisted of 712 Anglo, 651 Mexican-American, and 406 Negro children, and 8 from other ethnic groups.

For the predesegregation measures, each child was tested for two one-hour

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1. This study has received support from the Office of Compensatory Education, State of California (McAteer Funds M5-14, M6-14, and M7-14), the Regents of the University of California, and the Rockefeller Foundation.

sessions by a psychometrist who received specific training to administer the instruments.

The first session proceeded as follows: The psychometrist, after checking with the school office, walked the child from his classroom to the testing room. During this stroll, the psychometrist collected some initial data in the process of establishing rapport with the child. When they arrived in the testing room, the child's ability to delay gratification was tested with a procedure patterned after a measure developed by Mischel (1958). The child was asked to pass up a small pleasure in the present in lieu of a larger pleasure in the future. He was offered a choice of either a small candy bar that he could have immediately, or a larger candy bar that he could have at the end of the interview. Earlier work has shown that children gain in the ability to postpone pleasure as they mature. This ability would appear, on the surface at least, to be a good predictor of school adjustment and academic success.

Several questions followed which attempted to determine the child's academic and vocational aspirations.

Through a series of sketches that were shown to the child, we attempted to determine his self-perceptions. The child's task was to select a figure in each picture that he thought represented his role. He then chose the figure he would most like to be. These choices permit comparison with similar role choices made for him by his teacher and by his peers.

He then played a simple ring-toss game used in a manner similar to that developed by McClelland (1953). The child chose how close to the peg he wished to stand for his tosses. He then guessed how many of the nine rings he would get on the peg. After his nine tosses, he again chose a line and estimated his score. This procedure was repeated several times both with a free choice of distance and

with the child standing at a fixed distance from the peg.

The child was then shown a set of six color photos of the faces of elementary school age boys: two Mexican, two Negro and two Anglo. The child was told that he did not know these boys but was to look at the pictures and make some guesses about them. He was then asked to select the kindest, the next kindest, and so on, until he had ranked all of the faces as to their kindness. He was then asked to rank the pictures with regard to how happy the children are, how strong, how fast, and as to who gets the best grades. He then repeated the above procedure with a similar set of girls' pictures. Next he was shown the pictures of his own sex again, and was asked to select the one most like himself, the one he would most like to be, and the one he would most like to have for a friend. This test should tend to detect the child's acceptance of the usual stereotypes prevalent toward the three ethnic groups.

The next test was part of the Supplement of the Children's Apperception Test (Bellak & Bellak, 1964). The child was asked to tell stories about pictures of school and play situations. These stories, which were recorded on tape, are being analyzed for achievement motivation, linguistic usage, anxiety, and responsiveness to verbal reinforcement.

The next measure was taken using an apparatus adapted from Witkin's (1954) "rod and frame" test. The child peers through a face-size opening into a wooden box four feet long by eighteen inches high and eighteen inches wide which is placed on a table. At the far end of the box is a silhouette of a man surrounded by a square frame, both having been coated with luminous paint. The angular tilt of the man and frame can be independently controlled from the rear of the box. By turning a knob at the front of the box the child is able to adjust the tilt of the man. The child's task is to line the man up with the true vertical by not paying attention to the position of the frame. The child had four trials with different

initial settings of the tilts of the man and the frame with his chair in each of three positions: upright, tilted to the right, and tilted to the left. If Witkin's conclusion to the effect that field dependence reflects a basic personality disposition is tenable, we would expect to find that the measure will be a good predictor to adjustment and achievement in the mixed classroom.

After the man-in-frame task, the psychometrist rated the child on a number of dimensions such as health, interest in the tasks, and anxiety, which were taken from the Sten Rating Scales. This ended the first testing session.

After about a month the child was tested again. The first task in the second session was designed to measure the child's responsiveness to social reinforcement. The reinforcer was administered while the child was telling stories about the CAT pictures. The child told stories about four pictures. No reinforcements were administered during the story the child told about the first picture. The amount of verbal output for this picture provides the base rate data. The child was liberally reinforced according to a fixed schedule for the second and third pictures and then received no reinforcement for his story to the fourth picture. His responsiveness to reinforcement score is the change in output for the fourth story as compared with the first.

The new task was based on the paradigm developed by Brehm (1956) to measure postdecisional dissonance reduction. All decisions have negative consequences inherent in them to which the person presumably accommodates. The extent to which the chosen alternative is overvalued relative to the rejected alternative(s) has been taken as one measure of this accommodation. We assume that the tendency to reduce dissonance would predict to the child's adjustment to the mixed classroom. We therefore designed a measure to test this tendency. Specifically, the child was shown ten toys and asked to rank them according to which he liked best. At the very end of the testing, the child was offered his choice between the toy he

had ranked third and the one he had ranked fifth. His choice and the time he took to make it was noted and he was again asked to rank order the toys. Dissonance reduction would be reflected in the tendency for the chosen toy to move up in rank relative to the rejected toy.

Following the dissonance measure we administered the Raven's Progressive Matrices Test (1962). This consists of designs with a piece missing from each one and the child is asked to choose the missing piece from among four alternatives. This is a reasoning test that is assumed to be more culture free than those usually administered in school situations and should provide interesting comparisons with the Peabody Test described below in the ability to predict school achievement.

The next series of paper and pencil type items were selected from various standard personality and anxiety measures, such as those of Cattell (1965) and the Edwards Personal Preference Schedule. These items were selected to measure four dimensions: (1) general anxiety; (2) perception of others' attitudes toward self; (3) attitudes towards self; and (4) school anxiety. Fourth through sixth graders also had questions measuring achievement motivation.

The Peabody Picture Vocabulary Test was then administered. This is presumably a measure of verbal intelligence.

Following the Peabody, a Vulnerability to Peer Pressures Test was administered which was patterned after the early work of Asch (1951). The child was shown a series of cards, each having three silhouettes of the same object in three different colors: blue, orange, and yellow. The three silhouettes differed slightly in size from one another. The interviewer then stated, for example: "Most children say the blue dog is biggest. What do you think is biggest?" The purported group consensus was incorrect on eight of the twelve trials. The child's conformity score is the number of these trials on which he was swayed by the group.

As the next task for the kindergarten through third grade, the child was asked to sort a deck of cards depicting scenes involving a child in various everyday situations into a "happy" and a "sad" pile, a task originally developed by Bower and Lambert (1957) to measure adjustment. The adjustment score is simply the number of cards the child classifies as happy. For the fourth through sixth graders, the "thinking about yourself" booklet from the same study was used instead of the "happy-sad" pictures. This booklet consisted of statements about an imaginary child. The child being tested then indicates the extent to which he is like that child. Later in the schedule the child is asked whether or not he wants to be like the child mentioned. The child's adjustment score is based upon the number and size of the discrepancies between his actual and ideal self.

At the conclusion of each of the two one-hour testing sessions, the child was asked to draw a picture. At the end of the first session he was asked to draw a person and at the end of the second he was asked to draw a picture of himself. Such pictures have been scored for intelligence (Goodenough, 1955) and as projections of personality (Machover, 1951; Harris, 1963).

Again at the end of the second session, the psychometrist rated the child on a number of behavioral dimensions.

During the same time period, behavior ratings on each sample child were obtained from the teachers. These behavior ratings contained the following measures:

1. Emotional adjustment.
2. General anxiety.
3. Response to school situations.
4. Personality configuration of sample children.

During the summer 1966, interviews were conducted with parents of each of the sample children. Fifty interviewers and five supervisors were trained to conduct the field work. The interviews covered the following areas: