SELF-CONCEPT OF ABILITY, SIGNIFICANT OTHERS AND SCHOOL ACHIEVEMENT OF EIGHTH-GRADE STUDENTS: A COMPARATIVE INVESTIGATION OF NEGRO AND CAUCASIAN STUDENTS

Thesis for the Degree of M. A.

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Richard Johnson Morse

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A Thesis

Submitted to the College of Social Science of Michigan State University of Agriculture and Applied Science

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of the Requirements for the Degree

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ABSTRACT

The purpose of this analysis was to investigate the relationship between classroom learning and self-image among Negro and Caucasian students in the urbanized and industrialized Midwest. A particular concern of the investigation was the differential interaction between self-concept and classroom achievement among Negro and Caucasian students. It was anticipated that ethnic differences would have a pronounced effect upon the relationship between the two variables. The specific purpose of this investigation, then, was to investigate systematically the relationship between self-concept and classroom learning among both Negro and Caucasian students in the social conditions mentioned above, and to compare systematically the two sets of findings thus obtained.

The total sample for this investigation consisted of practically all eighth-grade students in one middle-sized, urban-industrialized social setting in the Midwest. The Negro and Caucasian samples consisted of 114 and 1432 students, respectively. The two samples included students from each of four junior high schools in the community thus described.

The major thesis or proposition advanced in this investigation, which was tested in the form of three specific hypotheses, was drawn from the symbolic interactionist theory of human behavior. It stated that self-concept of ability is a functionally limiting factor in school achievement. The three specific hypotheses were formally stated as follows:

1. The self-concepts of ability of Negro and Caucasian students are related to their achievement when intelligence is controlled.
2. The self-concepts of ability in specific school subjects of Negro and Caucasian students vary from one subject to the other and from their general self-concepts of ability.
3. The expectations of significant others as perceived by Negro and Caucasian Students are positively correlated with the students' self-concepts as learners and with their classroom achievement.

The evidence presented in support of Hypotheses 1 and 3, and for both the Negro and Caucasian students, gave strong support for the hypotheses. The evidence presented in support of Hypothesis 2, while not quite as conclusive, indicated that the hypothesis is tenable. It was therefore concluded that the major thesis advanced in this investigation is tenable.

The major findings of the comparative aspect of this investigation may be listed as follows:

1. Except for three of the variables investigated, the mean scores obtained by the Caucasian students were all significantly greater than the mean scores obtained by the Negro students. The three scales on which the Negro students scored higher were: (1) the Self-Concept in English

Scale; (2) the Total Importance of Grades Scale; and (3) the Total Image of Parents Scale.

2. The data indicated a significantly higher level of motivation to achieve in school work among the Negro students than among the Caucasian students.

3. The Negro students' mean score for all of the actual achievement variables (Total GPA and grades in mathematics, English, social studies, and sciences) were significantly lower than the Caucasian students' mean scores.

4. Self-concept of ability is positively related to school achievement among both the Negro and Caucasian students. The relevant coefficients of correlation were .426 for the Negroes and .610 for the Caucasians.

5. Self-concept of ability is positively related to classroom achievement when intelligence is controlled among both Negro and Caucasian students. The relevant coefficients of correlation were .406 among the Negroes and .475 among the Caucasians.

6. Self-concept of ability is a better predictor of classroom achievement than IQ for both the Negro and Caucasian students. The obtained beta weights (in the multiple correlation among GPA,

IQ, and S-C) were .416 for self-concept and .032 for IQ among the Negroes, and .442 for self-concept and .362 for IQ among the Caucasians.

7. IQ is weighted significantly higher as a predictor of achievement among the Caucasian students than it is among the Negro students. The comparative beta weights (as noted above) were .032 for Negroes and .362 for Caucasians.

8. The hypothesis that self-concepts of ability in specific school subjects vary from one subject to the other and form the general self-concept of ability was substantiated among both the Negro and Caucasian students.

9. The hypothesis that a students' self-concept of ability is positively and significantly related to the images he perceives significant others to hold of him is tenable for both the Negro and Caucasian students, when parents, teachers, and peers are identified as significant others.

10. The hypothesis that a student's classroom achievement is positively and significantly related to the images he perceives significant other persons to hold of him is tenable for both the Negro and Caucasian students when parents, teachers, and peers are identified as the significant other persons.

11. The relationship between students' general self-concepts of ability and the images they perceive their favorite teachers to hold of their abilities is significantly greater among the Caucasian students than among the Negro students. The obtained coefficients of correlation were .533 for the Caucasians and .440 for the Negroes.

12. The relationship between students' general self-concepts of ability and the images they perceive their parents to hold of their abilities is significantly greater among the Negro students than among the Caucasian students. The obtained correlation coefficients were .696 for the Negroes and .212 for the Caucasians.

13. The relationships between students' general self-concepts of ability and the images they perceive their peers to hold of their abilities is significantly greater among the Negro students than among the Caucasian students. The relevant coefficients of correlation were .439 for the Negroes and .235 for the Caucasians.

14. The relationship between students' grade point averages and the images they perceive their parents to hold of their abilities is significantly greater among the Negro students than among the Caucasian students. The obtained coefficients of correlation were .369 for the Negroes and .145 for the Caucasians.

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I wish to express my sincere gratitude to Professor James B. McKee of the Department of Sociology and Anthropology, my major advisor, for his untiring interest and timely suggestions during the development and consumation of this thesis. I wish further to thank Professor McKee for the aid and concern he has given me throughout the first stage of my graduate studies.

The data reported in this thesis are part of a larger investigation being conducted by Professor Wilbur B. Brookover of the Bureau of Educational Research, Michigan State University. That research is being subsidized under a grant made by the Cooperative Research Program of the Office of Education, U.S. Department of Health, Education, and Welfare. I am deeply indebted to the above named for the use of the data.

I wish also to acknowledge the committee who administered the oral examination for this thesis: Professor James B. McKee, Chairman, and Professors Wilbur B. Brookover and Archie O. Haller. A special note of thanks is directed to them for their services.

Finally, I owe notes of gratitude to Shailer Thomas and Ronald L. Johnson. To Mr. Thomas, Research Assistant in the Bureau of Educational Research, Michigan State University, for introducing me to the data contained in this thesis and offering many useful suggestions throughout the

analysis. And to Mr. Johnson for his priceless contribution of time and effort in assisting in the task of assuring the statistical accuracy of the results obtained and reported in this thesis.

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CHAPTER I

INTRODUCTION

A. Contents of This Chapter

In this introductory chapter the problem of the thesis is introduced. Both general and specific statements of the problem are set forth. Also included in this chapter are a brief statement of the importance of the investigation and a general outline of the organization of the investigation in terms of chapters and their contents. The main theoretical principles introduced in the statement of the problem will be expanded in Chapter II.

B. The Problem

General statement of the problem. One of the gravest tasks facing contemporary American society is that of producing enough specialists to occupy her vast proliferation of specialized positions. Certainly, the demands for highly trained personnel are far greater than the present supply. And it seems reasonable to suppose that the current trend towards specialization will continue; and, indeed, the future demands for highly trained specialists will be even greater than they presently are. Future American society, then, will demand a citizenry of highly trained men and women with high levels of both general and technical education.

The implications which this state of affairs holds for the American educational system are unmistakable--the future will demand that an increasingly high proportion of Americans be educated and, indeed, that they be educated at increasingly high levels. Unfortunately, however, it seems that the American educational system is not yet oriented to the education of such vast numbers of highly trained persons. Mass education is a relatively new concept in American educational philosophy. The previous view, which is still widely held, envisioned higher educational attainments as possible for only a limited number of persons.[1] One prominent writer on the subject, for instance, has posited that only 15-20 per cent of American, high-school youths can profit by a curriculum conducive to college studies.[2] Thus, having been guided by principles that posit "limited talent," the American educational system has done little to encourage its students, in any great proportions, to pursue studies in the more advanced and/or "difficult" fields of learning. To be sure, it has even discouraged such endeavors on the part of a majority of its students. Brookover, in commenting on this matter, has observed that:

> Our school system at all levels--elementary, secondary, and higher education--has been designed to

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[1] Wilbur B. Brookover, "A Social Psychological Conception of Classroom Learning," School and Society, 87 (February, 1959), p. 84.

[2] James B. Conant, The American High School Today, (New York: McGraw-Hill Book Company, 1959), p. 20.

> separate and screen the student body so that only a minor proportion would pursue training for roles as scientists, professors, lawyers, engineers, and a select group of other occupational leaders.[3]

The majority of American youths, then, have been directed towards more modest levels of educational attainment.

Certainly, the above state of affairs presents for American society a serious problem--a dilemma, much of which might be the by-product of faulty assumptions. On the one hand, America has chosen to follow the road of scientific expansion, with its great demands for increasingly high levels of training in all fields of learning. On the other hand, she has devised a philosophy of learning which holds that only a relatively small and/or constant proportion of her citizens are capable of achieving such high levels of learning.

The current means of facing this dilemma is one of maximizing the identification and exploitation of the "limited talent" where it exists. Recently, however, a new and revolutionary approach to the problem has begun to emerge--an approach which makes the revolutionary assumption that ability to master the more advanced or difficult fields of learning may be developed, given the proper social inducements. This point of view is suggested by the frameworks

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[3] Wilbur B. Brookover, loc. cit.

of both perceptual psychology[4] and the symbolic interactionist approach to human behavior.[5] It has perhaps received its fullest exposition in the work of Brookover.[6] From this point of view, "All behavior of the individual is meaningful from the point of view of the individual. The best understanding and prediction of behavior (learning) would thus come from knowledge of the individual's perception of the situation."[7] It is held, therefore, that any investigation of what an individual does learn, and what he is capable of learning, must necessarily inquire as to his perception of what he feels he is capable of learning.[8]

If the foregoing assumptions are valid, an empirical demonstration of their validity would greatly clarify a

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[4] For an elaboration of this framework, see Arthur W. Combs and Donald Snygg, Individual Behavior, Revised Edition (New York: Harper and Brothers, 1959) and Arthur W. Combs, "Intelligence from a Perceptual Point of View," Journal of Abnormal and Social Psychology, 47 (July, 1952) pp. 662-673.

[5] For an elaboration of this framework, see Tamotsu Shibutani, Society and Personality (Englewood Cliffs, N.J., Prentice-Hall, Inc., 1961) pp. 22-25; 32-54; 64-70; 97-127; and 293-293.

[6] Wilbur B. Brookover, op.cit., pp. 84-87; and Wilbur B. Brookover, et.al., Self-Concept of Ability and School Achievement: Final Report of Cooperative Research Project No. 85, (East Lansing, Michigan: Office of Research and Publications, Michigan State University, 1962).

[7] Wilbur B. Brookover, et.al., "The Relationship of Self Image to Achievement in Junior High School Students," (Mimeographed), p. 1.

[8] Ibid.

crucial aspect of American educational philosophy. Indeed, American society would no longer need to suffer the handicap of "an insufficient supply of the presumably biologically gifted learners. On the other hand, the possibilities would be limited primarily by our ability to create the kind of social situation in which the desired learning would occur."[9] The general focus of this thesis is, therefore, the presentation of some empirical findings of an investigation of one avenue through which, it is felt, the learning of American students might be expanded--the students' self-images as school learners.

The research currently in process by the Bureau of Educational Research, Michigan State University, focuses upon this very same problem. The Bureau of Educational Research is asking a series of questions pertinent to the relation of self-concept of ability to school achievement:

1. To what extent are the relevant self-images of junior high school students as learners generalized to all school subjects and to what extent are they specific to particular school subjects?

2. How do the self-images of seventh grade students as learners differ by I.Q., sex, and family background?

3. How do the self-images of seventh grade students as learners differ by school achievement with sex, I.Q., and family background controlled?

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[9] Wilbur B. Brookover, "A Social Psychological Conception of Classroom Learning," School and Society, 87 (February, 1959), p. 87.

4. Who are the relevant significant others to whom seventh grade students relate themselves in examining their behavior as school learners?

5. How do the significant others of seventh grade students differ by sex, family background, and achievement levels of the students?[10]

The Bureau of Educational Research plans to use the information obtained in answer to these questions as the foundation for an experiment in increasing school achievement through the modification of self images, an anticipated second phase of their research. The answers to the above questions will also provide data to test several relevant hypotheses implied in the questions.

Inasmuch as knowledge with regards to the relation of self-concept of ability to achievement might be increased greatly as a result of the above research, the investigation suffers from one major limitation--it is being conducted solely among members of the dominant, American society. The systematic investigation of self-evaluation as it relates to school achievement among minority youth, particularly Negro youth, has been excluded, since it was felt that the racial factor would significantly influence self-concept. Consequently, knowledge regarding the relevant variables typical within such groups, which significantly influence

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[10] Wilbur B. Brookover, "Relationship of Self-Images to Achievement in Junior High School Subjects," (Mimeographed application, transmitted to the Commissioner of Education, U.S. Office of Education, Department of Health, Education, and Welfare), pp. 2-4.

their self-concepts and, hence, their levels of achievement, will not be forthcoming from the investigation.

Specific statement of the problem. The specific purpose of the research reported in this thesis, then, was to extend and complement the research currently in process by the Bureau of Educational Research through: (1) a systematic study of the relationship between self-concept and achievement among students of both the dominant group and one minority group--Negroes; and (2) a systematic-descriptive comparison of this minority group with the dominant group. More specifically, the aim of this research was to (1) replicate, using both Negro and Caucasian subjects, the first stage of the longitudinal investigation currently in process by the Bureau of Educational Research; and (2) place these findings in a broader perspective through a systematic, descriptive-comparative analysis.

Importance of the investigation. The importance of this study lies in the fact that it (1) affords a relatively definitive replicate test of the propositions and hypotheses advanced in the parent study, among both minority and majority youths; and (2) places these findings in a broader perspective through a systematic, comparative analysis, thus affording some implications of the influence of "racial" (or, better, minority-group status and/or ethnicity) factors upon self images. Further, the findings of this research provides the foundation for an experiment in increasing

achievement among Negro subjects, though such an experiment does not constitute a part of this investigation. Finally, though the comparative aspect of this investigation is primarily descriptive, it is felt that it will reveal the types of research questions that might lead to a higher level of school achievement among minority youths. Indeed, it is felt that the comparative aspect of the research will afford some concrete or practical implications for school teachers and administrators, who are necessarily concerned with the problem posed by the relatively low levels of achievement among minority youths. The comparative analysis, then, is expected to shed more light on the relevant variables typical within the Negro-youth subculture that significantly influence their self-concepts and, hence, their classroom achievement. Knowledge in this area, it is felt, could increase greatly the understanding of the internal dynamics in the social life of Negro youths in American society, particularly with reference to their social mobility, acculturation, assimilation, and other general aspects of social dynamics.

C. Plan and Content of this Thesis

In this introductory chapter the research problem has been set forth; the problem has been stated in both general and specific terms. And the importance of the investigation has been spelled out.

In Chapter II the theoretical background of the

investigation is made more explicit. The statement of the theoretical frame of reference is preceded by a somewhat selective review of the relevant literature; it is followed by the major proposition of the investigation, which is followed by the three specific hypotheses that are tested in the investigation.

Chapter III deals solely with the methodological procedures. In that chapter the following are set forth: (1) a brief description of the samples used in the investigation; (2) the operational definitions of terms and a description of the research instruments; (3) a description of the statistics used to test the hypotheses; and (4) a description of the method of comparative analysis.

Chapter IV constitutes the central core of the analysis. It deals specifically with the statistical tests of the three specific hypotheses which the present investigation was designed to test. Also in that chapter the comparative data are presented. The chapter is considered central to the present analysis because (1) it provides the statistical test of the major theoretical proposition advanced at the outset of the investigation; and (2) it provides a comparison of the minority-group data with that obtained from the dominant group. The latter aspect of the present investigation is particularly significant in that it provides valuable information with regards to the influence of minority-group status and/or ethnicity upon self-evaluation.

In Chapter V the investigation is concluded. That chapter consists of a brief summary of all the chapters that preceded it. The major focus of the chapter, however, is upon the research findings and the theoretical implications that they hold. Also, a number of suggestions for further research are set forth in Chapter V.

D. Summary of Chapter

In this chapter the main thesis of the study has been introduced. The need for the systematic investigation of self-evaluation as it relates to school achievement among minority youth was stressed. The justification of this study was stated as follows: (1) it affords a relatively definitive retest of the several hypotheses advanced in an earlier study, among both majority and minority-group youths; and (2) it places these findings in a broader perspective through a systematic comparative analysis, thus affording some implications of the influence of minority-group status (and/or ethnicity) upon self-images. The major thesis of the study will be further elaborated in the following chapter, where the theoretical framework and major proposition of the study are set forth.

CHAPTER II

THE THEORETICAL FRAME OF REFERENCE AND STATEMENT OF THE HYPOTHESES

A. Contents of This Chapter

The purpose of this chapter is threefold: first, a selective review of the relevant literature is presented. The literature selected for this review provides the empirical basis for the major theoretical proposition that this research was designed to test. Secondly, the theoretical frame of reference is delineated and made more explicit. And finally, the major theoretical proposition and the three specific hypotheses are formally stated.

B. Review of the Literature*

Although the self has long occupied a central position in the symbolic interactionist approach to social psychology, its employment in empirical research has been relatively scant.[1] Several reasons may be cited to account

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*For a more comprehensive review of the literature on the self-concept, see Ruth C. Wylie, The Self-Concept (Lincoln: University of Nebraska Press, 1961).

[1] L. S. Cottrell, "Some Neglected Problems in Social Psychology," American Sociological Review, 15 (1960), pp. 705-712; Malcolm M. Helper, "Learning Theory and the Self-Concept," Journal of Abnormal and Social Psychology, 51 (1950), p. 148; M. Manis, "Social Interaction and the Self-Concept," Journal of Abnormal and Social Psychology, 51 (1955), p. 362; and Richard Videbeck, "Self-Concept and the Reaction of Others," Sociometry, 23 (December, 1960), p. 351.

for this. Perhaps the most general reason centers around the difficulty of translating the theories of the symbolic interactionist tradition into testable hypotheses.[2] But, perhaps, more specifically, the reason lies in the lack of consensus regarding the class of phenomena to which the self ought to be operationally ordered.

> The self has been called an image, a conception, a concept, a feeling, an internalization, a self looking at oneself, and most commonly simply the self (with perhaps most ambiguous implications of all). One of these designations of the self has been attitudes...[3]

Yet, in spite of these difficulties, the last decade has been marked by some initial advances in the empirical investigation of various notions of self and/or self-conceptions. The findings of some of these investigations are summarized below.

Several researches have been reported which were primarily concerned with the development of measures capable of distinguishing between subjects with high and low self-esteem (self-conceptions) and/or between subjects who exhibit reality-based and defensive responses.[4]

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[2] Frank S. Miyamoto and Sanford M. Dornbusch, "A test of the Interactionist Hypothesis of Self-Conception," American Journal of Sociology, (May, 1956), p. 399.

[3] Manford H. Kuhn and Thomas S. McPartland, "An Empirical Investigation of Self Attitudes," American Sociological Review, 19 (February, 1954), p. 68.

[4] James F. T. Bugental and Zelen L. Seymour, "Investigations into the Self-Concept," Journal of Personality, 18 (1950), pp. 483-498; Stanley Coopersmith, "A Method for Determining Self-Esteem," Journal of Abnormal and Social Psychology, 59 (1959), pp. 87-94; and Manford H. Kuhn and Thomas S. McPartland, op. cit., pp. 68-76.

Coopersmith,[5] for example, reports a method of determining self-esteem based upon several measures: (a) a subject's response to the "Self-Esteem Inventory" (constructed on the basis of items selected from the Rogers and Dymond Scale[6]); (b) a rating of certain of his (the subject's) behaviors presumably related to self-esteem; and (c) information on a constellation of experimental and motivational variables. Coopersmith found, for a group of 10 - 12 - year old children, substantial agreement between self-evaluation and behavioral expressions in a majority of the cases. He also found that persons who had more success experience were significantly higher in self-evaluation than individuals with fewer such experiences. High test-retest reliability was reported for both the Self-Esteem Inventory and the behavioral rating scales.

Another ingenious effort to develop a measure of self-conception (which has been expanded and modified since the reference here cited) was reported by Kuhn and McPartland.[7] They attempted to demonstrate the advantages to empirical

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[5] Coopersmith, loc. cit.

[6] C. Rogers and R. Dymond, Psychotherapy and Personality Change (Chicago: University of Chicago Press, 1954).

[7] Kuhn and McPartland, loc. cit.

research from treating the self as attitudes. The device which they constructed to identify and measure self-attitudes consisted of a single sheet of paper, giving the following instructions:

> There are twenty numbered blanks on the page below. Please write twenty answers to the simple question "Who am I?" in the blanks. Just give twenty different answers to this question. Answer as if you were giving the answers to yourself, not to somebody else. Write the answers in the order that they occur to you. Don't worry about logic or "importance." Go along fairly fast, for time is limited.[8]

The instrument was initially administered to a sample of undergraduate students. It was found that the number of responses per respondent evoked by these instructions varied from twenty to one or two, the median number of responses per respondent being seventeen. These responses (which took the general form: "I am ....." frequently omitting the "I am ...." e.g., "a student," "an athlete," etc.) were dealt with by a form of content analysis.

> ... categorized dichotomously either as consensual references or as subconsensual references. These content categories distinguished between statements, which refer to groups and classes whose limits and conditions of membership are matters of common knowledge, i.e., consensual; and those which refer to groups, classes, attributes, traits, or any other matters which would require interpretation by the respondent to be precise or place him relative to other people, i.e., subconsensual.[9]

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[8] Ibid., p. 69.

[9] Ibid., p. 69.

The following were cited as examples of the consensual variety: "student," "girl," "husband," i.e., "statements referring to consensually defined statuses and classes."[10] Examples of the subconsensual variety were also cited: "bored," "happy," "sad," etc., i.e. "statements ...with reference to consensual classes obscured by ambiguous modifications."[11]

Kuhn and McPartland reported high reliability for the assignment of responses to these content categories by different analysts, "... differences in categorization between two judges occuring less than three times in one hundred responses."[12] When the responses were grouped, several outstanding features were obvious.

> Subjects tended to exhaust all of the consensual references they would make before they made (if at all) any subconsensual ones... The number of consensual references made by respondents varied from twenty to none ...[13]

In the research on which their initial test of the instrument was performed, all consensual references were placed on one side of a dichotomy, while "none-responses" were combined with the subconsensual references on the other.

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[10] Ibid., p. 70.

[11] Ibid., p. 70.

[12] Ibid., p.70.

[13] Ibid., p. 70.

An individual subject's "locus score" was simply the number of consensual references he made on the "Twenty-Statements" Test.

The above mentioned characteristics of the "Twenty-Statements" Test satisfied the definition of a Guttman Scale. The coefficient of reproducibility reported for the scale, based on 151 respondents, was .903. The test-retest reliability of the scale was approximately +.85.

In order to assess the pragmatic success or failure of their technique, Kuhn and McPartland correlated differential religious affiliation with locus scores derived from their self-attitudes instrument--"Twenty-Statements" Test. The evidence thus provided gave support to the following empirically grounded inferences:

1. "The consensual (more directly socially anchored component of the self-attitudes) are at the top of the hierarchy of self-attitudes.

2. "Persons vary over a rather wide range in the volume of consensual and subconsensual components in their self-conceptions ...

3. "The variation included in (1) and (2) can be established and measured by the empirical techniques of attitude research--specifically, the Guttman Technique ...

4. "Locus scores vary with religious affiliation, as our initial validation test shows, members of 'differentilistic' religious groups having significantly higher locus scores than do members of the 'conventional' religious groups ...

5. "Religious affiliation references are significantly more salient among the self attitudes of members of "differentilistic' religious groups than among members of 'majority' or conventional religious groups.

6. "Corroboratively, the religious group as a reference group appears far more frequently as an answer to a direct question among those made by members of 'differentialistic' religious groups."[14]

Other researchers have concerned themselves with the nature and origins of self-conceptions. Several investigators have recently reported findings that sustain the general view that one's self-conception is learned from the reactions of other individuals to him.[15]

Helper,[16] for instance, reported small, but consistent positive correlations between parental evaluations and children's self-evaluations. Similarly, Miyamoto and Dornbusch[17] reported findings that indicated that the responses, or at least the attitudes, of others is related to self-conception. They also reported that the subject's perception of that response is even more clearly related to his personal image of himself. And, even more significantly, they reported that an individual's self-conception is more closely related to his estimate of the generalized attitude

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[14] Ibid., p. 75.

[15] Malcolm M. Helper, "Parental Evaluation of Children and Children's Self-Evaluation," Journal of Abnormal and Social Psychology, 56 (1958), pp. 190-194; M. Manis, op. cit., pp. 362-370; Miyamoto and Dornbusch, op. cit., pp. 399-403; and Videbeck, op. cit., pp. 351-359.

[16] Helper, loc. cit.

[17] Miyamoto and Dornbusch, loc. cit.

toward him than to the perceived attitudes or responses of members of a particular group. Manis,[18] likewise, reported findings which supported the view that one's self-conception is influenced by others' perceptions of him. But he found no tendency for the self-estimates to affect the views of one held by others. He further reported only partial support for the contention that the self-concept is no different from other beliefs. And, finally, Videbeck[19] attempted to test the proposition (that one's self-conception is learned from the reactions of others), but in a more direct fashion--by experimentally varying the reactions of others and observing subsequent changes in self-ratings. His findings supported the general proposition that "self-conceptions are learned, and the evaluative reactions of others play a significant part in the learning process."[20] Further, Videbeck's data supported the hypothesis that "one's self-conception is an organization of discrete self-ratings which are utilized by the principle of stimulus generalization."[21]

Though an extensive perusal of the literature failed to reveal any studies which focused primarily upon the

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[18] Manis, loc. cit.

[19] Videbeck, loc. cit.

[20] Ibid., p. 359.

[21] Ibid.

identification of students' self-conceptions as learners in specific subject matter areas and the relation of such self-conceptions to achievement in specific school subjects, several of the above studies provided valuable implications for the theoretical propositions which are to follow. Even more relevant for the purposes of this investigation, however, are the following investigations, with which this selective review of the literature is concluded.

Using college students as subjects, Roth[22] investigated the relationship between self-concept and reading improvement. The basic proposition in his research was that there would be significant differences in the self perceptions of subjects who improved, did not improve, and dropped out in a college reading improvement program. The data obtained gave support to the general proposition. Further, support for the proposition was indicated by "findings such as changes in self-concept and grade point average ..."[23] Thus, Roth concluded:

> "... those who achieve as well as those who do not, do so as a result of the needs of their own self systems."[24]

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[22] R. M. Roth, "The Role of Self-Concept in Achievement," Journal of Experimental Education, 27 (June, 1959), pp. 265-281.

[23] Ibid., p. 281.

[24] Ibid., p. 281.

Bodwin[25] investigated the relationship between "immature" self-concepts, which he defined "in terms of self confidence, freedom to express appropriate feelings, liking for oneself, satisfaction with one's attainments, and feelings of personal appreciation by others,"[26] and certain educational disabilities, mainly reading and arithmetic. The findings of this investigation were as follows:

1. A significant, positive relationship was found between immature self-concept and reading disability (.71 on the third grade level and .62 on the sixth grade level). Both correlations were significant from zero at the .01 level of statistical confidence.
2. A significant positive relationship was reported between self-concept and arithmetic disability (.73 on the third grade level and .63 on the sixth grade level). Again, both coefficients of correlation reported were significant from zero at the .01 level of statistical confidence.
3. A greater relationship was reported between immature self-concept and reading and arithmetic disability than between self-concept and disability in other school subjects.

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[25] Raymond Franklin Bodwin, "The Relationship Between Immature Self-Concept and Certain Educational Disabilities" (unpublished Doctor's Thesis, Michigan State University, East Lansing, 1957).

[26] Ibid., p. 2.

4. The relationship between immature self-concept and reading disability was lower, but not significantly so, than that between immature self-concept and arithmetic disability.

5. A greater relationship was reported between immature self-concept and reading and arithmetic disabilities for the third grade level than for the sixth grade level.

Further evidence in support of the theoretical proposition to follow is provided by Clark,[27] who investigated the relationship between the academic performance and "academic expectancies," held for selected freshman, male college students by certain significant others. Clark gave the following description of his sample:

> The total sample was composed of 369 non-probationary students whose grade-point-averages during their freshman years were consistently 2.00 or higher, 340 probationary students whose grade point-averages were consistently below 2.00, and 127 raisers whose grade-point-averages for the fall term were 2.00 or higher.[28]

Clark reported a positive relationship between the academic expectancies held for students by significant others and the students' actual academic performance.

Summary of review of literature. This selective review of the literature has provided the empirical basis for

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[27] W. E. Clark, "The Relationship Between College Academic Performance and Expectancies" (unpublished Doctor's thesis, Michigan State University, East Lansing, 1960).

[28] Ibid., "Abstract."

the theoretical formulations and/or hypotheses that follow. In short, it has summarized the empirical support for the following general notions:

1. The self-concept (i.e., that organization of qualities that the individual attributes to himself) emerges from social interaction, and, thus, guides and directs the behavior of interacting individuals.
2. Variations in self-concepts can be established and measured by empirical techniques.
3. The self-concept is not a rigid personality trait; it is subject to change.
4. Changes in self-concept are reflected in changes in performance and/or behavior.
5. Groups and individuals significant or important to another individual can influence that individual's self-concept, and, hence, influence his performance and/or behavior.

C. The Theoretical Frame of Reference

The explanatory principles used in this investigation were drawn from the perceptual approach to individual behavior as expounded by Combs and Snygg,[29] and the symbolic interactionist approach to social psychology, first enunciated in

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[29] Combs and Snygg, loc. cit.

the work of Cooley,[30] Dewey,[31] and Mead,[32] and since expanded by others.[33] This frame work attempts to explain human behavior in terms of how things seem to the individual; it focuses upon the more conscious aspects of human behavior and tries to relate them to the individual's participation in group life. What governs human behavior, from this perspective, is the individual's unique perceptions of himself and the world in which he lives, the meanings things have for him. Human behavior, then, is viewed as a process in which the person shapes and controls his conduct by taking into account (through processes such as "role-taking") what he perceives as the expectations of others with whom he interacts.

In this framework it is assumed that the child learns what he perceives he is capable of learning. It is

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[30] Charles Horton Cooley, Human Nature and The Social Order (New York: Scribners, 1922).

[31] John Dewey, Human Nature and Conduct (New York: Modern Library, 1930).

[32] George Herbert Mead, Mind, Self, and Society (Chicago: University of Chicago Press, 1938).

[33] Herbert Blumer, "Psychological Import of the Human Group," in M. Sherif and M. Wilson, (eds.) Group Relations at the Crossroads (New York: Harper, 1953), pp. 185-202; Nelson N. Foote, "Concept and Method in the Study of Human Development," in Sherif, et. al., (eds) Emerging Problems in Social Psychology (Norman, Okla.: Institute of Group Relations, 1957), pp. 29-53; and Alfred R. Lindesmith and Anselm L. Strauss, Social Psychology, Revised Edition (New York: Henry Holt and Company, Inc., 1956).

further assumed that his self-perception with regards to learning is acquired through interaction with significant other persons who hold expectations of him as a school learner.

D. Statement of Hypotheses

Drawn from the theoretical background set forth above, the general proposition tested in this investigation was that self-image is a functionally limiting factor in school achievement. To test this theoretical proposition the following three specific hypotheses were formulated:

1. The self-concepts of ability of Negro and Caucasian students are related to their achievement when intelligence is controlled.
2. The self-concepts of ability in specific school subjects of Negro and Caucasian students vary from one subject to the other and from their general self-concepts of ability.
3. The expectations of significant others as perceived by Negro and Caucasian students are positively correlated with the students' self-concepts as learners and with their classroom achievement.

E. Summary of Chapter

This chapter has consisted of the delineation of the theoretical framework upon which the present investigation is based. It included a selective review of the literature.

Two criteria were used in the selection of the literature that was reviewed here. The literature selected either (1) demonstrated support for the major theoretical framework underlying the investigation, or (2) suggested the tenability of the major theoretical proposition that the present research was designed to test. No effort was made here to exhaust all of the literature which has corroborated the above theoretical frame of reference, nor to exhaust all of the studies with suggestive implications for the specific purposes of this investigation. A more extensive review of the literature on the self-concept has been alluded to elsewhere in this chapter.[34]

The theoretical framework was followed by the formal statement of the major theoretical proposition and the three specific hypotheses, the test results of which are presented in Chapter IV of this thesis.

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[34] Wylie, loc. cit.

CHAPTER III

METHODOLOGY

A. Contents of This Chapter

In this chapter the methodological procedures used in the investigation are presented. This presentation consists of four main parts. The first part is concerned with a brief description of the samples used in the investigation; the second part sets forth the operational definitions of the concepts and a description of the research instruments used in the investigation; the third part of the chapter includes a description of the major statistical techniques used to test the hypotheses; and, finally, the fourth part of the chapter is devoted to a description of the statistics used in the comparative analysis of the data for the two sets of subjects--Negro and Caucasian. The following chapter consists of the presentation of the actual test results of the hypotheses and the findings of the comparative analysis.

B. The Universe and Sample

The universe or population for this investigation consisted of all eighth-grade Negro and Caucasian students in the urbanized and industrialized Midwest. Although the major focus of the analysis was originally intended to be upon the Negro students in that universe, the hypotheses were tested using both Negro and Caucasian subjects. This

dual analysis proved to be a prerequisite for the planned, systematic comparative analysis.

The total sample investigated in this study consisted of practically all eighth-grade students in one Midwestern, metropolitan school system. Within this investigation two samples were delineated: the Negro sample (N = 114) and the Caucasian sample (N = 1482). The total sample used in this investigation thus consisted of all eighth-grade Negro and Caucasian students who met the criteria of having been in the school system for four years (i.e., since the fourth grade), and for whom two sets of IQ scores were available. The comparative phase of the analysis consisted of a systematic comparison of the findings obtained in the parallel investigations of the two samples.

The careful generalization of the findings of this research must, of course, be restricted to social conditions and subjects very similar to those tested in this study, i.e., eighth-grade Negro and Caucasian students in the urbanized and industrialized Midwest. To generalize the findings reported in this thesis beyond those social conditions and subjects might prove to be misleading.

C. Operational Definitions of Terms and Research Instruments and Techniques

Self-Concept of Ability. The general term, "self-concept," has been defined operationally in the literature as, "A set of interrelated self-ratings, usually upon bipolar scales using some personal quality as the referent of the

scale."[1] For the purpose of this investigation, the term was operationalized as the responses of a subject to an eight-item, fixed-alternative scale designed to measure the subjects' self-concepts of ability in academic endeavors.[2] A second scale of seven fixed-alternative items dealing with the importance of grades was designed and administered to determine whether self-concept of ability is independent of concern about achievement.[3] The self-concept of ability scale was found on a pretest of fifty cases to form a Guttman scale, with reproducibility of .91. A second test of the scale, with 513 males and 537 females revealed a Guttman scale, with reproducibility of .95 for males and .96 for females. The reliability of the self-concept of ability scales, as determined by Hoyts' method, was .82 for males and .77 for females.[4]

Intelligence. This term was operationalized as the average of the individual subject's ratings on two separate testings with a standard intelligence test--the "California Test of Mental Maturity." This test was administered by the school system in the fourth and sixth grades. The

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[1] Richard Videbeck, op. cit., p. 351.

[2] See Appendix A.

[3] See Appendix B.

[4] Wilbur B. Brookover, et.al. Self-Concept of Ability and School Achievement: Final Report of Cooperative Research Project No. 845 (East Lansing, Office of Research and Publications, Michigan State University, 1962), Appendix C.

average of a subject's two scores therefore constituted his "intelligence" rating for the purposes of this investigation. The test manual reports a test-retest correlation of .90 for the test. A retest analysis of the test conducted by the Bureau of Educational Research, Michigan State University, revealed a correlation coefficient of .65. This latter analysis, however, was for tests that were administered two years apart, i.e., the fourth and sixth-grade scores mentioned above.

Achievement. For the purposes of this analysis, achievement was operationalized as the average of a subject's school grades for the eighth grade. The grades in the four basic subjects--English, mathematics, science, and social studies--were used in calculating this average. A reliability test was performed, using seventh-grade GPA (Grade Point Average). The obtained reliabilities (employing the Hoyts' method) were .91 for males and .93 for females, using thirty-five randomly selected cases for each sex.[5]

Self-concept of ability in specific subjects. This term was operationalized as a subjects responses to the eight-item scale on self-concept of ability, asked with a change of reference to the specific subjects mentioned above, i.e., English, mathematics, social studies, and science.[6]

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[5] Ibid.

[6] See Appendix A.

General self-concept of ability. This term is the same as "self-concept of ability." The two terms are used interchangeably and denote a subject's responses to the eight-item, fixed-alternative scale designed to measure the subjects' self-concepts of ability in academic endeavors, which was described above.

Perceived expectations of significant others. For the purposes of the present analysis, this term was operationalized as a subject's responses to a series of questions designed to elicit the subjects' perceived[7] expectations and evaluations of himself, as held by certain significant others (i.e., parents, favorite teachers, and best friends), with regards to the same questions asked to elicit the subjects' self-evaluations.[8] Pretests revealed that the persons used here as significant others are most frequently mentioned by students as being important in their lives.

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[7] It is important to note that the theoretical frame of reference employed in this investigation emphasizes the individual in his own situation, not in other persons' situations. What the individual does not see, think, feel, or consider to exist, then, does not constitute a part of his situation, nor influence his behavior in that situation. The primary concern of this investigation is therefore with what the student perceives to be the expectations and/or evaluations held of him by significant others, not the significant others' actual images of the students' abilities, as the latter cannot influence the students' behavior until they are perceived by the students.

[8] See Appendix C.

D. Method of Testing Hypotheses

Several conventional statistical techniques were used to test the hypotheses set forth in this investigation. Hypotheses I and III were tested through the use of correlational analysis. Two orders[9] of the product moment (or Pearsonian) coefficient of correlation were employed in these tests: the zero order (r) and the first order partial ($r_{12.3}$). And the product moment, multiple correlation ($R_{1.23}$) was employed.

The zero order correlation coefficient (r), if statistically significant, indicates the existence, degree, and direction of association between two variables. Zero order intercorrelations were obtained for all of the variables included in the analysis. The coefficients were computed on the Michigan State University high speed digital computer, MISTIC, with a K5-M program.[10]

In order to determine whether the degrees of correlation were statistically significant from zero, the "t" test of significance was applied to each correlation coefficient.[11] In each case where the magnitude of r was found to be statistically significant, the correlation of the

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[9] Hubert M. Blalock, Jr., Social Statistics (New York: McGraw-Hill Book Company, Inc., 1960), pp. 333-334.

[10] Those intercorrelations for both the Negroes and Caucasians are presented in Appendix D.

[11] The formula employed for the "t" test of significance was that given by Edwards: $t = \frac{r}{\sqrt{1 - r^2}} \sqrt{n - 2}$

See Allen L. Edwards, Statistical Methods for the Behavioral Sciences (New York: Holt, Rinehart and Winston, 1961), p. 303.

given variables were taken as support for the hypothesis proposed.

In testing the null hypothesis ($r = 0$) the .05 level of probability was employed as the criterion for acceptance or rejection.

The first order partial correlation coefficient ($r_{12.3}$), if statistically significant, indicates the degree of relationship between two variables when the effect of a third variable has been controlled. The partial correlation coefficients were computed making use of the formula given in Blalock's Social Statistics.[12]

The third correlational technique used in the tests of hypotheses I and III, the multiple correlation ($R_{1.23}$), is a measure of how much of the total variation in a dependent variable can be explained by two independent variables acting together. The formula used in the computation of this statistic is also given by Blalock.[13]

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[12] In this formula the zero order correlation coefficients are employed to compute the partial coefficients:

$$r_{12.3} = \frac{r_{12} - r_{13}(r_{23})}{\sqrt{1 - r_{13}^2}\sqrt{1 - r_{23}^2}}.$$

See Blalock, op.cit., p. 334.

[13] This formula makes use of both the zero order and partial coefficients:

$$R^2_{1.23} = r^2_{12} + r^2_{13.2}(1 - r^2_{12}).$$

See Ibid., p. 349.

Significance tests were performed to determine whether the degrees of correlation were significant for both the partial and multiple correlation coefficients. Analysis-of-variance tests for the significance of partial and multiple correlation coefficients were employed.[14]

The test of Hypothesis II required the use of a statistic suitable for determining whether the observed differences in mean ratings on several scales within the individual samples were significant. In other words, it was necessary to determine whether the observed differences were of such magnitudes that they could not be attributed to chance factors or sampling variation. The test statistic employed for this purpose is described by Allen[15]. It is an adaptation of the correlated "t" test, which makes use of the "studentized range."

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[14] Discussions of these techniques and the necessary formulas are presented in Ibid., pp. 354 ff.

[15] The basic formula used in the computation of this statistic is:

$$d = Q \alpha \sqrt{ms/n\,(1 - r)}$$

where n represents the degrees of freedom, ms represents the pooled variances, and r represents the obtained coefficient of correlation for each of the ten combinations of means compared. Using the .05 probability level, the critical value was any value equal to or greater than the obtained "d". See Terrence Allen., "Individual Comparisons," (Mimeographed Paper, East Lansing, 1961); and Terrence Allen,"Double Classification: Fixed Effects Model," (Mimeographed, East Lansing, 1961), p. 6.

E. Method of Comparative Analysis

The comparative phase of this investigation consisted of a systematic comparison of the results obtained from the two samples investigated. Two statistical techniques were employed in this comparative analysis: tests were performed to determine whether the obtained correlation coefficients (r) within the two samples differed significantly between the samples, i.e., whether the two populations were identical ($\rho_1 = \rho_2$); and difference-of-means tests were performed to compare the mean scores for the two samples on the variables investigated.

The statistical technique employed in the comparison of the coefficients of correlation was that suggested by Blalock for testing the difference between two correlations.[16]

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[16] In this test, which is based on two independent samples, the r's are transformed into z's, and a formula for the standard error of the difference between the two z's is used, which is analogous to that for the standard error of the difference between means, and which is as follows:

$$z_1 - z_2 = \sqrt{\frac{1}{N_1 - 3} + \frac{1}{N_2 - 3}}.$$

The value of $Z = \dfrac{(z_1 - z_2) - 0}{z_1 - z_2}$

was looked up in the normal table. In testing the null hypotheses that the population correlations were identical (i.e., $\rho_1 = \rho_2$). The .05 probability level was used as the criterion for acceptance or rejection. See Blalock, op.cit. pp. 309-311.

The difference-of-means test employed was also suggested by Blalock.[17] The null hypothesis of no difference between population means (i.e., $\mu_1 = \mu_2$) was tested.

F. Summary of Chapter

The primary concern of this chapter has been the presentation of the methodological procedures employed in the investigation. Briefly, it consisted of (1) a description of the samples used in the investigation; (2) the presentation of the operational definitions of concepts and a description of the research instruments; (3) a description of the statistical techniques used to test the hypotheses; and, finally, (4) a description of the statistics used in the comparative analysis. In Chapter IV the findings of this investigation are presented.

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[17] The formula for this test is:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\hat{\sigma}_{\bar{X}_1 - \bar{X}_2}}$$

where $\hat{\sigma}_{\bar{X}_1 - \bar{X}_2}$ is an estimate of the standard error of the difference between sample means. The .05 probability level was employed in testing the null hypothesis ($p_1 = p_2$).

CHAPTER IV

RESEARCH FINDINGS

A. Contents of This Chapter

In previous chapters the major thesis and methodology of this investigation have been set forth. Chapter I was concerned primarily with the introduction of the problem and the theoretical framework. Chapter II focused mainly upon an elaboration of the theoretical frame of reference. There a selective review of relevant literature was presented and the major theoretical frame of reference was further delineated and made more specific. The chapter was concluded with the formal statement of the major theoretical proposition and the three specific hypotheses of the investigation. Chapter III dealt specifically with the methodological procedures used in the investigation. There the focus was upon a brief description of the samples used in the investigation; the operational definitions of terms used and a description of the research instruments; and a description of the method of comparative analysis. It is in the present chapter that the findings of this investigation are presented. The first part of this presentation concerns the statistical tests of the three specific hypotheses advanced in Chapter II. The second, and final, part of this chapter consists of the comparative analysis of the findings obtained from the two samples investigated in the study. The chapter is concluded with a brief summary of the research findings.

B. Tests of the Hypotheses

The main thesis of this study, that self-image is a functionally limiting factor in school achievement, was tested in the form of three specific hypotheses. The entire presentation of those tests below is based on data obtained from the two samples described in Chapter III of this thesis: 114 Negro and 1482 Caucasian eighth-grade students in a Midwestern, urban-industrialized social setting. The samples included students from each of four junior high schools in the community thus described.

Hypothesis (1). The self-concepts of ability of Negro and Caucasian eighth-grade students are related to their achievement when intelligence is controlled.

This hypothesis was tested through the use of correlational analysis. Coefficients of partial correlation ($r_{12.3}$) between general self-concept scores (S-C) and eighth grade grade point average (GPA) were obtained with the effect of intelligence (IQ) controlled for both of the samples investigated. The relevant coefficients of correlation are presented in Table 1 with and without the effect of IQ controlled. The crucial test of Hypothesis 1 lies in the relative magnitudes of the two sets of correlation coefficients between S-C and GPA, with and without the effect of IQ controlled (row 2 of Table 1). The table shows that, even with

the effect of IQ controlled, the coefficients of correlation between S-C and GPA, for both Negro and Caucasian students, are positive and significant---.406 for the Negroes and .475 for the Caucasians.

The considerably lower coefficients of correlation--.131 for Negroes and .265 for Caucasians--between S-C and IQ when GPA is controlled (row 3 of Table 1) corroborates the finding reported by Brookover, that "the self-concept scale measures quite a different variable than the IQ test measured,"[1] and lends further support to the hypothesis that S-C is an independent predictor of GPA.

TABLE 1. Coefficients of correlation between eighth-grade grade point average, measured intelligence, and self-concept of ability for Negro and Caucasian eighth-grade students[a]

Variables Correlated	Correlation Coefficients				
	No Variable Controlled				
	Negro N=114	Caucasian N=1482	Variable Controlled	Negro N=114	Caucasian N=1482
8th GPA - IQ	.153	.367*	S-C	.033	.404*
8th GPA - S-C	.426*	.610*	IQ	.406*	.475*
Self-Concept - IQ	.303*	.464*	GPA	.265*	.131*

[a] The Multiple correlation coefficients ($R_{1.23}$) among GPA, IQ, and S-C were .427* for Negroes and .689*[1.23] for Caucasians.

*$P < .05$ for the test that r, $r_{12.3}$ and $R_{1.23}=0$.

[1] Brookover, et. al., op. cit., p. 33.

When the partial coefficients of correlation between IQ and GPA (with the effect of S-C controlled) is compared with the multiple correlation coefficients IQ and S-C with GPA (letting both of the independent variables affect the dependent variable), it is observed that the correlation increases from .033 to .427 for Negroes and from .404 to 609 for Caucasians. These increases in the amount of variation explained in the dependent variable (achievement) by adding the S-C variable are more than double the amount of variation explained without adding that variable for both populations investigated. The multiple correlations reported have beta weights[2] of .032 for IQ and .416 for S-C among the Negroes and .362 for IQ and .442 for S-C among the Caucasians. The data thus indicate that self-concept is weighted higher than IQ as a predictor of achievement among both the Negro and Caucasian subjects.[3]

The coefficients of correlation ($r_{12.3}$) between specific self-concept of ability in school subjects and grades in each subject, controlling intelligence, were also obtained. Those coefficients and the zero order coefficients (r) between specific self-concept and grades in each subject are presented in Table 2. The results thus presented are

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[2] Beta weights indicate how much change in the dependent variable is produced by a standardized change in one of the independent variables when the other is controlled. See Blalock, op. cit., p. 345.

[3] Brookover, et.al., Ibid. reported that IQ was weighted "slightly higher than self-concept for both males and females." The subjects of that study were seventh-grade Caucasian students; 537 females and 513 males.

quite comparable to those presented above (Table 1) and lend further substantiation to the hypothesis that self-concept is an independent predictor of classroom achievement.

All of the statistical test results presented have thus demonstrated support for Hypothesis 1, that the self-concepts of ability of Negro and Caucasian students are significantly related to their achievement when intelligence is controlled. The tenability of this hypothesis suggests that self-concept of ability is an independent predictor of classroom achievement among the subjects investigated, and, indeed, among similar subjects situated in similar social conditions.

TABLE (2). Coefficients of correlation between general self-concept of ability in specific subjects with total and subject grade point averages for Negro and Caucasian eighth-grade students

Variables Correlated	Correlation Coefficients			
	IQ Controlled		IQ not Controlled	
	Negro N=114	Caucasian N=1402	Negro N=114	Caucasian N=1402
General S-C and Total GPA	.406*	.375*	.420*	.610*
Math. S-C and Math. Grade	.403*	.472*	.430*	.587*
English S-C and English Grade	.037	.336*	.107	.400*
Soc. St. S-C and Soc. St. Grade	.440*	.331*	.443*	.406*
Science S-C and Science Grade	.434*	.335*	.453*	.436*

*P $<$ .05 for the test that r and $r_{12.3} = 0$.

Hypothesis (2). The self-concepts of ability in specific school subjects of Negro and Caucasian students vary from one subject to the other and form their general self-concepts of ability.

The purpose of this hypothesis was to determine whether students' self-concepts of ability in classroom achievement can be differentiated into specific subject self-concepts. It is important to note that no differences were postulated for the two groups as wholes; the differences were postulated to exist for individuals. Nonetheless, there were significant differences between the mean general S-C score and all of the mean specific S-C scores for the Negroes. For the Caucasians, only one of the mean specific S-C scores (mathematics) differed significantly from the mean general S-C score. Those differences, along with the mean GPA for the four school subjects and for all subjects, are presented in Table 3. The observable differences that exist between the two populations are discussed further elsewhere in this analysis.[4]

The crucial test of the hypothesis that students self-concepts of ability in specific school subjects vary from one subject to the other and from their general self-concepts of ability is whether their self-concepts of ability

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[4] This section of the chapter is concerned specifically with the tests of the hypothesis; the two samples are compared in the following section.

TABLE (3) Mean self-concept of ability scores and mean grade point averages in all subjects and for each of four school subjects for Negro and Caucasian eighth-grade students (the higher the self-concept score the more positive the self-concept; range possible 8-40)

	Mean Self-Concept		Mean Grade Point Average	
	Negro N=114	Caucasian N=1432	Negro N=114	Caucasian N=1432
All Subjects	26.85[a]	27.73[a]	1.71	2.23
Mathematics	24.86*	27.12*	1.53*	2.10
English	28.57*	28.11	1.82	2.64
Social Studies	25.08*	28.00	1.70	2.02
Science	26.99*	28.12	1.83	2.27

[a]Mean general self-concept of ability not mean specific self-concept of ability scores.
*Significantly different from the mean score for all subjects--two-tailed "t" test for correlated data ($P < .05$) employing "Studentized Range."

in the specific subjects vary functionally both from their general self-concepts of ability and from one specific subject to the other. Therefore, the hypothesis is twofold; it hypothesizes a functional difference between general S-C; and each specific subject S-C and it hypothesizes functional differences among the specific subject self-concepts. In order to test the hypothesis that students' self-concepts of ability in specific subjects are functionally distinct from their general self-concepts (the first postulate of Hypothesis 2), the coefficients of correlation between specific self-concepts and achievement in the specific subjects were compared with the coefficients of correlation between general self-concept and achievement in the specific subjects. If

the hypothesis is tenable, the coefficients of correlation between specific S-C and specific subject achievement should be greater in magnitude than those between general S-C and specific subject achievement. Table 4 reports the relative coefficients of correlation. It is indicated that, in four out of the eight cases, the obtained coefficients of correlation between specific self-concept and achievement in the specific subjects are greater in magnitude. However, none of the four coefficients is significantly greater, as determined by the method indicated. The remaining four coefficients of correlation obtained between specific self-concept and specific subject achievement are smaller in magnitude than those between general S-C and specific subject achievement, two of the latter coefficients being significantly greater in magnitude, using the two-tailed "t" test for the correlated data and P .05.

The third row of Table 4 is a presentation of the obtained multiple coefficients of correlation for both general S-C and specific S-C with specific subject achievement. It is observed that all of the multiple coefficients of correlation (letting both independent variables--general S-C and Specific S-C affect the dependent variable--specific subject achievement)account for significantly greater variation in the dependent variable than do the zero order coefficients in row one, between general S-C and Specific subject achievement.

Table (4). Coefficients of correlation among general self-concept of ability, self-concept of ability in specific subjects and eighth-grade grades in four subjects for Negro and Caucasian students

Negro: N=114 Caucasian: N=1482

Variables correlated	Coefficients of Correlation							
	Math		English		Soc. St.		Science	
	N	C	N	C	N	C	N	C
General S-C and Grade	.391*	.549*	.512*	.518*	.393*	.555*	.457*	.562*
Specific S-C and Grade	.430*#	.587*#	.107	.460*	.443*#	.406*	.496*#	.436*
General S-C, Specific S-C, and Grade	.604*	.363*	.543*	.531*	.611*	.567*	.739*	.577*

* $P < .05$ for the test that r and $r_{1.23} = 0$.

Not significantly greater than coefficient of correlation between general S-C and grade--two-tailed "t" test for correlated data ($P < .05$).

Though the evidence presented thus far is not conclusive, it has demonstrated significant trends to indicate that the proposed hypothesis is tenable, that students self-concepts of ability in specific subjects are functionally distinct from their general self-concepts. This is particularly true for the Negro data, where three out of four of the coefficients of correlation between specific S-C and specific subject achievement were greater in magnitude than those between general S-C and specific subject achievement, though not significantly so ($P < .05$).

The test of the hypothesis that students' self-concepts in specific subjects vary functionally from one

subject to the other (the second postulate of Hypothesis 2) was executed through the use of an adaptation of the correlated "t" test, which makes use of the "studentized range."[5] All possible combinations of the coefficients of correlation between specific self-concepts and grades in the four specific subjects were compared. If the hypothesis that students' self-concepts in specific subjects vary functionally from one subject to the other is tenable, the coefficients of correlation between specific S-C and specific subject achievement should vary significantly from one subject to the other. These test results are presented in Table 5.

The trends reported in Table 5 offer tentative support for the hypothesis. The table reports that differences existed between the relative magnitudes of the coefficients of correlation in each of the twelve possible combinations. In five of those cases the differences were significant, as determined by the correlated "t" test, employing the "studentized range."

While the results of the above tests are by no means conclusive, they do suggest the tenability of the second specific hypothesis of this investigation, that students' self-concepts of ability in specific school subjects vary from one subject to the other and from their general self-concepts of ability.

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[5] Supra, Chap. iv, p. 28.

TABLE (5). Differences between all possible combinations of the coefficients of correlation between specific S-C and specific subject achievement for Negro and Caucasian eighth-grade students

Negroes N = 114							
Specific S-C and Grade in:		Specific S-C and Grade in:	d	Specific S-C and Grade in:		Specific S-C and Grade in:	d
Math.	.430*	English	.107	.323#	Math.	.587*	English .460*	.127
Math.	.430*	Soc.St.	.443*	.013	Math.	.587*	Soc.St. .460*	.181#
Math.	.430*	Science	.456*	.026	Math.	.587*	Science .436*	.151#
English	.107	Soc.St.	.443*	.336#	English	.460*	Soc.St. .406*	.054
English	.107	Science	.456*	.349#	English	.460*	Science .436*	.024
Soc.St.	.443*	Science	.456*	.013	Soc.St.	.406*	Science .436*	.030

*$P < .05$ for the test that $r = 0$.
#Difference significant ($P < .05$)--correlated "t" test, employing "studentized range."

Further support for the hypothesis was obtained by comparing the specific self-concept variable with the general self-concept variable as a predictor of general achievement (Total GPA). Again, if the two classes of S-C are functionally distinct, general S-C should prove to be a better predictor of general achievement than specific S-C. Table 6 reports the coefficients of correlation between general achievement (Total GPA) and general S-C as compared to those between specific S-C and total GPA.

Table 6 indicates several significant differences in the relative predictive powers of the two self-concepts. Among the Negroes only the coefficient of correlation between English S-C and total GPA was significantly less than that

TABLE (6). Coefficients of correlation between general S-C and general achievement (GPA) and specific subject S-C and general achievement for Negro and Caucasian eighth-grade students

Variables Correlated	Coefficients of Correlation	
	Negro N=114	Caucasian N=1432
General Self-Concept X Total GPA	.426*	.610*
Mathematics Self-Concept X Total GPA	.412*	.532*
English Self-Concept X Total GPA	.115#	.431*#
Social Studies Self-Concept X Total GPA	.413*	.373*#
Science Self-Concept X Total GPA	.364*	.399*#

*P < .05 for the test that r = 0.
#Significantly less than the coefficient of correlation between general S-C and GPA--two-tailed "t" test for correlated data.

between general S-C and total GPA. Among the Caucasians all of the specific S-C with total GPA coefficients of correlation, except that for mathematics, were significantly less than the general S-C with total GPA coefficient. It should be observed that, for both Negroes and Caucasians, all of the coefficients of correlation between specific self-concept and total GPA were of less magnitude, though not significantly so, than the coefficients of correlation between general S-C and total GPA. That observed trend, which is tantamount to the several trends observed in above tables, is further indicative of the tenability of Hypothesis 2. It is thus concluded that the second specific hypothesis of this

investigation (that students' self-concepts of ability in specific school subjects vary from one subject to the other and from their general self-concepts of ability) is tenable.

Hypothesis (3). The expectations of significant others as perceived by Negro and Caucasian eighth-grade students are positively correlated with the students' self-concepts as learners and with their classroom achievements.

This final hypothesis taps the central core of the symbolic interactionist theory of human behavior,[6] which provides the theoretical basis for this investigation. This frame of reference posits an explanation of human behavior that is based upon how things seem to the individual actor; it focuses upon the more conscious aspects of human behavior and attempts to relate them to the individual's participation in group life. What governs human behavior from this perspective, then, is the individual's unique perceptions of himself, as he forms such self-perceptions on the basis of what he perceives others to perceive in him. Hypothesis 3 thus affords a test of one of the crucial postulates of this theory. In more precise terms, it hypothesizes that the student's own concept of his ability is significantly and positively correlated with the images that he perceives significant other persons to hold of him;[7] and, further,

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[6] Supra, Chap., ii, pp. 20-21.

[7] Supra, footnote 7, p. 27.

the hypothesis postulates that what the student perceives as his significant others' perceptions of him is significantly and positively correlated with his (the student's) classroom achievement (behavior).

The hypothesis was tested through the use of correlational analysis. The Pearsonian r between the student's general self-concepts of ability and the images they perceived significant other persons to hold of their abilities was obtained to test the first postulate of Hypothesis 3. The test of the second postulate of the hypothesis was executed in a similar manner; coefficients of correlation between the students' eighth-grade grade point averages and the images that they perceived the significant other persons to hold of their abilities were obtained. Table 7 reports the relevant coefficients of correlation for the test of the first postulate of Hypothesis 3, that the expectations of significant others as perceived by Negro and Caucasian eighth-grade students are positively correlated with the students' self-concepts as learners.

Table (7). Coefficients of correlation between the students' general self-concepts of ability and the images the students perceive significant persons to hold of their abilities for Negro and Caucasian eighth-grade students

Students' Perceptions of:	Coefficients of Correlation	
	Negro N=114	Caucasian N=1423
Parents' Images	.696*	.212*
Teachers' Images	.443*	.538*
Peers' Images	.439*	.235*

*$p < .05$ for the test that $r = 0$.

It is observed in the table that all of the obtained coefficients of correlation were both positive and significant for the Negro and the Caucasian students. On the basis of these data, then, the first postulate of Hypothesis 3, as stated above, is accepted as tenable. Table 8 presents the coefficients of correlation between the students' grade point averages and the images they perceive significant persons to hold of their abilities. There, too, it is observed that all of the obtained coefficients of correlation were both significant and positive for both the Negro and the Caucasian students. The tests for both postulates set forth in Hypothesis 3 have thus demonstrated that the entire hypothesis is tenable. The tenability of this hypothesis suggests that the expectations of significant others as perceived by the Negro and the Caucasian students influence the students' self-concepts as learners and thus influence the actual classroom learning of these students.

TABLE (8). Coefficients of correlation between the students' grade point averages and the images the students perceive significant persons to hold of their abilities for Negro and Caucasian eighth-graders.

Students' Perceptions of:	Coefficients of Correlation	
	Negro N=114	Caucasian N=1432
Parents' Images	.369*	.145*
Teachers' Images	.199*	.325*
Peers' Images	.231*	.198*

*$P < .05$ for the test that $r = 0$.

C. Summary of Tests of Hypotheses

The sole purpose of the preceding part of this chapter was to present the statistical tests of the three specific hypotheses advanced to test the major theoretical proposition set forth in this investigation. Those tests, as presented above, have indicated empirical support for that proposition. It was found that all three of the hypotheses proposed were tenable. The nature of the statistics employed to test the hypotheses has been indicated elsewhere in this thesis.[8] Hypothesis 1 was proposed to determine whether there is a relationship between self-concept and achievement when measured intelligence is controlled. Hypothesis 2 was proposed to determine whether self-concept of ability may be differentiated into specific subject self-concepts. And Hypothesis 3 was proposed to test the proposition that relationships exist between the expectations of significant others as perceived by students and the students' self-perceptions, and between the students' classroom achievement and the expectations that they perceive significant others to hold for them. The evidence presented in support of Hypotheses 1 and 3, and for both the Negro and Caucasian students, gave strong support for the hypotheses. The evidence presented in support of Hypothesis 2, while not quite as conclusive, indicated that the hypothesis is tenable.

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[8] Supra, Chap. iii, pp. 27-30.

It is therefore concluded that the major proposition advanced in this investigation, that self-image is a functionally limiting factor in school achievement, is tenable. The substantive conclusions to be drawn from the foregoing analyses are presented in the final chapter of this thesis.

D. Comparative Analysis

This presentation is twofold: (1) the Negro and Caucasian mean scores for all of the relevant variables investigated in this study are compared systematically through the use of the Student's "t" test; and (2) the Negro and Caucasian zero order coefficients of correlation employed in the tests of the hypotheses are compared through the use of Fisher's "Z" transformation test. The latter test is employed to compare the relative degrees of relationship between the relevant variables within the Negro and Caucasian samples. The two concerns of this presentation thus focus upon the test of the null hypothesis that the two populations are equal.

Differences between the Negro and Caucasian mean scores for the major variables. Table 9 reports a summary of the obtained means, standard deviations, and t-tests between the Negro and Caucasian mean scores for the major variables of this study. The table shows that except for three variables, the Caucasian mean scores were all significantly greater than the Negro mean scores. The three scales on which the Negro students scored higher, as indicated in

Table 9, are (1) the Specific Self-Concept in English scale; (2) The Total Importance of Grades Scale; and (3) The Total Image of Favorite Teacher Scale.[9]

Perhaps the most noteworthy finding reported in Table 9 is the fact that the Negro students obtained a significantly higher mean score on the Total Importance of Grades Scale than the Caucasian students. That finding is indicative of a significantly higher level of motivation to achieve in school work among the Negro students. The finding of a significantly higher mean score on the Total Importance of Grades scale is further significant because it corroborates one reported by Green,[10] who in a similar investigation, found that Negro students achieved a significantly higher mean achievement motivational score than Caucasian students.

Further observation of Table 9, however, reveals that the Negro students' mean scores for all of the actual achievement variables (Total GPA and grades in mathematics, English, social studies and science) were significantly lower than the Caucasian scores. The apparent paradox inherent in the

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[9] The three scales are found in Appendices A, B, and C, respectively.

[10] Robert L. Green, "Motivational Prediction of Achievement for Negro High School Students," (Paper presented at the 1963 American Educational Research Association Meeting, February 14, 1963, Chicago, Illinois.

TABLE (9). Means, standard deviations, and t-tests between scores for all variables for the Negro and Caucasian eighth-grade students.

Variables	Negro Mean N=114	S.D.	Caucasian Mean N=1482	S.D.	d.f.	t
Social Class	22.08	1.634	37.98	2.175	1594	760.76*
Total IQ	95.23	.134	107.02	.142	1594	295.49*
Total S-C	26.86	.416	27.73	.476	1594	60.00*
Total Importance of Grades	22.57#	.371	22.45	.333	1594	3.66*
Math. S-C	24.86	.614	27.12	.654	1594	10.76*
English S-C	28.57#	.575	28.11	.583	1594	8.11*
Soc.St. S-C	26.09	.562	28.00	.767	1594	25.07*
Science S-C	26.99	.678	28.12	.745	1594	31.44*
Total Perceived Image of Parents	17.87	.364	19.67	.975	1123	42.45*
Total Perceived Image of Best Friend	17.63	.378	18.47	.841	1388	20.19*
Total Perceived Image of Favorite Teacher	18.81#	.448	18.11	.512	1594	14.17*
Math. Grade	1.53	.906	2.10	1.120	1594	51.26*
English Grade	1.82	.899	2.26	1.027	1594	501.00*
Soc. St. Grade	1.70	.979	2.20	1.085	1594	447.70*
Science Grade	1.83	.981	2.27	1.113	1594	399.10*
Total GPA	1.72	.793	2.23	.974	1594	549.60*

*Difference is significant $< .05$.
#The Negro Mean is greater.

above data is very definitely a problem that requires further investigation. A fruitful research question to approach that problem might well be; What is the relationship between achievement motivation and actual achievement?

Differences between the Negro and Caucasian correlated data. Perhaps the more revealing comparison between the two samples investigated is to be found in the analysis of the relative degrees of relationship between the relevant variables employed in the tests of the hypotheses. Table 10 reports the comparative coefficients of correlation for the crucial variables for the Negro and the Caucasian students. Inspection of that table indicates that for most of the variables correlated the Caucasian coefficients of correlation were significantly greater than those for the Negroes. Only four of the Negro coefficients of correlation were significantly greater than those for the Caucasians--(1) General S-C and Science S-C; (2) Parents' Images and General S-C; (3) Peers' Images and General S-C; and (4) Parents' Images and Total GPA. Further inspection of the table reveals that there were a total of twelve combinations of correlated variables for which there were no significant differences between the two samples; and that there were seventeen combinations of correlated variables for which the Caucasian students obtained significantly greater coefficients of correlation. The observed differences in the relative sizes of the coefficients of correlation for the two samples indicate a greater degree of relationship between the relevant variables within the population having the significantly greater coefficient.

Perhaps the most significant finding reported in Table 10 is that regarding the comparative predictive powers

TABLE (10). Comparative coefficients of correlation and Z-tests for the Negro and Caucasian students*

Variables Correlated	Negro N=114 r_1	Caucasian N=1482 r_2	Z
8th GPA - IQ	.153	.567	-4.90
8th GPA - S-C	.426	.610	-2.57
Self-Concept - IQ	.303	.464	-1.93
Math. S-C - Math. Grade	.430	.507	-2.15
English S-C - English Grade	.107	.460	-1.08
Soc. St. S-C - Soc. St. Grade	.443	.406	.45
Science S-C - Science Grade	.456	.436	.25
General S-C - Math. S-C	.694	.688	.12
General S-C - English S-C	.486	.632	-2.12
General S-C - Soc. St. S-C	.602	.551	.73
General S-C - Science S-C	.720**	.582	2.46
General S-C - Math. Grade	.301	.549	-2.51
General S-C - English Grade	.312	.518	-2.54
General S-C - Soc. St. Grade	.353	.553	-2.58
General S-C - Science Grade	.452	.562	-1.60
IQ - Math Grade	.170	.531	-4.24
IQ - English Grade	.151	.535	-4.49
IQ - Soc. St. Grade	.050	.485	-4.86
IQ - Science Grade	.175	.524	-4.09
Math S-C - Total GPA	.412	.532	-1.56
English S-C - Total GPA	.119	.431	-3.40
Soc. St. S-C - Total GPA	.413	.378	.41
Science S-C - Total GPA	.364	.399	- .41
Parents' Images - General S-C	.696**	.212	6.32
Teachers' Images - General S-C	.449	.538	-1.20
Peers' Images - General S-C	.439**	.235	2.33
Parents' Images - Total GPA	.309**	.145	2.43
Teachers' Images - Total GPA	.109	.325	-1.47
Peers' Images - Total GPA	.231	.198	.34

* $\sigma_{r_1 - r_2} = .099$; Critical value = ± 1.96.
** Negro coefficient of correlation is significantly greater Difference is significant $P < .05$.

of IQ as a predictor of achievement. A very low and non-significant coefficient of .153 between GPA and IQ is indicated for the Negro students, while a significant coefficient of .567 between those variables is reported for the Caucasian students. In other words, IQ accounted for approximately 32 per cent of the variation in the achievement variable among the Caucasian students; whereas, it only accounted for approximately 2 per cent of the variation in that variable among the Negro students. It has been observed elsewhere in this report that the comparative beta weights (in the multiple correlation among GPA, IQ, and S-C) for IQ as a predictor of school achievement were .032 for Negroes and .362 for Caucasians.[11] Thus, the data indicate that IQ is weighted higher as a predictor of achievement among the Caucasian students than among the Negro students.

The comparative coefficients for self-concept and GPA, as indicated in Table 10, were .425 for the Negro students and .610 for the Caucasian students. Again it is observed that the coefficient obtained among the Caucasian students was significantly greater than that obtained among the Negro students. Translating the two obtained coefficients of correlation into percentages, it is observed that the percentages of variation explained in the achievement variables by the self-concept variables were 18 and 37 per cent for the Negro and the Caucasian students, respectively. The

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[11] Supra, p. 36.

obtained beta weights (in the multiple correlation among GPA, IQ, and S-C) for self-concept were .416 for the Negro students and .442 for the Caucasian students.

The comparative coefficients of correlation between the students' general self-concepts of ability and the images the students perceive significant persons to hold of their abilities indicated some further significant differences between the two samples. It should be recalled that the three significant persons employed in this research were parents, teachers, and peers. Inspection of Table 10 reveals significant differences between the two samples with regards to the relative influences two of these categories of significant persons have upon the students' self-images. The table shows that the obtained coefficients of correlation between the students' self-images and the images they perceived their parents to hold of their ability were .696 and .212 for the Negro and Caucasian students, respectively. The reported coefficients of correlation differed significantly from each other.

The coefficients of correlation between students' general S-C's and the images the students perceived their favorite teachers to hold of their abilities were .448 for the Negroes and .538 for the Caucasians. The differences between those coefficients was non-significant (P .05). The comparative coefficients between the students' general self-concepts and the images they perceived their peers to hold of their abilities also differed significantly between

the two samples, the reported coefficients were .439 for the Negroes and .235 for the Caucasians.

A final comparative finding of considerable importance has to do with the correlation between the students' grade point averages and the images that they perceive significant persons to hold of their abilities. Table 10 only indicates a significant difference between the obtained coefficients between the students grade point averages and the images that they perceive their parents to hold of their abilities: .231 for Negroes and .193 for Caucasians.

5. Summary of Chapter

The purpose of this chapter was to report the empirical tests of the hypotheses advanced in this study, and to present a descriptive comparison of the empirical data obtained from the two samples investigated. The statistical tests of the hypotheses have indicated the tenability of all three of the hypotheses proposed; and, thus, indicated empirical support for the major thesis advanced at the outset of this investigation.

The comparative analysis was twofold. It involved the systematic comparison of the Negro and Caucasian mean scores for all of the relevant variables investigated in this study. The Student's "t" test was employed in the comparison of the means. The second focus of the comparative analysis was the comparison of the Negro and Caucasian zero

order coefficients of correlation employed in the tests of the hypotheses. Fisher's "Z" transformation test was employed in the latter comparison. The two concerns of the comparative analysis, then, were both focused upon the test of the null hypothesis of no difference between the two samples studied. The comparative analysis revealed several statistically significant and noteworthy differences between the two populations.

The substantive conclusions drawn from the foregoing analyses are presented in the next and final chapter of this thesis.

CHAPTER V

SUMMARY AND CONCLUSIONS

A. Summary of Major Research Findings

Summary of research objectives. The general purpose of the foregoing analysis was to investigate the relationship between classroom learning and self-image among Negro and Caucasian eighth-grade students, in the urbanized and industrialized Midwest. A particular concern of the investigation was the differential interaction between self-concept and classroom achievement among the Negro and Caucasian students. It was anticipated that ethnic differences would have a pronounced effect upon the relationship between the two variables. The specific purpose of this investigation, then, was to investigate systematically the relationship between self-concept and classroom achievement among both Negro and Caucasian students in the social conditions mentioned above, and to compare systematically the two sets of findings thus obtained.

The total sample for this investigation consisted of practically all eighth-grade students in one middle-sized, urban-industrialized social setting in the Midwest. The Negro and Caucasian samples consisted of 114 and 1482 students, respectively. The two samples included students from each of four junior high schools in the community thus described.

Summary of theoretical findings. The major thesis or proposition advanced in this investigation, which was tested in the form of three specific hypotheses, was drawn from the symbolic interactionist theory of human behavior. It stated that self-concept is a functionally limiting factor in school achievement. The statistics employed in the tests of the hypotheses have been described in Chapter III of this presentation. All three of the hypotheses were found to be tenable, among both the Negro and Caucasian students investigated.

Hypothesis 1 was proposed to determine whether there is a relationship between self-concept and achievement when measured intelligence is controlled. Hypothesis 2 was proposed to determine whether self-concept of ability in school work may be differentiated into specific subject self-concepts. And Hypothesis 3 was proposed to test the proposition that relationships exist between the images of students held by significant others as perceived by the students and the students' self-perceptions, and between the students' classroom achievement and the images that the students' perceive significant other persons to hold of their abilities.

The evidence presented in support of Hypotheses 1 and 3, and for both the Negro and Caucasian students, gave strong support for the Hypotheses. The evidence presented in support of Hypothesis 2, while not quite as conclusive, indicated that the hypothesis is tenable. It was therefore concluded that the major thesis advanced in this investigation is tenable.

Summary of descriptive-comparative findings. The major findings of the comparative aspect of this investigation may be summarized as follows:

1. Except for three of the variables investigated, the mean scores obtained by the Caucasian students were all significantly greater than the mean scores obtained by the Negro students. The three scales on which the Negro students scored higher were: (1) the Self-Concept in English Scale; (2) the Total Importance of Grades Scale; and (3) the Total Image of Parents Scale. (See Table 9).
2. The data indicated a significantly higher level of motivation to achieve in school work among the Negro students than among the Caucasian students.
3. The Negro students' mean score for all of the actual achievement variables (Total GPA and grades in mathematics, English, social studies, and science) were significantly lower than the Caucasian students' scores.
4. Self-concept of ability is positively related to school achievement among both the Negro and Caucasian students. The relevant coefficients were .426 for the Negroes and .610 for the Caucasians.

5. Self-concept of ability is positively related to school classroom achievement when intelligence is controlled among both the Negro and Caucasian students. The relevant coefficients of correlation were .406 among the Negroes and .475 among the Caucasians.

6. Self-concept of ability is a better predictor of classroom achievement than IQ for both the Negro and Caucasian students. The obtained beta weights (in the multiple correlation among GPA, IQ, and S-C) were .416 for self-concept and .032 for IQ among the Negroes, and .442 for self-concept and .362 for IQ among the Caucasians.

7. IQ is weighted significantly higher as a predictor of achievement among the Caucasian students than it is among the Negro students. The comparative beta weights (as noted above) were .032 for Negroes and .362 for Caucasians.

8. The hypothesis that self-concepts of ability in specific school subjects vary from one subject to the other and from the general self-concept of ability was substantiated among both the Negro and Caucasian students.

9. The hypothesis that a students' self-concept of ability is positively and significantly related to the images he perceives significant others to hold of him is tenable for both the Negro and

Caucasian students when parents, teachers, and peers are identified as the significant others.

10. The hypothesis that a students' classroom achievement is positively and significantly related to the images he perceives significant other persons to hold of him is tenable for both the Negro and Caucasian students when parents, teachers, and peers are identified as the significant others.

11. The relationship between students' general self-concepts of ability and the images they perceive their favorite teachers to hold of their abilities is significantly greater among the Caucasian students than among the Negro students. The obtained coefficients of correlation were .530 for the Caucasians and .443 for the Negroes.

12. The relationship between students' general self-concepts of ability and the images they perceive their parents to hold of their abilities is significantly greater among the Negro students than among the Caucasian students. The obtained correlation coefficients were .696 for the Negroes and .212 for the Caucasians.

13. The relationships between students' general self-concepts of ability and the images they perceive their peers to hold of their abilities is significantly greater among the Negro students than

among the Caucasian students. The relevant coefficients of correlation were .439 for the negroes and .235 for the Caucasians.

14. The relationship between students' grade point averages and the images they perceive their parents to hold of their abilities is significantly greater among the Negro student than among the Caucasian students. The obtained coefficients of correlation were .369 for the Negroes and .145 for the Caucasians.

9. Theoretical Implications of the Research Findings

The foregoing investigation has provided further corroboration for the following notions inherent in the literature on the "self-concept" and/or the symbolic interactionist theory of human behavior:

1. The self-concept (i.e., that organization of qualities that the individual attributes to himself) emerges from social interaction and guides and directs the behavior of interacting individuals.
2. The self-concept is pretty much an organization of "discrete self-images," which the individual uses by the principle of stimulus generalization.
3. Variations in self-concepts are subject to measurement by empirical techniques.

4. Groups and individuals significant or important to another individual can influence that individual's self-concept and, hence influence his performance and behavior.

C. Substantive Implications of the Comparative Findings

The above comparative findings leave no doubt that there are certain differences between the two samples investigated and posit several far-reaching implications for American educators, particularly at the junior high school level. Perhaps the most noteworthy finding of the above analysis is that regarding the differential predictive power of IQ as a predictor of school achievement among the Negro and Caucasian students. It has been shown that IQ is a relatively poor predictor of school achievement among Negro students. The comparative percentages of variation in the achievement variable explained by IQ were 32 per cent among the Caucasian students and 2 per cent among the Negro students. The implications which this finding holds for educators, particularly school counselors, is of grave significance, since intelligence test scores are commonly employed as the major criteria in screening students for certain types of learning. If intelligence test scores are utilized indiscriminately in educational counselling programs, particularly where Negro students are involved, great harm could result both the students involved and to the society

as a whole. The need for each individual to achieve as high a level of educational attainment as he can has been stressed as a major need in contemporary American society. Therefore, a major concern of American society must necessarily be the proper identification and direction of exploitable talent wherever it exists. Since the above results have clearly indicated the fallacy inherent in the current uses of intelligence tests among a particular segment of American society, there seems to be a very definite need for re-evaluation in this area.

The inconsistent findings of relatively high levels of achievement motivation for school work and relatively low levels of actual achievement in school work among the Negro students presents another problem which merits consideration. These findings are certainly contrary to what one might have expected to find. If as has been assumed, achievement motivation is the essential prerequisite to actual achievement, implicit in the finding of relatively high levels of achievement motivation is the possibility of raising the relative levels of actual school achievement among Negro students. It seems therefore that the relatively high achievement motivation of Negro students might be a possible avenue through which their actual levels of achievement can be raised, if it were exploited and properly channeled.

A final significant finding of the comparative analysis has to do with the differential roles of parents as reference

persons in the lives of the two student populations. The above data (see Table 10) indicate that parents play a significantly greater role in determining both how a student perceives his ability to do school work and how well the student actually does among the Negro students. This finding has particular importance for any effort at altering self-concepts of ability among Negro students. If as the above findings have indicated, self-concept of ability is a functionally limiting factor in school achievement, it seems that a fruitful approach to the problem of raising the relatively low levels of school achievement among Negro students would be to alter the manifest images that Negro parents exhibit of their childrens' abilities. Such an approach, it seems, would be most likely to produce a change in the Negro students' self-perceptions, and thus a change in their levels of classroom achievement.

D. Problems of Further Research

The foregoing investigation has revealed sufficient support for the major proposition which it was designed to test: Self-concept is a functionally limiting factor in school achievement. Given that that proposition is tenable, several questions may be advanced for future related research:

1. To what extent is the self-concept (or self-concept of ability) a rigid personality trait?
2. To what extent is the self-concept (or self-concept of ability) subject to change?

3. Are changes in the self-concept (or self-concept of ability) reflected in changes in behavior (or learning)?

As indicated elsewhere in this presentation, research which focuses upon the above questions is currently in process by the Bureau of Educational Research, Michigan State University.[1] Further research pertinent to the above questions should be initiated.

Several other questions which promises a significant increase in the accumulated knowledge regarding the "self" also have to do with the nature of the self-concept per se: To what extent is the self-concept a situational phenomenon? To what extent is the self-concept distributed among the many roles that men play? Do such specific self-concepts correlate highly among one another? Do they correlate highly with the "general" self-concept? Though related questions have been tapped in the current investigation, there is an urgent need for further investigation in that area. There are undoubtedly endless questions that could be posed regarding the nature of the self-concept. Research in that area would no doubt clarify and augment the findings reported in the foregoing presentation and, indeed, the existing knowledge with regards to the functioning of the self-concept.

E. Summary of Chapter

This chapter has concluded the present presentation.

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[1] Supra, pp. 5ff.

A summary of the research findings was preceded by a summary of the major thesis advanced in the investigation. Parts of the chapter were devoted to statements and discussions of both the theoretical and practical implications of the findings. The chapter was closed with the statement and discussion of several questions for further research.

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APPENDIX A

SELF-CONCEPT OF ABILITY SCALE--GENERAL

SELF-CONCEPT OF ABILITY SCALE--SPECIFIC SUBJECTS

SELF-CONCEPT OF ABILITY--GENERAL
(FORM A)
Michigan State University
Bureau of Educational Research

Circle the letter in front of the statement which best answers each question.

1. How do you rate yourself in school ability compared with your close friends?

   a. I am the best
   b. I am above average
   c. I am average
   d. I am below average
   e. I am the poorest

2. How do you rate yourself in school ability compared with those in your class at school?

   a. I am among the best
   b. I am above average
   c. I am average
   d. I am below average
   e. I am among the poorest

3. Where do you think you would rank in your class in high school?

   a. among the best
   b. above average
   c. average
   d. below average
   e. among the poorest

4. Do you think you have the ability to complete college?

   a. yes, definitely
   b. yes, probably
   c. not sure either way
   d. probably not
   e. no

5. Where do you think you would rank in your class in college?

   a. among the best
   b. above average
   c. average
   d. below average
   e. among the poorest

6. In order to become a doctor, lawyer, or university professor, work beyond four years of college is necessary. How likely do you think it is that you could complete such advanced work?

   a. very likely
   b. somewhat likely
   c. not sure either way
   d. unlikely
   e. most unlikely

7. Forget for a moment how others grade your work. In your own opinion how good do you think your work is?

   a. my work is excellent
   b. my work is good
   c. my work is average
   d. my work is below average
   e. my work is much below average

8. What kind of grades do you think you are capable of getting?

   a. mostly A's
   b. mostly B's
   c. mostly C's
   d. mostly D's
   e. mostly E's

SELF-CONCEPT OF ABILITY--SPECIFIC SUBJECTS
(FORM B)
Michigan State University
Bureau of Educational Research

Put an "X" in the box under the heading which best answers the question. Answer for all four subjects. (You will have one "X" on each line).

1. How do you rate your ability in the following school subjects compared with your close friends?

	I am the poorest	I am below average	I am average	I am above average	I am the best
Mathematics	☐	☐	☐	☐	☐
English	☐	☐	☐	☐	☐
Social Studies	☐	☐	☐	☐	☐
Science	☐	☐	☐	☐	☐

2. How do you rate your ability in the following school subjects compared with those in your class at school?

	I am among the poorest	I am below average	I am average	I am above average	I am among the best
Mathematics	☐	☐	☐	☐	☐
English	☐	☐	☐	☐	☐
Social Studies	☐	☐	☐	☐	☐
Science	☐	☐	☐	☐	☐

3. Where do you think you would rank in your high school graduating class in the following subjects?

	among the poorest	below average	average	above average	among the best
Mathematics	☐	☐	☐	☐	☐
English	☐	☐	☐	☐	☐
Social Studies	☐	☐	☐	☐	☐
Science	☐	☐	☐	☐	☐

4. Do you think you have the ability to do college work in the following subjects?

	no	probably not	not sure either way	yes, probably	yes, definitely
Mathematics	☐	☐	☐	☐	☐
English	☐	☐	☐	☐	☐
Social Studies	☐	☐	☐	☐	☐
Science	☐	☐	☐	☐	☐

5. Where do you think you would rank in your college class in the following subjects?

	among the poorest	below average	average	above average	among the best
Mathematics	☐	☐	☐	☐	☐
English	☐	☐	☐	☐	☐
Social Studies	☐	☐	☐	☐	☐
Science	☐	☐	☐	☐	☐

6. How likely do you think it is that you could complete advanced work beyond college in the following subjects?

	most unlikely	unlikely	not sure either way	somewhat likely	very likely
Mathematics	☐	☐	☐	☐	☐
English	☐	☐	☐	☐	☐
Social Studies	☐	☐	☐	☐	☐
Science	☐	☐	☐	☐	☐

7. Forget for a moment how others grade your work. In your own opinion how good do you think your work is in the following school subjects?

	my work is much below average	my work is below average	my work is average	my work is good	my work is excellent
Mathematics					
English					
Social Studies					
Science					

8. What kind of grades do you think you are capable of getting in the following subjects?

	mostly E's	mostly D's	mostly C's	mostly B's	mostly A's
Mathematics					
English					
Social Studies					
Science					

APPENDIX B

IMPORTANCE OF GRADES SCALE—GENERAL

IMPORTANCE OF GRADES--GENERAL

Michigan State University
Bureau of Educational Research

Circle the letter in front of the statement which best answers each question.

1. How important to you are the grades you get in school?

   a. very important
   b. important
   c. not particularly important
   d. grades don't matter to me at all

2. How important is it to you to be high in your class in grades?

   a. very important
   b. important
   c. not particularly important
   d. doesn't matter to me at all

3. How do you feel if you don't do as well in school as you know you can?

   a. feel very badly
   b. feel badly
   c. don't feel particularly badly
   d. doesn't bother me at all

4. How important is it to you to do better than others in school?

   a. very important
   b. important
   c. not particularly important
   d. doesn't matter to me at all

5. Which statement best describes you?

   a. I like to get better grades than everyone else.
   b. I like to get better grades than almost everyone else.
   c. I like to get about the same grades as everyone else.
   d. I don't care about any particular grades.

6. In your schoolwork do you try to do better than others?

   a. all of the time
   b. most of the time
   c. occasionally
   d. never

7. How important to you are good grades compared with other aspects of school?

   a. good grades are the most important thing in school
   b. good grades are among the important things in school
   c. some other things in school are more important
   d. good grades don't matter to me at all

APPENDIX C

PERCEIVED EXPECTATIONS OF SIGNIFICANT OTHER SCALES

(PARENTS, FAVORITE TEACHER, AND CLOSEST FRIEND)

Please answer the following questions as you think your PARENTS would answer them. If you are not living with your parents answer for the family with whom you are living.

Circle the letter in front of the statement that best answers each question.

1. How do you think your PARENTS would rate your school ability compared with other students your age?

   a. Among the best
   b. Above average
   c. Average
   d. Below average
   e. Among the poorest

2. Where do you think your PARENTS would say you would rank in your class in high school?

   a. Among the best
   b. Above average
   c. Average
   d. Below average
   e. Among the poorest

3. Do you think that your PARENTS would say you have the ability to complete college?

   a. Yes, definitely
   b. Yes, probably
   c. Not sure either way
   d. Probably not
   e. Definitely not

4. In order to become a doctor, lawyer, or university professor, work beyond four years of college is necessary. How likely do you think your PARENTS would say it is that you could complete such advanced work?

   a. Very likely
   b. Somewhat likely
   c. Not sure either way
   d. Somewhat unlikely
   e. Very unlikely

5. What kind of grades do you think your PARENTS would say you are capable of getting in general?

   a. Mostly A's
   b. Mostly B's
   c. Mostly C's
   d. Mostly D's
   e. Mostly E's

Go on the the next page

6. How far do you think your PARENTS expect you to go in school?

a. They expect me to quit as soon as I can
b. " " " " go to high school for a while
c. " " " " graduate from high school
d. " " " " go to business or technical school
e. " " " " graduate from college
g. " " " " do graduate work beyond college

7. In general, would your PARENTS say you are doing as well in school as you are capable of doing?

a. Yes, definitely
b. Yes, probably
c. Not sure either way
d. Probably not
e. Definitely not

8. What grade do you think your PARENTS would say you are capable of getting in Mathematics?

a. A
b. B
c. C
d. D
e. E

9. What grade do you think your PARENTS would say you are capable of getting in English (Reading)?

a. A
b. B
c. C
d. D
e. E

10. What grade do you think your PARENTS would say you are capable of getting in Social Studies?

a. A
b. B
c. C
d. D
e. E

11. What grade do you think your PARENTS would say you are capable of getting in Science?

a. A
b. B
c. C
d. D
e. E

Go On To The Next Page

Think about your favorite teacher--the one you like best; the one you feel is most concerned about your schoolwork.

What is this teacher's name? _____

What subject(s) do you have this teacher for? _____

_____

Now answer the following questions as you think this TEACHER would answer them.

Circle the letter in front of the statement which best answers each question.

1. How do you think this TEACHER would rate your school ability compared with other students your age?

   a. among the best
   b. above average
   c. average
   d. below average
   e. among the poorest

2. Where do you think this TEACHER would say you would rank in your class in high school?

   a. among the best
   b. above average
   c. average
   d. below average
   e. among the poorest

3. Do you think that this TEACHER would say you have the ability to complete college?

   a. yes, definitely
   b. yes, probably
   c. not sure either way
   d. probably not
   e. definitely not

4. In order to become a doctor, lawyer, or university professor, work beyond four years of college is necessary. How likely do you think this TEACHER would say it is that you could complete such advanced work?

   a. Very likely
   b. somewhat likely
   c. not sure either way
   d. somewhat unlikely
   e. very unlikely

Go on to the next page

5. What kind of grades do you think this TEACHER would say you are capable of getting in general?

a. Mostly A's
b. Mostly B's
c. Mostly C's
d. Mostly D's
e. Mostly E's

6. How far do you think this TEACHER expects you to go in school?

a. He (she) expects me to quit as soon as I can
b. " " " " " go to high school for a while
c. " " " " " graduate from high school
d. " " " " " go to business or technical school
e. " " " " " go to college for a while
f. " " " " " graduate from college
g. " " " " " do graduate work beyond college

7. In general, would this TEACHER say you are doing as well as you are capable of doing?

a. yes, definitely
b. yes, probably
c. not sure either way
d. probably not
e. definitely not

Go on to the next page

Think about your closest friend at school.

What is this friend's name? _____

What grade is this friend in? _____

Now answer the following questions as you think this FRIEND would answer them.

Circle the letter in front of the statement that best answers each question.

1. How do you think this FRIEND would rate your school ability compared with other students your age?

   a. among the best
   b. above average
   c. average
   d. below average
   e. among the poorest

2. Where do you think this FRIEND would say you would rank in your class in high school?

   a. among the best
   b. above average
   c. average
   d. below average
   e. among the poorest

3. Do you think that this FRIEND would say you have the ability to complete college?

   a. yes, definitely
   b. yes, probably
   c. not sure either way
   d. probabably not
   e. definitely not

4. In order to become a doctor, lawyer, or university professor, work beyond four years of college is necessary. How likely do you think this FRIEND would say it is that you could complete such advanced work?

   a. very likely
   b. somewhat likely
   c. not sure either way
   d. somewhat unlikely
   e. very unlikely

Go on to the next page

5. What kind of grades do you think this FRIEND would say you are capable of getting in general?

   a. mostly A's
   b. mostly B's
   c. mostly C's
   d. mostly D's
   e. mostly E's

6. How far do you think this FRIEND expects you to go in school?

   a. He (she) expects me to quit as soon as I can
   b. " " " " " go to high school for a while
   c. " " " " " graduate from high school
   d. " " " " " go to business or technical school
   e. " " " " " go to college for a while
   f. " " " " " graduate from college
   g. " " " " " do graduate work beyond college

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APPENDIX D

CORRELATION MATRIX OF MAJOR VARIABLES (FOR NEGRO AND CAUCASIAN SUBJECTS)

Correlation Matrix of Major Variables

(Decimals Omitted)

CAUCASIANS N = 1482

	1 Socio-economic Status	2 Average Total IQ	3 Self-concept -- General	4 Total Importance of Grades	5 Self-concept -- Mathematics	6 Self-concept -- English	7 Self-concept -- Social Studies	8 Self-concept -- Science	9 Perceived Image of Parents	10 Perceived Image of Closest Friend	11 Perceived Image of Favorite Teacher	12 7th Grade Mathematics	13 7th Grade English	14 7th Grade Social Studies	15 7th Grade Science	16 7th Grade GPA	17 8th Grade January Mathematics	18 8th Grade January English	19 8th Grade January Social Studies	20 8th Grade January Science	21 8th January GPA	22 8th Grade June Mathematics	23 8th Grade June English	24 8th Grade June Social Studies	25 8th Grade June Science	26 8th June GPA
1	-	196	263	035	102	123	212	270	217	213	179	186	154	220	126	212	216	106	246	261	272	127	161	097	177	166
2	320	-	304	056	298	145	142	240	188	175	151	224	055	143	214	199	195	043	064	237	177	170	151	050	175	159
3	311	464	-	469	694	487	602	721	696	439	449	356	270	361	334	411	426	243	327	537	484	302	313	353	453	426
4	047	053	379	-	329	191	336	405	453	223	425	-073	033	156	108	072	141	044	099	245	168	055	033	120	206	135
5	247	421	688	344	-	461	639	629	698	476	512	395	061	260	348	334	531	214	341	420	475	430	250	329	386	413
6	225	367	632	368	467	-	577	557	533	484	437	234	053	183	091	174	070	134	093	146	172	-028	108	190	114	115
7	160	260	551	289	429	455	-	647	676	489	521	339	179	381	288	370	361	244	512	400	483	308	279	443	353	413
8	211	314	582	292	483	437	659	-	717	498	572	281	173	382	411	394	337	101	252	599	419	239	209	316	456	365
9	100	130	212	099	187	153	458	432	-	664	673	273	141	291	307	317	342	112	308	412	374	299	168	363	409	370
10	083	154	235	112	187	224	339	370	327	-	626	252	091	121	206	209	137	084	186	230	204	164	159	210	253	232
11	256	346	538	285	444	424	350	365	163	280	-	071	-004	169	140	119	193	077	190	280	242	146	047	189	255	189
12	264	470	518	155	530	318	309	327	140	154	276	-	378	502	563	757	542	369	430	493	572	465	414	356	394	479
13	299	514	513	157	407	461	311	288	137	161	379	631	-	620	538	782	324	465	318	383	454	318	509	393	385	474
14	305	507	544	169	419	403	395	317	145	136	360	626	735	-	574	838	402	399	415	473	355	346	546	422	446	517
15	310	532	572	180	435	401	356	402	119	189	391	696	706	727	-	840	545	349	445	537	587	458	465	477	502	552
16	338	578	608	190	518	447	390	377	150	180	420	825	875	883	892	-	566	489	501	588	668	495	600	514	538	629
17	299	524	544	166	650	338	308	342	151	166	378	657	605	597	613	699	-	487	475	577	849	749	553	563	587	730
18	292	537	522	170	415	524	303	300	140	163	387	591	710	663	651	746	633	-	546	343	719	420	616	455	413	562
19	313	512	558	155	448	379	458	353	151	177	387	612	639	684	690	750	653	684	-	533	848	620	539	722	576	730
20	324	528	582	185	479	396	338	492	139	178	413	599	620	631	681	722	686	658	713	-	766	435	424	555	720	638
21	355	603	635	195	576	466	407	429	167	193	434	705	736	704	756	840	853	847	874	877	-	691	677	723	709	832
22	320	531	549	178	587	335	318	363	132	173	388	651	610	614	629	712	824	643	666	691	810	-	600	662	565	838
23	306	535	518	154	421	460	314	300	129	189	371	566	682	644	640	722	630	813	664	655	788	649	-	600	553	810
24	307	485	553	159	441	390	406	334	128	166	396	569	619	673	657	724	636	653	813	684	799	672	674	-	673	875
25	317	524	562	171	478	379	345	436	130	186	442	599	626	646	686	735	666	661	714	813	817	712	671	728	-	834
26	335	567	610	175	532	431	378	399	145	198	325	718	687	695	711	778	768	752	776	774	879	832	808	822	835	-

NEGROES N = 114