A longitudinal study to determine the conditions surrounding the integration of Negroes, Mexican Americans, and Anglos in the Riverside Unified School District in Riverside, California, began in school year 1965-66. The sample included students in kindergarten through grade 6. A sample of kindergarten students was added to the original sample during the 1968-69 school year. A series of test batteries measuring achievement-related attitudes was administered to the entire sample. Attitude measures included (1) an ethnic pictures test, (2) a delay-of-gratification test, (3) a dissonance reduction test, (4) field dependence-independence as measured by an adaptation of Witkin's (1954) rod and frame test, (5) aspiration level as measured by a ring toss game, (6) sociometric analysis, and (7) the Children's Apperception Test. Ethnic differences were reported for all attitudinal measures except delay-of-gratification. An additional survey, assessing Black militancy in the junior high school, is planned for the 1968-69 school year. A related document is ED 021 652. (TL)
FACTORS CONTRIBUTING TO ADJUSTMENT AND ACHIEVEMENT

Progress Report

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FACTORS CONTRIBUTING TO ADJUSTMENT AND ACHIEVEMENT
IN RACIALLY DESEGREGATED PUBLIC SCHOOLS

The continuing goal of this project is to study progress of the desegregation of the Riverside, California Unified School District. The focus of our work is on achievement related attitudes. We are examining the effect of family background characteristics on these attitudes and the degree to which these attitudes subsequently affect emotional adjustment and achievement in the racially mixed classroom. We are also examining the effect that the mixed classroom has on these attitudes.

Our work has been organized as a set of relatively independent substudies conducted by the senior staff, graduate students, and several undergraduates. The work is coordinated by the senior staff and weekly meetings are held which are attended by everyone working on the study. The purpose of these meetings is to provide everyone in the study with an overall view of the ongoing data analyses. They are conducted in a manner similar to that of a seminar.

Data Collection

The collection of data is continuing. There was no large scale data collection during 1968 on either the children or their parents. We did, however, take our yearly sociometric measures on every classroom that contained at least one of our sample children. In addition, we administered a measure of teacher attitudes concerning issues which might possibly affect the performance of children in their classrooms.

At this writing, our psychometrists are in the field conducting the third data collection on the children. The instruments being used are, for the most part, repeats of the measures used in 1966 and 1967. At present, the youngest
children in our original sample are third graders and the oldest are ninth graders. We have added a sample of kindergarten children in order to assess the effects of general changes in the community on our sample children. By comparing these children with our original sample children who were in kindergarten in 1966, we will have some basis for assessing the effects of changes within the community. We have located 1305 children out of the total original sample of nearly 1800 children and have added 352 kindergarteners.

Each teacher is again being asked to complete individual ratings on each sample child in his or her classroom. These same behavior ratings were used in the premeasure, thus giving us a before and after rating. The child will be rated in comparison with all of the other children in his classroom. The child's teacher will typically not be the same teacher he had in 1966 so there are, therefore, some difficult but interesting problems of analyzing interteacher comparisons of the same child relative to the rest of his class.

We are once again collecting sociometric data on every classroom in the district that contains at least one of our sample children. This will give us four successive years of sociometric information.

A shortened version of a questionnaire that was administered to teachers who had sample children is being readministered this year. We are specifically looking at changes in how teachers discipline and motivate children. We are also attempting to assess their attitude toward integration.

The lengthy task of transcribing the protocols collected for the Children's Apperception Test has been completed for both the 1966 and 1967 data. We are also completing the transcription of the supplement to the Children's Apperception Test as well as the responses the children made to the "Tell me about your-
The initial data processing for all of our data is done in Riverside. The raw data are checked, put on cards, and then onto tape for storage in the data bank. All of the data collected in 1966, 1967, and 1968 has been screened and edited. The data that are currently being analyzed at UCLA have been loaded onto IBM 1800 disks. These data are available only to the senior staff and to those students working directly under their supervision.

We have been writing programs for the vast quantity of data which needs to be analyzed. During the past year and a half, a system of computer programs has been developed for the IBM 1800 which we call DATAX (DATA eXecutive). This software handles nearly all of the computing services we require. All portions of the DATAX system are coded so as to permit a continuous question-and-answer interaction between the researcher and the computer. It is organized and well documented so that the user may access the system with a particular operation code representing the kind of manipulation he wants to perform on his data. Therefore, no knowledge of programming is needed. The researcher's data are all stored on-line on disks in the 1800, thus permitting instant access to any of the data we have collected.

The present system is, for the most part, designed to manipulate and analyze numerically coded information. It includes programs for storing, retrieving, editing, transgenerating, and analyzing data. The analytic capabilities include most of the standard statistical programs and some special programs written to fit our needs.
Two other systems have been written, one for analyzing verbal data (TEXT) and another for analyzing sociometric data (SOCIO). These systems were written to convert the verbal protocols from the Children's Apperception Test and the sociometric ratings into more readily analyzable numeric form. TEXT is designed to search for and count specific characters, words, and phrases. SOCIO was written to study such things as clique structures. Later on in this report we will discuss the studies being conducted that rely on these two new systems.

Data Analysis

Ethnic Pictures

The previous work on racial awareness indicates that Negro and white children of preschool age differ in racial awareness. Both in the north and in the south white children identify with members of their own race, while Negro children identify with the white group. One of our measures, the "Ethnic Pictures Test" attempts to measure racial awareness as well as the nature of the racial stereotypes. One purpose of using the measure was to assess the effects of desegregation on racial attitudes. We also want to relate the child's initial attitudes to other attitudinal variables, i.e., home background characteristics, school factors, and the child's adjustment and achievement in the mixed classroom.

Our sample child is shown six faces of elementary age boys, two faces are Anglo, two Negro, and two Mexican-American. The child's task is to rank each of the pictures on the dimensions of kindness, happiness, strength, speed, and scholastic performance. This procedure is then repeated for six faces of elementary age girls. This again includes two faces from each ethnic group. Finally, the child is shown the picture set corresponding to his or her sex and is asked to pick the child who is "most like himself," the one he would "most like
to be," and the one he would "most like to have for a friend."

The "most like me" data are comparable to those reported by Clark and Clark. The choice for this question appears to be the most appropriate measure of ethnic group self-perception. The data show that ethnic group self-identification is considerably less than perfect for the minority children. There is a relatively small proportion of misidentifications on the ethnic dimension for the Anglo children whereas more than half of the minority children tend to choose an Anglo face rather than a face of their own ethnic group.

There is an interesting age trend. Within both the 1966 and 1967 data from the minority children we find that there are fewer misidentifications with increasing age. The reverse seems to be true for Anglo children. This suggests that the minority child is more likely to use ethnicity as a basis for classifying people the older he gets. This effect may be mediated by his growing awareness of his own status as a minority group member. That the effect is in the opposite direction for the Anglo children is puzzling. This may indicate that race becomes less of a basis for classification as Anglo children grow older since there is no growing awareness in them of any sort of unique racial identity. Their world is becoming more complex, however, and they begin to use other cues provided by the faces (e.g., shape of head, smile, clothing, etc.) as a basis for classification.

For the "most like to be" choice we find a strong tendency for all of the children to prefer the Anglo faces. This is an effect which also appears to increase with age. When the data from 1966 are compared with those from 1967, we find that there is an increased tendency for the Anglo children to choose Anglo faces, especially the boys. The minority children, on the other hand, show a decreased tendency to do so, especially the Negro boys. This suggests that the mixed situation has accentuated racial awareness on the part of children within each ethnic group.
The "most like for a friend" data also reveal a marked preference for all of the children to choose Anglo faces, the tendency being equally great within each of the three ethnic groups. After one year's experience in the mixed classroom, however, the minority children tend to show an overall decrease in the choice of Anglo faces and the Anglo children show an overall increase. This is further evidence of accentuated racial awareness.

The ranking data on the various attributes show a strong tendency for Anglos to be considered "kindest" and "happiest" by the children in each ethnic group. The Negro faces tend to be ranked as "fastest" with the Negro and Mexican faces receiving nearly equal rankings for the "strongest" dimension. The rankings on all of these dimensions become accentuated with increasing age. We are thus in a position to observe the growth of stereotypes. When children at each grade level in 1967 are compared with children who are at that grade level in 1966 we see very little change for each of these dimensions. It is clear that both in 1966 and 1967 Anglos are perceived as getting the best grades and that one year of desegregation appears to accentuate this judgment. An interesting effect appears with increasing age. Our youngest Anglo children in 1966, that is, those who were then in kindergarten, tend to overchoose the Anglo faces as getting the best grades. With increasing age, this tendency increases although not appreciably so. The results for the minority children are quite different. The kindergarteners in 1966 are just as likely to pick a Negro or a Mexican face as they are an Anglo face as getting the best grades. As they grow older, however, they tend to overchoose Anglo faces so that by the time they are in sixth grade they are overchoosing Anglo faces to a greater extent than do Anglo children overchoose Anglo faces. This effect appears very strikingly both in the 1966 and 1967 data. This is true in spite of the fact that most of the minority children in 1966 had
had absolutely no experience with Anglo children in their schools. This lack of contact makes the finding all the more remarkable. The fact that the judgment is accentuated in 1967 is not as surprising since it is clear that on the average Anglo children tended, during the first year of desegregation, to do better in their classes than did the minority children. The judgment in 1967 was based on direct evidence whereas in 1966 there was no such evidence available to the minority children.

**The Delay of Gratification**

Delay of gratification is the ability or willingness to defer immediate reinforcement for the sake of obtaining a more valuable reward at a later time. Although a number of studies have investigated the situational determinants of the choice to delay gratification (e.g., Mischel, 1966), relatively little attention has been focused on the maturational and sociological antecedents of preferences for delayed reinforcement. What little work that has been done (i.e., Mischel, 1958) suggests that delay is related to such factors as chronological age and ethnicity.

There are three delay of gratification measures in our data. Two of these, the candy bar choice administered in 1966 and the toy choice item included in the 1967 battery, offered the child an actual choice between a readily available object and a similar but more valuable object at a later time. Three other questions that asked the child to state how he would react in a hypothetical delayed choice situation were also included in the 1967 interview schedule.

The results for the actual choices will be considered first. Overall analyses of variance computed on both the candy bar and toy choice showed strong, linear effects for age but no significant main effects for either sex or ethnicity. Responses on these actual choices show increasing preference for delayed rewards with increasing age. Age and ethnicity were shown to affect answers to the hypo-
thetical choice items. The frequency of delayed choices increased with age. Also, Anglos were more likely to choose delayed outcomes than were Negroes. Mexican-Americans showed the most marked preferences for immediate rewards. There was also a marked preference for older Anglo children to prefer delayed outcomes.

To assess the relationship between the two types of delay measures, correlations were computed for the data on the actual choice items and the three hypothetical questions in all possible combinations. The hypothetical questions were found to correlate with each other, although weakly. One other reliable, although weak, correlation was found between the toy choice measure and an unweighted sum of scores for the three hypothetical questions. These weak correlations suggest that an immediate or delay choice is situationally determined. A great deal of further research on delay as a personality characteristic is needed.

A basic requirement for a measure which allows only two choice alternatives is that the overall distribution of responses be roughly equal. Examination of the frequencies of delayed and immediate choices for the three hypothetical questions reveals a preponderance of delay choices. These questions are, therefore, providing less than optimal information for assessing the influence of various factors on delay preferences. In order to remedy this defect a total of eight questions are included in the 1969 testing schedule. To further improve our instrument, a much larger variety of delay questions is currently being pretested on children at the UCLA Elementary School.

**Dissonance Reduction**

All decisions have negative consequences to the extent that a choice between alternatives involves accepting the negative aspects of the chosen alternative and rejecting the positive aspects of the nonchosen alternative. Experimental evidence has shown that individuals tend to accommodate to the negative aspects
inherent in a decision by a process termed dissonance reduction (Festinger, 1964). One manifestation of this accommodation is a tendency to overvalue the chosen alternative relative to the rejected one(s). A task based on the paradigm developed by Brehm (1956) was included in the 1966 testing schedule in order to assess the degree to which each of our sample children accommodates to his decisions.

At the beginning of the testing session, the psychometrist placed ten toys on the floor in front of the child. The child was asked to pick the toy he liked best. That toy was then removed and the child was asked to pick the toy he liked best of those which remained. This procedure was continued until all ten toys had been ranked.

At the conclusion of the testing session, the psychometrist told the child that in appreciation for his help he would be given a toy to keep. The child was given two toys to choose from—the one he had ranked third and the one he had ranked fifth. After his choice he was again asked to rank the toys by the same procedure as before.

The results show both regret and dissonance reduction. The former is evidenced by a decreased liking of the chosen alternative after the choice. Regret decreases with increasing grade, changing from regret to dissonance reduction between the second and third grades. This effect is strongly linear. Negroes devalue the chosen alternative more than do Mexican-Americans who in turn devalue it more than do Anglos. Grade by grade, Anglo children devalue the chosen alternative less than either minority group. On the average, the Anglo children stop showing regret by the second grade, whereas the minority children exhibit regret through the third grade.

Field Dependence-Independence

"Man in the frame," an adaptation of Witkin's (1954) rod and frame test was
used to measure the child's tendency toward field dependence versus field independence. As measured by this test, field dependence indicates a tendency to spatially orient on the basis of external cues from the visual field, while field independence is manifested by a tendency to use internal body cues as the orientation basis. Witkin argues that field-dependence-independence reflects a key underlying personality variable having to do with the way the individual organizes and deals with his environment. The results of extensive studies demonstrate that field independence is related to a number of factors that are probably critical mediators of school adjustment. To mention a few, relative to individuals who are field dependent, individuals who are field independent are likely to have more mature self-concepts, to have better coping ability, and a good capacity for maintaining a tight organization over their impulses and ideas.

In the man in the frame task, the child who is seated, peers through a face-sized opening into a dark box that is 48" long, 18" high, and 18" wide. At the far end of the box there is a luminous silhouette of a man surrounded by a luminous square frame. The angular tilt of the man and the frame can be independently controlled by the psychometrist from the rear of the box. The child can control the tilt of the man by turning a knob at the front of the box. The child's task is to make the man stand up straight "as if he were standing in this room." The child is told that since the frame may be tilted he should not pay attention to it.

The total of twelve trials of the task was divided into three segments of four trials each. In the first segment the child's chair was upright, in the second it was tilted to the right, and in the third it was tilted to the left. The same four combinations of tilts of man and frame were repeated in each segment (frame 28° left, man 28° left; frame 28° right, man 28° left; frame 28° left, man 28° right; and frame 28° right, man 28° right).
The dependent measure is the number of degrees the child erred from the true vertical in the direction of the frame. Analysis of both the 1966 and 1967 data reveal highly significant effects of each grade, sex, and ethnic group; there were no significant interactions. In accord with Witkin's findings, children become increasingly field independent as they grow older. Thus, the older children tended to set the man closer to the true vertical. Also, in accord with Witkin's previous findings, females were found to be more field dependent than males. This is the case within each ethnic group. Anglos were found to be less field dependent than either the Negroes or the Mexican-Americans, and the Mexican-Americans were less field dependent than the Negroes.

Of the series of measures taken in 1966 and 1967, the errors to frame measure was found to be the single best correlate of the child's performance on standard school achievement tests (Metropolitan Readiness Test and Stanford Achievement Test). The more field independent children performed at a higher level on the achievement tests. The errors to frame measure was also significantly correlated with the child's responses to questionnaire items measuring self-attitude and general anxiety. Field independent children were likely to be less anxious and to maintain more positive self-attitudes.

The errors to frame measure was also found to correlate very highly with the three I.Q. measures (Raven Progressive Matrices Test, Peabody Picture Vocabulary Test, and W.I.S.C.). We assessed the effects of sex, age, and ethnic group independent of I.Q. The analysis revealed that, though considerably attenuated, the relationships between errors to frame and grade, sex, and ethnic group remain significant. When adjusted for I.Q., the field dependence scores of the Anglo and Mexican-American groups did not differ, though both groups were less field dependent than the Negroes.

**Aspiration Level as Measured by a Ring Toss Game**

The child is asked to toss nine rings per trial for eleven trials and is
asked before each trial to estimate the number of rings he will get on the peg. An "attainment discrepancy" score is derived by comparing expected to actual score for each trial. On all but three trials the child selects one of nine distances from which to throw. Each distance is marked off by a line on the floor (lines are 18" apart). On trials 2, 3, and 4, distance from the peg was standardized according to age of the child. The younger children (kindergarten through third grade) were asked to stand closer to the peg than the older children (fourth through sixth grade).

The child's choice of distance of the first trial is approximately normally distributed whereas on later trials, the distribution mean tends to shift toward the peg. In general, the greater the distance from the peg, the fewer the rings the child expects to get on and actually does succeed in getting on the peg. The child generally overestimates his performance at all distances but average overestimation decreases from the first to the last trial as the child gains experience with the task.

Analysis for grade, sex, and ethnic groups by the child's choice of distance from peg (trials 1, 5, and 8) reveal consistent effects. Children standing at greater distances from the peg tend to be male, older, and of Mexican-American heritage; children standing close tend to be young, female, and Negro.

For the younger children, expected and actual performance increases from trial 2 to trial 4 (the standard distance trials). Older boys tend to have the highest expectations on these trials. Age, sex, and ethnicity appear to affect actual performance; highest scorers tend to be older, male, and Mexican-American, whereas low scorers tend to be younger, female, and Anglo. The Mexican-American children start with the highest score on trial 2, and also show the greatest amount of improvement by trial 4. The younger children generally overestimate their scores on these trials. The amount of overestimation, however, decreases over
the three trials. Sex and ethnic group factors are significant for amount of
overestimation—males overestimate the most; Anglos overestimate the most; and
Mexican-Americans the least.

For the older children, performance increases from trial 2 to trial 4, while-
as expectation shows a slight decrease over the same trials. This is apparently
an effort to reduce the amount of overestimation of scores, which is larger for
the older than for the younger children.

As with the younger group, highest scorers tend to be older, male, and
Mexican-American. All three factors are consistently significant. The same re-
relationship holds for expectation. Mexican-American children start with the
highest score, and also show the most improvement.

Analysis for the amount of overestimation reveals an inconsistent picture:
ethnic group differences are not significant for any of the three trials and,
though males consistently overestimate the most, the factor reaches significance
only for trial 2.

Sociometrics

The general purpose of the sociometric analysis is to investigate the effects
of integration on the (1) pattern of sociometric choices with the integrated
classroom; and (2) the sociometric rankings of individuals within each class.
The SOCIO system referred to earlier is being developed to handle these compli-
cated and voluminous data.

At present, work is being done to determine the correlates of sociometric
standing for Negro, Mexican-American, and Anglo subjects. It is expected that
initially the individual's sociometric rank will be largely determined by his
popularity within his own ethnic group. Since ethnic groups are expected to
differ initially in their value structure, correlates of sociometric rank are
predicted to vary between the groups. As integration progresses, however, the
minority members may assimilate the middle-class value structure. Furthermore,
racial cleavages may diminish within the classroom over time. We, therefore, predict gradual homogenization in the correlates of sociometric rank for majority and minority group members.

In addition, work is being done to devise a mathematical index of integration for each classroom. Roughly, this measure will express the degree to which sociometric choices are independent of ethnicity. The two research questions pertinent to the index of integration are (1) what are the concomitants of a successfully integrated classroom (teacher, student, parent variables); and (2) how does time of integration affect ethnic cleavages within the classroom?

**Children's Apperception Test**

Work is continuing on the analysis of the stories told by the children to the Children's Apperception Test (CAT) and to the Supplementary CAT. The former was used to measure responsiveness to verbal reinforcement. The costly and time consuming job of transcribing the protocols is nearly complete. After our TEXT system for the IBM 1800 is in operation, coding and scoring for certain measures will go rapidly.

**Needs, Fears, and Transcendence Index**

We have started to score the CAT's according to the needs and fears expressed in the stories. The list of needs was derived from reading a large sample of the protocols. We have written a manual for scoring needs and fears. The need categories include: nurturance, security, exploration, achievement, affection, and independence. Fears include: deprivation, punishment, rejection, physical harm, solitude, unknown, nonspecific, and failure. We are able to score the stories with relatively high reliability.

Transcendence indices were derived from stories told by 60 Negro, Anglo, and Mexican-American children to four of the CAT pictures. Transcendence refers to content going beyond pure description. A transcendence index was computed which is the ratio of projective to descriptive comments. In addition to the
total transcendence index, each story was scored for type of transcendence. Examples of these categories are: spatial transcendence, temporal transcendence, intraception, and relationships.

Speech Parapraxes

We are continuing to work on our measure of speech anxiety which is being developed from the data collected in an experiment we conducted in a school district neighboring the Riverside district. We have been able to isolate a number of speech disturbances which we will be able to count in the main body of CAT data once our TEXT system is operational.

Dialect Changes

Our study of dialect changes continues. As reported last year we are using the same CAT protocols for assessing the degree to which a child's speech is dialected. We have recently compared, for a sample of children, the amount of dialect change during one year of the mixed classroom situation. For this purpose we compared speech samples for the child collected in 1967 with those collected in 1966. For the minority children we find a significant decrease in the amount of dialect. This is over and above what we might expect due to one year of growth. The Mexican-American children in the sample decreased their dialect the most. It was further observed that those children who showed the most change were those with the greatest predesegregation dialect. The minority children who were desegregated showed considerably more dialect change than a comparable control sample that had not been desegregated in 1966.

A second study of dialect has approached the problem statistically by measuring changes in average word length. When the predesegregation speech samples are evaluated, we find significant differences in word length used by children from the three ethnic backgrounds with Anglos showing the longest average word length, Mexican-Americans showing the second longest, and Negroes showing the
shortest word length. When the same children are evaluated after the one year of desegregated experience, these differences no longer exist. All three ethnic groups show a net increase in average word length, with the minority children showing a greater increase in word length than the Anglo children. Among the minority children Negroes show a greater increase than the Mexican-Americans. Since the word length method for assessing speech changes appears so promising we plan to continue this analysis on the entire sample of protocols. Once all of these protocols have been stored on IBM 1800 disks and the TEXT system is operational, taking word length counts will be straightforward.

**Responsiveness to Social Reinforcement**

In both the 1966 and 1967 schedules we measured responsiveness to social reinforcement. This was done with four CAT cards. No reinforcements were given during the story the child told about the first card. The amount of verbal output for this picture provides the base rate data. For the second and third cards, the child was liberally reinforced according to a fixed schedule and then received no reinforcements for the story he told for the fourth picture. His responsiveness to reinforcement is measured by the change in output for the fourth card as compared with what it was for the first.

Anglo children are more responsive than either Mexican-American or Negro children. Anglos show the smallest absolute output and Negroes show the largest. We also find that both story length and responsiveness to reinforcement increase with increasing age.

The transcription of the 1967 protocols has just recently been completed and we are now preparing transcriptions for storage on our computer disks. Once this has been done, word counting will be straightforward and we will be able to complete our analysis in a relatively short time.
Assessment of Black Militancy in the Junior High Schools

A semi-independent study is under way at the junior high school level. We now have sample children in all three junior high school grades. We are administering a militancy questionnaire to most of the children in our sample. Since we have such extensive background information on each of our children, we will be able to examine factors that predict to militancy. Among those factors we plan to examine are social class background, political activism of the child's parents, family emphasis on religion, presence or absence of a strong father figure and the degree of social interaction with white peers.

The 61-item inventory contains not only items relevant to militancy but also includes items having to do with political socialization, attitudes toward the civil rights movement, some general information questions, some items assessing the students' knowledge of historical Negro figures, and several items gauging the students' attitudes toward highly publicized Negro figures and organizations. The militancy part of the inventory includes questions concerning attitudes toward black identity, separatism, and the use of either violence or nonviolence in dealing with the racial crisis. Other items are designed to determine whether or not there is a general disaffection with the American political system. In an effort to find out whether or not militants are generally better informed than their more conservative peers we included several general information items. In order to determine to what extent Negro students have a biased view of Negro history, we included items about moderate and militant Negroes of historical interest. Several items in the inventory gauge the students' stance on racial issues relative to that of his peers and his parents.

We have pretested the inventory with a group of Negro students in Los Angeles and plan to administer the inventory in Riverside early in April.
References


