A STUDY OF THE EFFECT OF EXAMINER RACE ON INDIVIDUAL INTELLIGENCE TEST SCORES OF BLACK AND WHITE CHILDREN

By

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A DISSERTATION PRESENTED TO THE GRADUATE COUNCIL OF THE UNIVERSITY OF FLORIDA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

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A Study of the Effect of Examiner Race on Individual Intelligence
Test Scores of Black and White Children

By

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The purpose of this study was to determine if examiner race significantly affected individual intelligence scores of Black and White children at two grade levels.

Three Black and three White female examiners administered the Wechsler Intelligence Scale for Children to 24 Black and 24 White children in the second and third grades at Alachua Elementary School and to 24 Black and 24 White children in the seventh and eighth grades at A. L. Mebane Middle School. Approximately equal numbers of boys and girls were included in the sample.

The design of the study provided for each child to be tested by a Black and by a White examiner with a seven-day interval between test administrations. In order to distribute retest effects between races and among examiners, the testing schedule was alternated so that equal numbers of Black and White children at each grade level were tested first and second by each examiner.

Analysis of variance procedures utilizing a factorial with replications design were used to analyze the data.

It was concluded that there was no difference in intelligence test scores at either grade level when tested by Black and White examiners.

CHAPTER ONE

PROBLEM

Studies comparing the intelligence of racial, ethnic, and social groups abound in the professional literature. These comparative studies began to appear soon after the turn of the century when the Binet-Simon Measuring Scale was accepted as a valid and reliable measure of individual intelligence. (Strong, 1913; Sunne, 1917; Pressey and Teter, 1919; Arlitt, 1921; Wells, 1923).

The evidence from these earlier studies as well as evidence which has accumulated more recently has demonstrated that there are differences in performance on individual intelligence tests which may be attributable to membership in a particular social, ethnic, or racial group. (Shuey, 1958; Osborne, 1960; McQueen and Churn, 1960; Williams, 1970).

Demonstrated differences in intelligence test scores between racial groups have generated a vast amount of research concerning the nature-nurture controversy. Some investigators have concluded that group differences in intelligence are due to innate factors which are not amenable to educational and environmental manipulation.

Shuey (1958) in a review of approximately 244 studies dealing with the intelligence of Negroes and Whites summarized the position of this group. She concluded that the results of these investigations "...all point to the presence of some native differences between Negroes and Whites as determined by intelligence tests" (p. 318).

Recently, many investigators have concluded that group differences in intelligence are due to environmental and social factors which are amenable

to educational and environmental manipulation. The position of these investigators has been summarized in an article in the American Journal of Orthopsychiatry (1957) which was endorsed by 18 social scientists including Otto Klineburg, Gardner Murphy, Jerome Bruner, and Anne Anastasi. They stated: "The conclusion is inescapable that any decision to use differences in the average achievement of the two racial groups as a basis for classifying in advance any individual child, Negro or White, is scientifically unjustified" (p. 422).

Following a UNESCO conference attended by sociologists, anthropologists, psychologists, and geneticists from around the world, Tumin (1963) issued this statement:

> Whatever classifications the anthropologist makes of man, he never includes mental characteristics as a part of those classifications. It is now generally recognized that intelligence tests do not themselves enable us to differentiate solely between what is due to innate capacity and what is the result of environmental influences, training and education. Wherever it has been possible to make all allowances for differences in environmental opportunities, the tests have shown essential similarity in mental characteristics among all human groups. In short, given similar degrees of cultural opportunity to realize their potentialities, the average achievement of the members of each ethnic group is about the same (pp. 5-6).

Although more and more investigators are accepting this latter position, the variables which are responsible for the discrepancy between the measured intelligence of Negro and White groups are still largely unexplained (Dreger and Miller, 1960; Kennedy, Van De Riet, and White, 1961; Rosenthal, 1966; Sattler and Theye, 1967).

Among the many variables which may affect performance on an intelligence test are socioeconomic class (Arlitt, 1921; McGurk, 1953, McQueen and Churn, 1960; Deutsch and Brown, 1964; Burnes, 1970; McFie and Thompson, 1970); caste differences (Canady, 1943; Dreger and Miller, 1960; Kennedy, Van De Riet, and

White, 1961); emotional disturbance (Hammer, 1954); nutrition (Zach, 1970); using the tests with groups not represented in the standardization sample (Kennedy, 1965; Williams, 1970); and examiner and examinee variables (Trent, 1954; Pasamanick and Knobloch, 1955; Masling, 1968; Dreger and Miller, 1960; Kennedy, Van De Riet, and White, 1961).

Of these variables, the variable of examiner race has been examined the least (Littell, 1960; Dreger and Miller, 1960; Kennedy, Van De Riet, and White, 1961; Solkoff, 1971). These authors suggested that although investigations of this variable have been few and inadequate, examiner race may be an important factor which contributes to the observed decrement between Black and White intelligence test scores.

The significance of this variable permeates the entire educational spectrum in our culture. Standardized tests measuring all aspects of personality are routinely administered in public education from kindergarten through adult education and job training programs. Educational decisions based on standardized test scores mold and alter the education and training of each child within the United States.

Special educators are especially concerned with standardized tests since the results of these tests are used to determine placement in special education programs and to design educational experiences for exceptional children.

With the influx of minority group children into special education classes following racial integration, knowledge about variables contributing to racial differences in measured intelligence has become particularly important. Dunn (1968) has estimated that well over half of the children in public school special education classes for the educable mentally retarded are minority group children. Williams (1970) has called for a moratorium on all testing of Blacks until nondiscriminatory tests are available.

In a recent article, Ross, DeYoung and Cohen (1971) have warned that the continued existence of special education in the public schools depends upon more accurate and less discriminatory placement procedures and the development of curricula relevant to the needs of exceptional children. They concluded:

> Recently, suits have been brought against public schools for placing certain children in special classes for the educable mentally retarded. Through the courts parents are challenging the placement procedures, and the effectiveness and harmful impact of special class programming. Special educators are urged to initiate immediate reform in testing and placement procedures or there is a likelihood that changes will be imposed by the courts. (p. 5)

Present Study

The purpose of this study was to assess the effect of examiner race on individual intelligence test scores of Black and White children in the second and third grades and in the seventh and eighth grades.

Most of the variables which have been correlated with performance on psychological tests such as socioeconomic class, caste membership, motivation, etc., are only indirectly amenable to educational intervention. In contrast, if examiner race is an important variable in psychological testing, direct educational intervention is possible through matching of examiner-examinee race.

CHAPTER TWO

REVIEW OF THE LITERATURE

Literature Pertaining to Examiner Race as an Independent Variable

Canady (1936) studied the variable of examiner race using the 1916 Stanford-Binet Intelligence Scale in a test-retest design with 48 Negroes and 25 Whites, ages 4-16. He found that IQ scores for the Negroes showed an average increase of six points under the Negro examiner and IQ scores for Whites showed an average decrease of six points under the Negro examiner.

Sattler (1966) reviewed Canady's pioneer study and concluded that methodological weaknesses such as using only one Black examiner and twenty White examiners, lack of random selection and assignment of subjects, and lack of statistically significant results precluded any valid conclusions.

Whittaker, Gilchrist, and Fischer (1952) conducted a perceptual defense experiment in which positive, neutral, and derogatory words were flashed on a tachistoscope. They found a significantly longer reaction time to derogatory words for Black subjects working with a Black examiner than for Black subjects working with a White examiner or for White subjects working with a White examiner or a Black examiner.

Trent (1954) used a Black and a White examiner to present a mother-identification task to 81 Black and White kindergarten children. He found that when Black children were examined by the White investigator they refused to make a selection 25 per cent of the time. However, the Black children made no evading responses to the Black examiner. There was no difference in the responses of White children to either examiner.

Pasamanick and Knobloch (1955), two White examiners, found a significant difference in language responsiveness and language comprehension as measured by the Gesell Developmental Examination in Negro infants at age 24 months. No significant differences in physical or behavioral development had been found in the two groups of infants during the first 18 months of the study. They concluded that "apparent early awareness of racial differences and loss of rapport has serious implications in the field of ethnic group psychology, particularly in the use of verbal items on intelligence testing" (p. 402).

In a study involving 40 White male college students, Rankin and Campbell (1955) measured Galvanic Skin Response to a Black and a White examiner. A real GSR device and a dummy GSR device were connected to the arms of each subject. One experimenter read emotional words to the subject while a Black or a White examiner "adjusted" the dummy device. The found a significant difference in GSR's for Black and White examiners.

Pettigrew (1964b) reported an unpublished study which used two groups of Black adults equivalent in income, age, education, and region of birth. The group interviewed by a Black examiner answered more questions on an information survey and a synonym test than did the group interviewed by a White examiner.

Sattler and Theye (1967) reported a study by LaCrosse (1964) in which a White examiner retested Negro subjects who had been tested with the Stanford-Binet Intelligence Scale (L-M) by a Black examiner. The same White examiner retested White subjects who had been tested by a White examiner. Under the retest condition, the Black subjects' scores were significantly lower than previous scores, whereas the White subjects' scores were significantly higher than previous scores.

Pelosi (1968) reported a study by Kennedy and Vega (1966) which investigated the variables of examiner race, subject intelligence, and grade level in conjunction with the incentive conditions of praise, blame, or control. They concluded:

> No differences in performance were observed between subjects seen by either Negro or White examiners when praise or neutral comments were made during testing. It was only when examiners made derogatory comments to subjects about their performance that differences occurred. Under the blame condition, there was a decrement in performance of subjects tested by White examiners. (p. 9)

Baratz (1967), working with Black students at Howard University, conducted a study on the effects of examiner race, instructions (neutral or anxiety-producing), and comparison population (subjects were told they would be compared with Black or White college students). Examiner race was the only significant effect. Type of test and comparison population were not significant.

Katz, Robinson, Epps, and Waly (1968) showed that performance on a test of expressed hostility was influenced by race of the examiner. Seventy-two Black boys were administered a hostility questionnaire and were then divided into four groups. Two of the groups had a task structured as a neutral research procedure under a Black and a White examiner. The other two groups had a task structured as an intelligence test under a Black and a White examiner. The subjects were retested with the hostility questionnaire. When the task was structured as a neutral one, there were no significant effects of the experimenter's race on the subjects' hostility scores. However, when the task was structured as an intelligence test, significantly less hostility was expressed when the examiner was White.

Pelosi (1968) investigated the effects of examiner race, style, and sex on 96 Black males involved in a youth training program. Each subject was randomly assigned to the treatment conditions and was given a battery of eight tests including six subtests of the Wechsler Adult Intelligence Scale, the Purdue Pegboard Test, and IPAT Culture Fair Test. No significant main effects were found for any of the variables under investigation.

Caldwell and Knight (1970) used the Stanford-Binet (L-M) to test the effect of examiner race on intelligence test scores of 15 Black high school boys. No significant differences in IQ scores were found under the Black or the White examiner. The investigators noted that 13 of the 15 subjects had lower IQ scores on the second test, regardless of examiner race.

Solkoff (1971) reported the first study which used the WISC as an evaluation instrument to assess the effect of examiner race on intelligence test scores. In addition, he administered a test-anxiety scale to assess whether test anxiety scores would differ contingent on the race of the examiner. Each of the four Black and four White female examiners administered the anxiety scale and the WISC to 14 Black and 14 White children, ages 8-11. Solkoff found no significant interaction between race of examiner and race of child. No significant effects were obtained for the anxiety scale.

In a study which investigated examiner race as well as examiner expectancy, Jacobs and DeCraff (1972) employed 16 Black and 16 White psychologists to score video-taped WISC tests of a White boy and a Black boy. Half the examiners were presented fictitious referral forms which indicated the boys were of superior intelligence and achievement and half were presented referral forms which indicated the boys were of inferior intelligence and achievement. They found that examiner expectancy significantly affected WISC scores

and that bias was greater when Black examiners rated the Black subject and White examiners rated the White subject.

Savage (1972) conducted a study in which 240 Black and White children in the first, third, and fifth grades in segregated and non-segregated schools were given the Block Design and Digit Span subtests of the WISC by 10 Black and 10 White examiners. He found significant differences for Black children tested by Black examiners on Block Design, but not on Digit Span. The author reported that Black first-grade boys in segregated schools scored about half as many scaled score points on Block Design when tested by White examiners than when tested by Black examiners.

A request to the Florida Educational Resources Information Center, Tallahassee, Florida for a computer search of ERIC documents relevant to the present study yielded only one additional investigation. Cotnam (1969) assessed the effects of examiner race, subject race, and stated purpose of testing with a group of 40 Black and 40 White subjects enrolled in a work-training program. Subjects were randomly assigned to four racially integrated groups. A Black and a White examiner administered a battery of self-report measures to two of the groups under a neutral condition. The other two groups were told the tests were for job placement. The investigators hypothesized that under the job-placement-test condition, examiners of unlike race would represent a "threat" to the subjects which would result in a self-favoring bias. The results showed that the self-favoring bias occurred for all subjects regardless of examiner race.

Littell (1960) reviewed the research literature from 1950-1960 which had used the Wechsler Intelligence Scale for Children. He made the following suggestions for further research:

> Much more systematic attention should be given to investigations of the many practical problems involved in the use of the WISC as a measuring device. There appears to be strong reason that WISC scores are affected systematically by many variables other than intelligence but little information about the exact nature of these variables and the relationships involved is available. Especially in need of systematic investigation is the effect on WISC scores by (a) variables in the relationship between examiner and examinee, (b) the circumstances of the examination, and (c) repeated administration of the WISC. (p. 153)

In a review of the WISC literature from 1960-1970, Zimmerman and Woo-Sam (1972) indicated that the research questions posed by Little had not been answered.

Hammond (1954) has pointed out the methodological weakness of studies which employ one examiner of each race to investigate the effect of race on subject performance. He stated that no valid, generalizable conclusions can be drawn from these studies any more than valid, generalizable conclusions can be drawn from a study using one subject. Using Hammond's criteria to assess the studies which have used race of the experimenter as an independent variable, only Jacobs and DeCraff (1972), Kennedy and Vega (1966), Pelosi (1968), Savage (1972), and Solkoff (1971) have used more than one examiner in each racial category. Although Pelosi has controlled this variable, the subjects in the experiment were volunteers and may not have been representative of the population of Black male youths in work-training programs. Also, he used only Black subjects. Jacobs and DeCraff have controlled the examiner variable, but used a subject population of one in each racial category. Only the investigations of Savage and Solkoff have internal and external validity as defined by Campbell and Stanley (1970).

Literature Pertaining to Examiner-Examinee Variables--The Wechsler Scales

Sarason and Minard (1962) administered the Vocabulary, Block Design, Comprehension, and Digit Symbol subtests of the Wechsler Adult Intelligence Scale (WAIS) to 96 college students who had been grouped as low-anxious or high-anxious by scores on an anxiety scale. The results showed that low-anxious subjects were superior to high-anxious subjects on Vocabulary, Block Design, and Comprehension. No differences were found on Digit Symbol.

Exner (1966) used 33 pairs of subjects, ages 7-14, matched for age, sex, Stanford-Binet IQ, and academic performance to test the effect of examiner-examinee rapport on WISC scores. One subject of each pair was tested under a "rigid" examiner condition and the other subject was tested under a "relaxed" condition. He concluded, "Results show statistically significant decrements in the performance of those subjects treated rigidly, and these decrements are mainfest in specific subtests rather than in a global effect" (pp. 305-306).

Egeland (1967) employed two White male examiners to administer the WISC to 54 fifth grade subjects. The examiners and the subjects had been previously categorized as high-anxious or low-anxious by means of an anxiety scale. He reported that both groups of subjects tested by the high-anxious examiner performed significantly better on the Verbal Scale than subjects tested by the low-anxious examiner. There were no significant differences on the Performance Scale.

Masling (1968) investigated the effect of "warm" and "cold" subjects on the scoring of the Information, Comprehension, and Similarities subtests of the Wechsler Adult Intelligence Scale. The test subjects were student accomplices who gave memorized responses to each examiner. Eleven examiners administered the three subtests to one "warm" and one "cold" subject. He concluded:

> The results indicated that in scoring the responses, the examiners tended to be more lenient to the warm subject than the cold. The examiners also tended to use more reinforcing comments and to give more opportunity to clarify or correct responses to the warm subjects....The interaction also affected the examiners' "objective" judgement of relatively "objective" material. Even though they had the Wechsler manual available, a response given in the warm condition tended to be given greater credit than the identical response given in the cold condition. (pp. 43-44)

Miller, Chanskey, and Gredler (1970) used 32 graduate psychology students to investigate discrepancies between raters on a fabricated WISC protocol. The range of Full Scale IQ's for the one protocol was 76-93. The Vocabulary and Comprehension subtests showed the most variability in scoring. In addition, he found a mean of 2.12 clerical errors per rater.

Tyson (1969) investigated the effect of prior examiner-examinee contact on WISC test scores. A group of 50 subjects was divided into four groups: those who had no previous contact with the examiner; those who had limited contact; those who had warm contact (examiner gave cookies and praise); and those who had cold contact. No significant differences were found among the groups.

Littell (1960) concluded from his review of the literature with the WISC that:

> The possible effects of differences in the examiner's technique of administration is another problem area which has not received the attention it merits, as is the whole field of possibilities arising from the relation between the examiner and the child and the circumstances of the examination. This is surprising as the importance of these variables appears to be generally assumed. (p. 146)

Summary of the Review of the Literature

Studies reviewed in this section have shown that examinee, examiner, procedural, and situational variables may affect scores on psychological tests and measurements. The amount of research conducted in the past three decades to identify and thus control these variables is indicative of their assumed

importance. However, definitive conclusions about the effects of these variables in general and the effect of examinee-examiner race in particular are not yet available.

CHAPTER THREE

DESIGN

Instrumentation

The Wechsler Intelligence Scale for Children (WISC) is an individually administered instrument which yields a Verbal IQ, a Performance IQ, and a Full Scale IQ. The six subtests which contribute to the Verbal IQ are Information, Comprehension, Arithmetic, Similarities, Vocabulary, and Digit Span. The six subtests which contribute to the Performance IQ are Picture Completion, Picture Arrangement, Block Design, Object Assembly, Coding, and Mazes. The Verbal IQ and the Performance IQ are combined to derive a Full Scale IQ. The sixth, alternate subtests, Digit Span, and Mazes, were not used in this study.

The WISC was chosen as the testing instrument for this study because of its widespread acceptance as a valid and reliable test of intelligence of school age children (Fraser, 1959; Burnstein, 1965; Littell, 1960; Zimmerman and Woo-Sam, 1972). Reliability coefficients quoted for the WISC are: .88 at 7½, .96 at 10½ and 13½ for the Verbal Scale; .86 at 7½, .89 at 10½, and .90 at 13½ for the Performance Scale, giving overall coefficients of .92, .95, and .94 at those ages for the Full Scale (Fraser, 1959).

In addition to providing the necessary data for this study, each subject's profile of abilities as measured by ten subtests yields valuable information which can be used by teachers for educational programming.

Setting

Alachua Elementary School and A. L. Mebane Middle School were selected as sites for the present study. Both schools served the rural community of Alachua, Florida. A large per centage of the students at both schools were disadvantaged students whose parents worked on the farms in the area. The elementary school had 600 students in kindergarten through fourth grades, 47 per cent of whom were Black students. There were 27 on the administrative and teaching staff of the school, 7 of whom were Black. The middle school was an ungraded school which had 520 students in fifth through eighth grades, 51 per cent of whom were Black students. (Although the school was completely ungraded and students of all grade levels were found in any one classroom, grade classifications were retained on the cumulative folders.) There were 25 on the administrative and teaching staff, 5 of whom were Black. Both schools have been racially integrated since February, 1970.

The testing was completed within the period from April to June, 1972, and was carried on simultaneously at both schools. Each test was conducted in a private room at the schools with only the examiner and the subject present.

Sample

To obtain the sample for this study the investigator asked the Assistant Principal for Curriculum at Alachua Elementary School to refer 24 Black and 24 White second and third grade students as subjects in the elementary grade-level group. The Guidance Counselor at A. L. Mebane Middle School was asked to refer 24 Black and 24 White seventh and eighth grade students as subjects in the middle grade-level group. Each administrator was asked to refer any student "on whom you want more information." The only criteria for participation were grade level and race. No attempt was made to test children within any ability level or to equalize the number of subjects in any particular

ability level. Approximately equal numbers of boys and girls were referred as participants in both racial categories and at both grade levels.

Examiners

Three Black and three White female examiners were employed to administer the tests. Each of the examiners had had at least one graduate level course in the administration of individual intelligence tests and had had supervised experience in the administration of the WISC. All examiners met the criteria used by the Alachua County School System to select personnel to administer intelligence tests within the public schools. Four of the examiners were graduate students in the Department of Special Education at the University of Florida. The other two held masters degrees in educational counseling.

Method

The design of the study provided that each of the 96 subjects would be given the complete Wechsler Scale (10 subtests) by both a Black and a White examiner with a seven-day interval between test administrations. Each of the Black examiners was paired with a White examiner so that each of the three examiner pairs administered 64 tests to 32 students, half Black and half White, 16 at the elementary grade level and 16 at the middle grade level. In order to distribute retest effects between races and among examiners, each examiner alternated testing Black and White students first and second so that at the conclusion of the study each examiner had tested equal numbers of Black and White students first and second at both grade levels.

Limitations of the Study

The children included in this sample had a mean age of 8.6 in the elementary school group and a mean age of 13.5 in the middle school group. The findings of this study many not generalize to other age groups.

Also, the present sample might not have been representative of the general population of school children in the second and third and seventh and eighth grades. The subjects in this study were representative of a southern community where many Blacks and Whites maintained a marginal subsistence-level standard of living.

Although the subjects were randomly assigned to examiner pairs, they were not randomly selected, and the administrators at the two schools may have referred students who differed in some aspects from the general population of students.

The limitations of using a complex statistical procedure with a relatively small sample of subjects and levels of the independent variable are recognized.

Hypotheses:

Null Hypothesis I

Ho: There is no significant difference between the individual intelligence test scores of Black students in the second and third grades when tested by Black and White examiners.

Null Hypothesis II

Ho: There is no significant difference between the individual intelligence test scores of Black students in the seventh and eighth grades when tested by Black and White examiners.

Null Hypothesis III

Ho: There is no significant difference between the individual intelligence scores of White students in the second and third grades when tested by Black and White examiners.

Null Hypothesis IV

Ho: There is no significant difference between the individual intelligence scores of White students in the seventh and eighth grades when tested by Black and White examiners.

Data Analysis

Analysis of variance techniques using a factorial with replications design were employed to test the hypotheses. The analysis was performed by the University of Florida Computing Center using the Bi-Med 08V program. The .05 level of significance was used to test all hypotheses.

CHAPTER FOUR

RESULTS

The sample in the present study consisted of 24 Black and 24 White children in the second and third grades and 24 Black and 24 White children in the seventh and eighth grades.

Table I presents the mean ages and standard deviations for Black and White subjects at the elementary school level and at the middle school level.

TABLE I

MEAN AGE OF STUDENTS

Black Elementary School Subjects	White Elementary School Subjects
$\bar{x}$ = 8.6 years	$\bar{x}$ = 8.5 years
s = 9.8 months	s = 7.2 months
Black Middle School Subjects	**White Middle School Subjects**
$\bar{x}$ = 13.2 years	$\bar{x}$ = 13.7 years
s = 9.2 months	s = 12.1 months

Table 2 presents the analysis of variance summary table for the data. Reference to the table shows that the main effect, student race, has an F-ratio of 20.406, which is significant at the .05 level. This result was expected in view of previous research. The present study was not designed to test differences in IQ scores between Black and White subjects.

TABLE 2

ANALYSIS OF VARIANCE SUMMARY TABLE

	Source	SS	DF	MS	F
1.	Examiner pair	423.68	2	211.84	.4015
2.	Order	1740.02	1	1740.02	7.3446
3.	Student race	11011.02	1	11011.02	20.4060*
4.	Grade level	44.08	1	44.08	.0326
5.	Examiner race	16.33	1	16.33	.1870
6.	Examiner Pair x order	473.82	2	236.91	.4490
7.	Examiner Pair x student race	1079.19	2	539.59	1.0227
8.	Order x student race	270.74	1	270.74	3.4240
9.	Examiner Pair x grade level	2702.88	2	1351.44	2.5613
10.	Order x grade level	462.52	1	462.52	.5123
11.	Student race x grade level	172.52	1	172.52	2.5535
12.	Examiner pair x Examiner race	174.70	2	87.35	3.2066*
13.	Order x Examiner race	3120.18	1	3120.18	76.7795*
14.	Student race x Examiner race	20.022	1	20.022	.3538
15.	Grade level x Examiner race	16.33	1	16.33	.1972
16.	Examiner pair x order x student race	158.14	2	79.07	.1499

	Source	SS	DF	MS	F
17.	Examiner pair x order x grade level	1805.75	2	902.87	1.7112
18.	Examiner pair x Student race x Grade level	135.12	2	67.56	.1280
19.	Order x Student race x Grade level	36.74	1	36.74	.0291
20.	Examiner pair x Order x Examiner race	81.28	2	40.64	1.4919
21.	Examiner pair x Student race x Examiner race	113.18	2	56.59	2.0775
22.	Order x Student race x Examiner race	27.00	1	27.00	.6000
23.	Examiner pair x Grade level x Examiner race	165.63	2	82.81	3.0402
24.	Order x Grade level x Examiner race	67.68	1	67.68	6.3860
25.	Student race x Grade level x Examiner race	67.68	1	67.68	.3542
26.	Examiner pair x Order x Student race x Grade level	2522.77	2	1261.38	2.3906
27.	Examiner pair x Order x Student race x Examiner race	89.95	2	44.97	1.6511
28.	Examiner pair x Order x Grade level x Examiner race	21.19	2	10.59	.3891

	Source	SS	DF	MS	F
29.	Examiner pair x Student race x Grade level x Examiner race	382.20	2	191.10	7.0153**
30.	Order x Student race x Grade level x Examiner race	56.33	1	56.33	7.8781
31.	Examiner pair x Order x Student race x Grade level x Examiner race	14.30	2	7.15	.2625

* $p > .05$

** $p > .01$

Table 2 shows an F-ratio of 3.206 for the interaction, examiner pair X examiner race, which is significant at the .05 level. Table 3 presents the mean Full Scale scores of Black and White subjects tested by the Black and the White examiner within each pair. Post-hoc t-tests comparing means showed no significant difference between the Black and the White examiner in each pair.

TABLE 3

MEAN FULL SCALE IQ SCORES OF BLACK AND WHITE SUBJECTS BY EXAMINER PAIRS

	Black Examiner	White Examiner	t
Pair I	95.312	92.0312	t=.5714
Pair II	96.187	96.937	t=.1306
Pair III	92.812	93.593	t=.1360

$p > .05 = 2.920$ (n = 32 for each mean)

Reference to Table 2 shows an F-ratio of 76.775 for the interaction, order X examiner race, which is significant at the .05 level. Table 4 presents the mean Full Scale scores and standard deviations for all subjects tested first by the Black and by the White examiners and second by the Black and White examiners. The table shows an average increase of approximately eight points on the second test for all subjects regardless of examiner race.

TABLE 4

MEAN FULL SCALE IQ SCORES OF ALL SUBJECTS
BY ORDER OF TESTING AND EXAMINER RACE

First Test	Second Test
Black Examiners	White Examiners
93.75 s = 19.55	101.22 s = 21.55
White Examiners	Black Examiners
87.14 s = 14.01	95.79 s = 16.11

Table 2 shows that the interaction, examiner pair X student race X grade level X examiner race has an F-ratio of 7.015, which is significant at the .01 level. Due to the complexity of interpretation of a fourth-order interaction, no definitive explanation is offered for this result.

Discussion of Results by Hypotheses

Null Hypothesis I

Ho: It was stated that there is no significant difference between the intelligence test scores of Black students in the second and third grades when tested by Black and White examiners. No significant difference was found: therefore, the null hypothesis was accepted.

Null Hypothesis II

Ho: It was stated that there is no significant difference between the intelligence test scores of Black students in the seventh and eighth grades when tested by Black and White examiners. No significant difference was found: therefore, the null hypothesis was accepted.

Null Hypothesis III

Ho: It was stated that there is no significant difference between the intelligence test scores of White students in the second and third grades when tested by Black and White examiners. No significant difference was found: therefore, the null hypothesis was accepted.

Null Hypothesis IV

Ho: It was stated that there is no significant difference between the intelligence test scores of White students in the seventh and eighth grades when tested by Black and White examiners. No significant difference was found: therefore, the null hypothesis was accepted.

The analysis of variance summary table presented in Table 2 shows an F-ratio for student race X grade level X examiner race was .3542 which is not significant at the .05 level.

Table 5 shows the mean Full Scale scores of Black and White subjects at the elementary and middle school grade levels. Post-hoc t-tests performed with each of the pairs of means failed to reveal significant differences between scores of Black second and third grade students when tested by Black and White examiners; between Black seventh and eighth grade students when tested by Black and White examiners; between White second and third grade students when tested by Black and White examiners; and between White seventh and eighth grade students when tested by Black and White examiners.

Therefore, Hypotheses I, II, III, and IV were accepted.

TABLE 5

MEAN FULL SCALE IQ SCORES FOR BLACK AND WHITE ELEMENTARY AND MIDDLE SCHOOL SUBJECTS UNDER BLACK AND WHITE EXAMINERS

Black Subjects

	Black Examiners	White Examiners	t
Elementary	87.291	85.583	t = .4285
Middle	86.458	88.291	t = .4611

White Subjects

	Black Examiners	White Examiners	t
Elementary	103.791	103.166	t = .1566
Middle	101.541	99.700	t = .4614

$p > .05 = 2.920$

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

The findings of this study have shown that the individual intelligence scores of Black and White children in the present sample were not significantly affected by examiner race. Although the subjects were rural children, these results support the evidence provided by Solkoff (1971) that examiner race did not significantly affect IQ scores of urban school children. The evidence also supports the conclusions of Pelosi (1968) that examiner race, sex, or style did not affect the scores of Negro males on a variety of psychological tests. The results do not support the findings of Savage (1972) that examiner race significantly affected the scores of Black children on the Block Design subtest of the Wechsler Scale. However, the present study focused on Full Scale scores and did not attempt to assess examiner race effects on particular subtests within the WISC.

The statistically significant difference in IQ scores of Black and White subjects was expected in view of the hundreds of research reports which have found that as a group Negroes score lower than Whites on intelligence tests. Kennedy et al. (1961) concluded:

> What is needed, therefore, is not further evidence of differences between sample population scores, but broad normative data on a Negro sample to make intelligence test findings in this group more meaningful. (p. 42)

The mean Full Scale scores for the Black subjects and for the White subjects in this sample were 86.90 and 102.05, respectively. Since no Negroes were included in the standardization sample of the WISC, it is difficult to

interpret these differences. Kennedy et al. (1961) standardized the Revised Stanford-Binet Intelligence Scale on Negro elementary school children in the southeastern United States. The mean IQ for their standardization sample (N=1800) was 80.7 with a standard deviation of 12.4 compared to the mean of 100 with a standard deviation of 16 for the original standardization sample of the Stanford-Binet. The authors concluded:

> Although there was no significant trend in IQ from grades one through six, the IQ was negatively correlated with age. For instance, the five-year-old group had a mean IQ of 86 as compared with the mean IQ of the 13-year-old group of 65. (p. 144)

Zimmerman and Woo-Sam (1972) reported a study by Barclay and Carolan (1966) in which both the WISC and the Stanford-Binet were administered to groups of Black and White children, 7 and 12 years of age. They found insignificantly higher Binet mean scores at both age levels. These investigations lend support to the hypothesis that the Black subjects in the present sample may have been above average in mean intelligence while the White subjects were average in mean intelligence.

The significance of the findings from this study lies in the fact that the variability in scoring between Black and White examiners was very low. There was less than a two-point difference in mean scores between Black and White examiners at both grade levels with both Black and White subjects.

RECOMMENDATIONS

It would be valuable to replicate this study with larger groups of students at different age levels. No study of this nature has been done with high-school-age subjects. Yet many important educational and vocational decisions are made at the high school level on the basis of the results of psychological tests.

This study was concerned only with the Full Scale scores of each racial group. Research investigating the effects of examiner race and the interactions of examiner race with subject race and sex on each subtest within the WISC Scale would be fruitful. In addition to providing information about the types of intellectual tasks which might be affected by examiner-examinee race, this type of investigation would provide valuable information for educational administrators who employ Black and White teachers to implement curricula in integrated classrooms.

APPENDIX

TABLE 1

VERBAL, PERFORMANCE, AND FULL SCALE IQ SCORES
OF BLACK ELEMENTARY SCHOOL SUBJECTS TESTED
FIRST BY BLACK EXAMINERS AND
SECOND BY WHITE EXAMINERS

	Black Examiner			White Examiner		
	First Test			Second Test		
			PAIR I			
Subject	V	P	FS	V	P	FS
1	105	113	109	123	97	112
2	81	55	66	60	60	56
3	76	58	64	79	75	75
4	95	76	85	120	90	107
			PAIR II			
5	63	65	61	67	44	52
6	124	100	114	142	125	137
7	92	79	85	95	78	85
8	87	86	85	75	79	75
			PAIR III			
9	86	89	86	95	94	94
10	101	89	95	104	111	108
11	99	87	93	106	99	103
12	104	108	107	97	125	112

TABLE 2

VERBAL, PERFORMANCE, AND FULL SCALE IQ SCORES
OF BLACK MIDDLE SCHOOL SUBJECTS TESTED
FIRST BY BLACK EXAMINERS AND
SECOND BY WHITE EXAMINERS

	Black Examiner				White Examiner		
	First Test				Second Test		
				PAIR I			
Subject	V	P	FS		V	P	FS
13	101	115	109		121	113	119
14	90	100	94		106	99	103
15	65	71	64		70	74	69
16	63	79	68		67	72	67
				PAIR II			
17	76	92	82		82	101	91
18	91	90	90		99	108	104
19	94	101	97		97	115	107
20	72	82	75		75	92	81
				PAIR III			
21	81	93	85		89	114	101
22	75	96	83		86	106	95
23	72	87	77		81	101	90
24	61	79	67		69	87	75

TABLE 3

VERBAL, PERFORMANCE, AND FULL SCALE IQ SCORES
OF WHITE ELEMENTARY SCHOOL SUBJECTS TESTED
FIRST BY BLACK EXAMINERS AND
SECOND BY WHITE EXAMINERS

	Black Examiner				White Examiner		
	First Test				Second Test		
				PAIR I			
Subject	V	P	FS		V	P	FS
25	101	108	105		94	94	93
26	79	78	76		77	76	75
27	104	94	99		118	87	104
28	89	85	85		105	93	99
				PAIR II			
29	123	142	135		139	150	149
30	101	108	105		120	122	123
31	86	97	91		110	118	115
32	99	115	107		116	122	121
				PAIR III			
33	119	106	114		108	107	108
34	100	114	107		104	128	117
35	103	107	105		110	104	108
36	140	133	141		119	135	129

TABLE 4

VERBAL, PERFORMANCE, AND FULL SCALE IQ SCORES
OF WHITE MIDDLE SCHOOL SUBJECTS TESTED
FIRST BY BLACK EXAMINERS AND
SECOND BY WHITE EXAMINERS

	Black Examiner				White Examiner		
	First Test				Second Test		
				PAIR I			
Subject	V	P	FS		V	P	FS
37	109	87	99		125	106	117
38	116	118	119		129	117	125
39	150	136	148		155	143	154
40	77	79	76		95	92	93
				PAIR II			
41	79	72	73		86	83	83
42	115	113	116		129	114	124
43	120	103	113		120	120	122
44	92	93	92		87	100	93
				PAIR III			
45	75	104	88		92	100	96
46	91	87	88		87	92	88
47	96	100	98		106	115	112
48	90	71	79		89	99	93

TABLE 5

VERBAL, PERFORMANCE, AND FULL SCALE IQ SCORES
OF BLACK ELEMENTARY SCHOOL SUBJECTS TESTED
FIRST BY WHITE EXAMINERS AND
SECOND BY BLACK EXAMINERS

	White Examiner				Black Examiner		
	First Test				Second Test		
				PAIR I			
Subject	V	P	FS		V	P	FS
49	94	80	86		100	94	97
50	63	74	65		77	76	75
51	92	75	83		82	92	85
52	87	62	73		90	82	85
				PAIR II			
53	76	74	72		81	78	77
54	86	74	78		103	87	95
55	76	85	78		94	101	97
56	89	80	83		82	80	80
				PAIR III			
57	63	61	59		70	74	69
58	74	75	72		66	79	70
59	106	93	100		115	110	114
60	89	92	89		96	106	101

TABLE 6

VERBAL, PERFORMANCE, AND FULL SCALE IQ SCORES
OF BLACK MIDDLE SCHOOL SUBJECTS TESTED
FIRST BY WHITE EXAMINERS AND
SECOND BY BLACK EXAMINERS

	White Examiner				Black Examiner		
	First Test				Second Test		
				PAIR I			
Subject	V	P	FS		V	P	FS
61	80	75	75		84	107	94
62	82	78	78		81	110	94
63	114	106	111		113	120	117
64	100	78	88		108	82	95
				PAIR II			
65	69	85	74		80	90	83
66	94	96	94		94	94	93
67	81	79	78		81	87	83
68	92	69	80		92	76	83
				PAIR III			
69	92	90	91		97	92	94
70	76	85	78		74	93	81
71	82	76	77		80	76	76
72	91	97	93		91	93	91

TABLE 7

VERBAL, PERFORMANCE, AND FULL SCALE IQ SCORES
OF WHITE ELEMENTARY SCHOOL SUBJECTS TESTED
FIRST BY WHITE EXAMINERS AND
SECOND BY BLACK EXAMINERS

	White Examiner			Black Examiner		
	First Test			Second Test		
			PAIR I			
Subject	V	P	FS	V	P	FS
73	99	108	104	99	129	115
74	80	71	73	81	93	85
75	118	114	117	121	131	128
76	86	83	83	101	106	104
			PAIR II			
77	85	78	80	87	82	83
78	123	118	123	131	121	129
79	105	94	100	86	101	93
80	85	113	98	82	110	95
			PAIR III			
81	105	107	107	108	104	107
82	91	96	93	110	113	112
83	71	65	65	80	67	71
84	96	89	92	97	100	99

TABLE 8

VERBAL, PERFORMANCE, AND FULL SCALE IQ SCORES
OF WHITE MIDDLE SCHOOL SUBJECTS TESTED
FIRST BY WHITE EXAMINERS AND
SECOND BY BLACK EXAMINERS

	White Examiner			Black Examiner		
	First Test			Second Test		
			PAIR I			
Subject	V	P	FS	V	P	FS
85	75	74	72	72	94	81
86	96	85	90	111	114	114
87	94	96	94	95	124	109
88	84	90	85	96	115	106
			PAIR II			
89	104	107	106	126	121	126
90	87	75	80	86	97	91
91	110	104	108	111	129	122
92	104	111	108	114	136	127
			PAIR III			
93	75	85	77	81	90	84
94	95	87	91	95	100	97
95	85	90	86	85	80	81
96	95	97	96	101	118	110

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The author was born in Louisville, Kentucky on January 1, 1937. Her undergraduate training began in 1954 at Centre College in Danville, Kentucky and was completed in June, 1968, when she was awarded a Bachelor of Arts degree in psychology from the University of Florida. In August, 1968, she was awarded an NDEA fellowship to pursue graduate study in the field of learning disabilities, Department of Special Education, at the University of Florida. She was awarded a Master of Arts degree in August, 1969.

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The author is married to Charles G. Wellborn, Jr., Associate Professor, College of Journalism and Communications, University of Florida. They have three children, Bill, Ricky, and Linda.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

William R. Reid

William R. Reid, Chairman
Professor of Special Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Cary L. Reichard

Cary L. Reichard, Co-chairman
Assistant Professor of Special Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Myron A. Cunningham

Myron A. Cunningham
Professor of Special Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

James E. Whorton

James E. Whorton
Assistant Professor of Special Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Richard J. Anderson

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This dissertation was submitted to the Dean of the College of Education and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

August, 1972

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