

A GUTTMAN FACET ANALYSIS OF THE RACIAL  
ATTITUDES OF BLACK AND WHITE ADULTS TOWARD  
THE OPPOSITE RACE

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## ABSTRACT

### A GUTTMAN FACET ANALYSIS OF THE RACIAL ATTITUDES OF BLACK AND WHITE ADULTS TOWARD THE OPPOSITE RACE

By

Aubrey Radcliffe

The significance of the racial attitudes of Black and White adults is of utmost concern in our present society. This dissertation was an outgrowth of this concern as well as an attempt to investigate the dimensions of racial attitudes.

#### Purpose of the Study

The primary purpose of the study was to provide information about the attitudes of Blacks and Whites toward each other and to investigate the hypothesized relationships between these attitudes and certain types of independent-predictor variables. A comparison of the attitudes of Black adults with those of White adults was another purpose of the study.<sup>1</sup>

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<sup>1</sup>This research is related to a larger cross-cultural study of racial/ethnic attitudes under the direction of John E. Jordan, College of Education, Michigan State University.

### Instrumentation

A research instrument based on facet analysis was developed by Jordan and Hamersma (1969) called the Attitude Behavior Scale: Black/White (ABS-BW). Construction of the items followed a systematic a priori method rather than by the method of intuition or by the use of judges. Guttman's (1959) facet theory specifies that the attitude universe represented by the item content can be substructured into behavioral profiles which are systematically related according to the number of identical conceptual or semantic elements they hold in common. This substructuring of an attitude-behavior enables the prediction of relationships between various profiles of the universe. Jordan expanded Guttman's 4 attitude levels to form a 6-level paradigm of attitude structure.

The concept of levels of attitude strength enables the researcher to investigate the multidimensionality of an attitude, which represents the levels of an attitude and reflects at which levels attitudes may change.

### Design and Analysis Procedure

The ABS:BW/WN-E was administered to 179 White adults and 40 Black adults in the evening credit course



for high school completion in Lansing, Michigan.

The determinates of attitudes were represented by 14 independent variables which were intercorrelated with content scores of the criterion (ABS:BW/WN-E) across each level. This facilitated testing eight hypotheses using Multivariate Multiple Regression, Multivariate Analysis of Variance, Pearson Product Moment correlations, and the  $Q^2$  statistic.

### Results

Results of hypotheses tested by multivariate multiple regression were as follows:

1. Efficacy, which tested man's sense of control over his environment, was not related to positive attitudes for Blacks or Whites.
2. "Set in ways" and "child rearing" was a significant predictor of attitudes for both Blacks and Whites.
3. Enjoyment of contact was the most significant predictor of favorable attitudes for Whites.

The multivariate analysis of certain hypotheses had the following results:

1. There was no significant difference on the attitudinal score based on political affiliation and religion.
2. A significant difference was found between attitudes and race. Blacks were more positive toward Whites at Levels 1 and 2 (stereotypic and normative). Blacks see the images and norms of society as being more positive toward Whites than for Blacks. At Level 5 (feeling) Whites tended to indicate a desire to be more positive in their attitudes toward Blacks.
3. A significant difference was found between sex and attitude. White females were found to be the most positive toward members of the opposite race at Levels 4 and 5 (hypothetical and feeling). Black males and females were the least positive toward members of the opposite race at Level 5 (feeling). At Level 6 (action) Black men and White women were the most positive to the opposite race.

The results from the two sample groups formed an approximate Guttman Simplex.

Recommendations were made to incorporate the present study into a larger cross-cultural study.

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Amo

Dedicated to my wife Kathy,

and

Ricky and Debbie

## PREFACE

This study was one in a series jointly designed by several investigators. The study is an example of the project approach to graduate research. A common use of instrumentation and theoretical material, as well as technical and analytical procedures, was both necessary and desirable.

## ACKNOWLEDGMENTS

I am deeply indebted to many people for their help with this thesis. I owe my greatest gratitude to Dr. John E. Jordan, my dissertation chairman. His constant encouragement guided me through the research from its formative stages through its completion.

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## CHAPTER I

### INTRODUCTION

The present study examines racial attitudes of adults in the Lansing Public School's continuing education program in Michigan. At no other time in our history is it more important to understand attitudes between the races. Thus, this study is an outgrowth of this concern.

#### The Problem

This study will attempt to analyze sub-sets of attitudes of Blacks and Whites toward each other. The present racial situation in the United States is incredibly confusing and disarming. Both Black and White people--in an attempt to reduce the complexity and variety of the relationships between members of the two races--tend to rely upon simple generalities while coping to exist with one another. At worst such generalities degenerate into a crude form of racism affecting both groups. At the least such attempts neglect to acknowledge the fact that the diversity within each race is far more significant than the differences between races and that no characteristic is held universally within either.

Need

Previous studies have considered the attitudes of the races toward each other. Society in the United States, as a result of tremendous technology, is undergoing dramatic social change. Social scientists today are making a concerted effort to alleviate some of the problems of ethnic prejudice. In order to effect a meaningful solution, an understanding of the nature of prejudice must be achieved.

The 1968 Report of the National Advisory Commission on Civil Disorders has documented in detail the racial disorders which occurred in American cities. In summarizing what happened and why it happened, it speaks of race prejudice and racism among the White population and frustration, dissatisfaction, and hostility among Blacks. It called for a program of national action which will require from every American new attitudes, new understanding, and new will.

The more a society is unable to accommodate mutual expectations and relationships among substantial numbers of its members, the more it has an active social problem which threatens its functioning as an effective social order.

Therefore it is a practical necessity for society to develop a new and harmonious order of relationships which will accommodate these new and legitimate aspirations. It is this growing necessity which is at the heart of the current ferment about race-related problems.

### Purpose

The purpose of this study is to provide information on the attitudes of groups of Black and White adults in a continuing education program toward each other and to study hypothesized relationships between attitudes and certain types of independent-predictor variables. The methodological framework used is the Guttman facet analysis in the study of racial attitudes.

### Delimitations:

1. This study will be confined to the Lansing Public School's adult evening program.
2. It will be limited to Black and White adults who participate in the evening credit courses toward high school completion.

### Definitions:

1. Adult -- any person who has passed the age at which the compulsory school attendance laws apply

in the state of Michigan.

2. Adult Education Program -- an evening credit program toward completion of a high school diploma.
3. Attitude -- "a delimited totality of behavior with respect to something" (Guttman, 1950, p. 51).

Jordan (1968) reviewed the literature on attitude studies and concluded that four classes of variables seem to be important determinants, correlates, and/or predictors of attitudes:

1. Demographic factors such as age, sex, and income.
2. Socio-psychological factors such as one's value orientation.
3. Contact factors such as amount, nature, perceived voluntariness, and enjoyment of the contact.
4. The knowledge factor, i.e., the amount of factual information one has about the attitude object.

### Scales

The ABS:BW/WN scales were developed by Jordan and Hamersma (1969). It is concerned with measuring the attitudes of Blacks and Whites toward each other in seven attitude content areas:



1. (C) Characteristics - Personal
2. (E) Education
3. (H) Housing
4. (J) Jobs
5. (L) Law and Order
6. (P) Political Activism
7. (W) War and Military
8. (G) General

The first seven areas of content were identified as of crucial importance for interracial interaction and the eighth area is a composite of the 'best' two items from each of the first seven. The Education (E) scale is the one used in this research (Hamersma, 1969).

### Hypotheses

If one postulates multiple levels and dimensions of racial attitude-behaviors as well as multiple predictor variables, it becomes necessary to consider several hypotheses.

The research hypotheses tested are as follows:

#### Attitudes and Values

H-1.--There is a positive relationship between high efficacy scores and positive attitudes toward the opposite race.

Attitudes and Change Proneness

H-2.--There is a positive relationship between a high score on change proneness and a high attitude score.

Attitudes and Contact

H-3.--Favorable attitudes toward members of the opposite race are related to a) kind of contact; b) amount of contact; c) ease of avoidance of contact; d) gain from contact; and e) enjoyment of contact.

Attitudes and Political Affiliation

H-4.--There is a significant difference among attitude scores of political groups.

Attitudes and Sex

H-5.--There is a significant difference between the attitude scores of males and females.

Attitudes and Religion

H-6.--There is a significant difference among attitude scores of religious groups.

Attitudes and Race

H-7.--There is a significant difference between attitude scores of racial groups.

### Simplex Approximation

H-8.--The ABS:BW/WN-E will form a Guttman Simplex for each of the racial groups.

### Organization of the Thesis

The thesis has five chapters which are organized in the following manner:

Chapter I will include the problem, purpose, need for the research, and a general statement of the hypotheses.

In Chapter II, a review of literature will contain literature related to Black and White attitudes. It will also present literature related to attitude scale development.

Chapter III contains the design and methodology of the study. A section on Guttman facet analysis and the development of the Attitude Behavior Scale will be presented. The procedure, population research hypotheses along with statistical analyses, and rationale are stated.

In Chapter IV, the results of the analyses of the data are presented.

Chapter V will include a summary of the study and conclusions about the data. Included in this chapter are recommendations and implications for further research.

## CHAPTER II

### REVIEW OF THE LITERATURE

This chapter contains definitions and a review of attitudinal research which relates to: (a) attitudes of Blacks and Whites toward each other, (b) review of scales used in measurement of racial attitudes, and (c) research related to major variables of the study.

The concept of attitude has been in constant use by social psychologists since the early years of the twentieth century. According to Allport (1954), the concept emerged from an extensive analysis of the emigration of the Polish peasant. Studies of attitudes toward intergroup relations has been a concern of all of the social sciences.

#### Definitions of Attitudes

Various definitions of attitudes have been posited. A few of the definitions are as follows:

An attitude is a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon

the individual's response to all objects and situations with which it is related (Allport, 1967).

An attitude is a relatively stable affective response to an object (Rosenberg, 1956).

Attitude is primarily a way of being "set" toward or against certain things (Murphy, Murphy and Newcomb, 1937).

Allport's definition implies that attitudes refer to a very general "state of readiness." Murphy, Murphy, and Newcomb restrict the state of readiness or "set" to reactions "toward or against" certain objects. Their phrase "toward or against" implies evaluation, pro or con.

An attitude is an implicit response which is both anticipatory and mediating in reference to patterns of overt responses, which is evoked by a variety of stimulus patterns as a result of previous learning or of gradients of generalization and discrimination, which is itself cue-and-drive producing, and which is considered socially significant in the individual's society (Doob, 1947).

Mehrens and Lehmann (1969) define attitudes as predispositions to attitudinal objects.

An attitude is a response consistent with regard to social objects.

. . . an enduring system of positive or negative evaluation, emotional feeling, and pro or con action tendencies with respect to a social object.

A common fiber in these definitions is to regard an attitude as a "predisposition" to behavior. This view

is one of two primary ones found in the literature. The other view is that of Guttman (1950), who defines an attitude as "a delimited totality of behavior in respect to something (p. 51)."

Harding (1969) describes the three components of attitudes as conative, cognitive, and affective in the following terms:

The conative components of an ethnic attitude include beliefs about "what should be done" with regard to the group in question and action orientation of the individual toward specific members of the group;  
 The cognitive components are the perceptions, beliefs, and expectations that the individual holds with regard to various ethnic groups;  
 The affective components of an ethnic attitude include both the general favorability or unfavorability of the attitude and the specific feelings that give the attitude its affective coloring. On the positive side they include such feelings as admiration, sympathy, and "closeness" or identification; on the negative side they include contempt, fear, envy, and "distance" or alienation.

The concept of levels of attitude strength is significant in research on attitudes, because it enables the researcher to investigate the multidimensionality of an attitude. This represents levels of strength and enables the researcher to find out at which levels attitudes may change.

### Attitudes and Personality

Adorno (1950) and Christie and Jahoda (1954) were some of the early pioneers in an attempt to explain the roots of prejudice in terms of a specific constellation of personality attributes. Respect for force, intolerance of deviance, dominance of subordinates and submission to superiors are characteristic of the authoritarian personality. Individuals who exhibit these traits usually score high on the F scale which measures anti-democratic attitudes and authoritarianism. They are also predisposed to racist attitudes, as reflected by high scores on the E (Ethnocentrism) scale which contains items pertaining to Blacks.

The frustration-aggression hypothesis (Dollard, 1939) has also been used to explain prejudicial attitudes. The theory postulates that frustration results in aggressive tendencies, which are displaced from a less assailable or less accessible target to a more vulnerable or more accessible one. A person of the opposite race could thus become the object of aggressive behavior. Society, itself, may designate certain groups as scapegoats, rationalizing this action by pointing out "undesirable" characteristics of these "outgroups" (Allport, 1954). According to Hites and Kellogg (1964), the basic objection to the use of either

the E scale or the F scale to measure racial prejudice toward Negroes is that these scales are not a "pure" measure of racial prejudice but rather are measuring the concepts of ethnocentrism and facism respectively and can only indirectly measure racial prejudice.

Attitudes of Blacks toward Whites  
and Whites toward Blacks

Noel and Pinkney (1964) found that Black Americans have been less prejudiced toward Whites than Whites toward Blacks. Proenza and Strickland (1965) found that Black college students exhibited significantly less social distance toward Whites than White students exhibited toward Blacks. Bogardus (1958) indicated a trend toward positive racial attitudes.

Due to the recent identity fervor that has engulfed Black people, it can be hypothesized that recent research might indicate that Blacks are not as racially positive toward Whites as before.

Noel (1964) found that strong group identification was associated with low generalized prejudice. Kitano (1966) alluded to all who practice discrimination. He hypothesized that a person with a "normal" personality discriminated in a passive way by limiting his



interaction with the opposite group. He might verbalize the idea of equality for all men, but in the area of human interaction he would prefer his friends and friends of his children to be of his own reference group.

Harding (1969) found that a White child in America becomes sensitive to racial differences and develops racial stereotypes and attitudes during his early years. Schwartz (1967) found that a majority of White Americans approved the 1954 decision of the Supreme Court but disliked the idea of sending their children to a school with more than a token number of Blacks.

Differences in the racial orientation of Black and White people undoubtedly derive from their own lifetime experiences and from the social environment in which they now find themselves. White people who were reared in the south demonstrate the consequences of socialization within the racial mores of that region. This would also apply to Blacks reared in today's urban large cities.

From a religious point on racial attitudes, Jewish people differ from Catholics and Protestants in that they tend to reflect their own minority status and the "liberal" tradition of their own culture.

Campbell (1971) states that the reaction to proposals of interracial contact is a function of the degree of social distance implied. An example is the work situation which is not threatening to White people because it involves only the mere public aspects of the personality.

The strong pressure to conform to societal norms has been pointed out by Pettigrew (1961) as a crucial factor in the attitudes of White Southerners towards Blacks:

It is the path of least resistance in most Southern circles to favor white supremacy. When an individual's parents and his peers are racially prejudiced, when his limited world accepts racial discrimination as a given way of life, when his deviance means certain ostracism, then his anti-Negro attitudes are not so much expressive as they are socially adjusting (p. 109).

Pettigrew advocates research that pays more attention to sociocultural or normative factors, as distinct from personality variables, involved in interracial situations. Viewing discrimination in the context of conformity to prevalent norms, one may well conceive of racism as sociopathology rather than individual psychopathology.

Also influencing the degree of prejudice expressed are the areas of interracial contact, as well as competitive or cooperative task situations (Goldman,

Warshay, and Biddle, 1962; Meer and Freedman, 1966; Rice and White, 1964).

Stereotypes may play a role in the environmental transmission of prejudice (Ehrlich, 1963, 1964, and Ehrlich and Rinehart, 1965). Prevalent acceptance of negative stereotypes about Blacks augments the probability that diffusion of racist attitudes will ensue even among Whites who had never had any personal contact with Blacks. Such acceptance exhorts the transmission of prejudice to each generation at successively earlier ages before positive attitudes based on real experiences with Blacks can be established.

Still another element in the development of inter-racial attitudes is social class membership. Gordon (1964) has proposed the concept of "ethclass," a combined membership in a particular ethnic group and social class. He maintains that such membership directly affects one's group identity and social and cultural behavior. Of the two components of the ethclass, social class is seen as dominant to ethnic group membership. Landis, Datwyler, and Dorn (1966) confirmed Gordon's thesis--their findings indicate that regardless of race, the social distance scores of middle-class respondents were lower than those of lower-class respondents, suggesting their relatively stronger

inclination to relate socially to other groups. Whites, however, had higher social distance scores than Blacks.

Bogardus (1925) was one of the first to systematically investigate intergroup attitudes. His paper-and-pencil questionnaire technique is used extensively by many researchers today. Bogardus' seven alternatives represented gradually increasing degrees of social distance ranging from association through kinship by marriage, to association as a neighbor on the same street, to employment in some occupation, to citizenship in a country, to visitor in a country, and finally to exclusion from a country.

"Prejudice," in the present context, refers to a negative bias or distortion in an individual's perception of and beliefs about a particular group and its members (Allport, 1954).

### Scales Used in Measurement of Racial Attitudes

#### Thurstone Scales

Scales that are constructed by the Thurstone technique require judges to scale or sort items into piles (usually eleven piles are used,) ranging on a continuum from "favorable to unfavorable" toward the attitude object under construction. Items are then given weights (medium value)

according to which pile they are in using all the judges' ratings. Respondents taking a Thurstone scale are asked to check only those items with which they agree or disagree.

Thurstone (1931) developed a 24-item attitude scale toward Blacks and later used it (1932) in his research on the effects of movies upon children. The scale consisted of a single form and contained mostly stereotypic items. Hinckley (1932) developed a racial attitude scale using Thurstone procedures. This scale as well as Thurstone's original scale are outdated in regard to some of their items such as attitudes on mass lynchings and complete servitude.

Thurstone scales have received much criticism regarding the objectivity of the judges. According to Thurstone, the attitudes of the judges used in the initial sorting of the items would not affect their judgment of the items. Sherif's (1952) study shows results that items are judged quite differently by persons having different attitudes. Judges with extreme attitudes tended to displace neutral statements toward the end of the scale opposite their own position. Another criticism was with

regard to the time and labor involved in the construction and scoring (Jahoda and Warren, 1966).

### Summated Scales

Summated scales are frequently referred to as Likert-type scales. Items are selected by intuition and only those items which are felt to be definitely favorable or definitely unfavorable to the attitude object are employed. Items that are neutral or slightly favorable or unfavorable are excluded from Likert scales. Subjects are asked to respond to each item in terms of several degrees of agreement or disagreement; i.e., 1) strongly agree, 2) agree, 3) undecided, 4) disagree, and 5) strongly disagree. The scales are scored by summing the "number" of the response categories marked by the subjects on each item over all the items on the scale. This results in a total score which is interpreted as the individual's position on a scale of favorable-unfavorable attitude toward the object in question.

Likert (1932) constructed a 15-item attitude scale toward Blacks. Most of the items were of stereotypic nature. The scale did not include items dealing with hypothetical interaction with Blacks.

A 16-item Likert type scale was constructed by Steckler (1957) for use with Black samples. This is one of the few scales designed to measure attitudes toward the subject's own reference group.

A criticism of the scale is that often the total score of an individual has no clear meaning, since many patterns of response to the various items may produce the same score (Jahoda and Warren, 1966).

#### Guttman Scales

The main purpose of Guttman's scalogram analysis was devised to ascertain whether the attitude or universe of content involves a single dimension; i.e., whether it was unidimensional or not. The scales are composed of a series of items to which the respondent indicates agreement or disagreement. If it is unidimensional, it will yield a perfect or near perfect scale so that it is possible to arrange all the responses of any number of respondents into a particular pattern depending on their score.

A true Guttman scale would be required to have a coefficient of .90 or above. This scalability of items is called the coefficient of reproducibility. An example of a perfect Guttman scale would be one concerning weight. If the items read: (a) My wife weighs more than 100 pounds, (b) My wife weighs more than 110 pounds, (c) My

wife weighs more than 125 pounds, etc., and each answer is assigned a weight of 1, and when we know a person's total score is 2, then we can reproduce his individual responses and state that he answered "Yes" to items 1 and 2 and "No" to item 3. Guttman's scaling procedures (Guttman and Suchman, 1947) also allows for the establishment of a neutral region of the scale by employing an intensity function. The neutral region permits a second method of distinguishing favorable from unfavorable attitudes.

Kogan and Downey (1956) constructed an eight-item Guttman-type scale involving what people do in different situations involving Blacks. Criticisms (Jahoda and Warren, 1966) have been stated about the Guttman scale because it is unidimensional, and therefore it cannot measure complex attitudes. A scale may be unidimensional for one group and not for another. Guttman's recent contribution to scale construction and attitude measurement (i.e., facet design and nonmetric analysis) avoid many of the prior criticisms since these are multidimensional in nature and also include an a priori method of item construction.



### Projective Tests Used in Measuring Racial Attitudes

Projective tests and scales have been used in many ways to measure racial attitudes. These tests tend to present an ambiguous stimulus to which the subject is asked to respond. The validity of such indirect measures are usually lower than the more direct paper-and-pencil test.

Meier (Campbell, 1950) used doll cut-outs to represent various racial groups. The subjects were asked to respond to what they would do in certain situations illustrated by the doll cut-outs.

Many racial attitude instruments that are designed for a particular study are restricted in their application and are very seldom replicated.

### Review of Predictor Variables

#### Contact

Pettigrew, (1969) states that when Blacks interact, particularly on an equal-status basis, as in integrated neighborhoods, the military, and in schools, prejudice and discrimination tend to decrease. Such prolonged contact tends to reduce or eliminate stereotypes and makes known each other's true belief system and values.

Brophy (1964) found that contact increases positive attitudes toward members of the opposite race. Allport and Kramer (1964) indicate that there is a degree of positive relationship between attitudes toward a given racial group and number of personal contacts with members of that group. Carter and Mitchell (1955-56) found that amount of contact was significant.

Kelly, Ferson, and Holtzman (1958) indicated that the more the quality of social interaction involves a friendly and personal approach to racial groups on the basis of implied social equality, the more favorable was the attitude. Jeffries and Ransford (1969) found that Whites lacking contact are fearful of Blacks, thereby displaying more feeling of increased social distance and tending to voice more punitive responses than those having contact. This study suggests that those who have experienced social contact tend to be more tolerant.

Jordan (1968) found that amount of contact per se did not necessarily determine positive attitudes, but was more directly related to attitude intensity.

### Religion

Campbell (1971) relates the little difference in racial attitudes associated with attachment to Protestant

or Catholic religious institutions. He claims that since the church serves as a major force of acculturation in American society, one must conclude that its contribution to racial patterns in the United States has been to preserve the status quo. It is felt that despite the church's inculcation of moral values, its influence to improve racial attitudes has been limited.

Merton (1940) found that Catholics tended to be more prejudiced than Protestants, with Jews and people claiming no religious affiliation the least prejudiced of all. Allport and Kramer (1946) assert that a religious environment based on church attendance does not induce a person to be tolerant.

### Efficacy

Wolf (1967) states there is a relationship between high efficacy scores and attitudinal scores. Wolf states:

The continuum underlying this scale ranged from a view that man is at the mercy of his environment and could only hope to secure some measure of adjustment to forces outside of himself, to a view that man could gain complete mastery of his physical and social environment, and use it for his own purpose (p. 109).

Sexton (1961) found that the disadvantaged suffer feelings of powerlessness due to their environment.

Campbell (1971) indicates that we would not expect an individual who sees his world as secure to feel the same about racial issues as a person who feels himself surrounded by a threatening and unresponsive environment.

### Change

Jordan (1969) indicated that those who have high "change proneness" scores tend to have more positive racial attitudes. Allport (1954) indicates a relationship between rigidity and prejudice.

### Political Affiliation

Political affiliation may be associated with the type of attitudes a person may have. Wilson (1965) and Bailey (1967) indicate that the most significant goals of Black people is the need for civil rights, and in lieu of this need many Blacks feel that the Democratic party has demonstrated a liberal atmosphere about goals of primary interest to Blacks.

Brink and Harris (1967) stated:

Commitment to major parties, by and large, means commitment to the Democratic party. By 1966, Negro registration in the Democratic column totaled 79 per cent, compared with 10 per cent Republican, and 5 per cent Independent. The remaining 6 per cent failed to express a view

in the Newsweek survey. . . . More significant than mere enrollment, however, is the expression of faith Negroes give to the Democratic party as the political organization that will help them. . . . The pro-Democratic sentiment is also a reflection of the deep distrust Negroes have for Republicans (pp. 92-93).

### Sex

Montague (1970) indicated that women were significantly more favorable to members of the opposite race due to the life style of women as compared to men. Allport and Kramer (1946) found women to be less prejudiced than men. Bogardus (1959) reported that White women showed more social distance to Black men than did White men.

Pettigrew (1959) reported that southern White women were significantly more prejudiced than White men. The research indicated that women who are the carriers of the culture reflect the mores more directly than men, thus helping to maintain the status quo. Weller (1964) found no significant sex differences in his study.

### Summary

In this chapter<sup>1</sup> definitions and a review of attitudinal research are reported. Attitudes of Blacks and Whites toward each other, scales used in measurement of racial attitudes, and research related to the major variables of the study are part of this review of the literature. The variables reviewed are considered to be predictors of attitudes toward the opposite race.

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<sup>1</sup>The reader should be aware of two sources of studies on racial-ethnic attitudes that will soon be available. The Social Science Research Bureau of the University of Michigan has underway a comprehensive study of Black-White attitudes and the American Jewish Committee in New York has underway a series of studies on White ethnic groups throughout the United States.

## CHAPTER III

### METHODOLOGY AND PROCEDURE

This research was primarily concerned with the attitudes of White and Black adults toward each other in the evening credit courses toward high school completion.

The following sections contain a discussion and theoretical basis of instrumentation, selection of sample, and the hypotheses of the study.

#### Instrumentation

The Attitude Behavior Scale: Black White/White Negro - Education is a facetized instrument which measures six levels of racial attitude-behaviors. The dependent or criterion variable representing six levels of attitude strength (object-subject relationships) were analyzed in relation to selected independent variables. The independent variables are instrumented in the Personal Data Questionnaire.

#### Reliability

Reliability estimates for the six levels were obtained by the Hoyt (1941, p. 153-160) method described

by Winer (1962). This method employs analysis of variance to produce a reliability coefficient equivalent to the Kuder-Richardson measure of internal consistency at each of the six levels of attitude measured. Hoyt reliability estimates for the life situation scales were also obtained (Table 8).

### Attitude-Behavior Scales (ABS)

The instrument employed in this study is a result of Jordan's attitude-behavior research. Construction of the scales was based on facet theory, and construction of the items followed a systematic a priori method rather than by the method of intuition or by the use of judges. Guttman's (1959) facet theory specifies that the attitude universe represented by the item content can be substructured into behavioral profiles which are systematically related according to the number of identical conceptual or semantic elements they hold in common. The substructuring of an attitude-behavior universe into facets and elements facilitates a sampling of items within each of the derived profiles, enables the prediction of relationships between various profiles of the universe, and should also provide a set of clearly defined profile areas for cross-cultural comparisons.

In constructing the first scale, ABS-MR, Jordan (1970) "postulated that attitudes involve not only object-specificity but situation-specificity and object-subject



relationships" (p. 48). In the case of the MR scale, the object was the mentally retarded; situations included such areas as experiences, education, personal characteristics, and relationships between the object and the actor (self or others).

Guttman (1959) suggests a common semantic meaning: a progression from a weak to a strong form of behavior of the subject vis-a-vis the attitude object--in this case, the mentally retarded. Examination of Table 3 indicates the rationale of this ordering system.

- Facet A - the referent other is weaker than self--I--in being less personal.
- Facet B - belief is weaker than experience--overt behavior--in being passive rather than active.
- Facet C - referring to the behavior of one's self rather than that of others--mine/my--is stronger in that it implies personal involvement.
- Facet D - comparative behavior is weaker than interactive behavior. It does not imply social contact, and a comparison is more passive than interaction.
- Facet E - hypothetical behavior is weaker than operational. It does not imply acting out behavior.

The rationale used in the selection of the item content of the ABS-MR (and of the other Attitude Behavior Scales that followed) attempted to 'order' the item content via three principles:

1. Ego involvement: Cognitive-affective. Is the 'attitude object in situation y' dealt with cognitively or affectively?

2. Social distance: Distant-close. Is the 'attitude object in situation y' distant or close to one's self?
3. Relevance: Low-high. Is 'situation y' relevant and/or important to the subject?

Consistent with the above discussion of the weak-strong principle developed in Tables 3 and 6, a positive or stronger attitude would be expressed by a subject who "agreed with or chose" items that dealt with the attitude object in "highly important situations that involved the self in close interpersonal action."

Two types of data analysis are indicated: (a) an analysis of the facets across the six levels, i.e., asks the question whether or not the simplex was obtained; and (b) an analysis of the scalar nature of the content within each of the six subscales. The first analysis deals with the joint dimension and the second with the lateral dimension (Jordan, 1968).

Joint struction refers to the difference between subscales, or levels, of Facets A through E of Figures 1 and 2. Six additional facets, F through K, were added to differentiate item content within levels. These additional facets denote item content and are labelled lateral struction. The complete mapping sentence for the family of scales constructed, or to be constructed, on this a priori basis is given in Figure 1. Every item on every

level of a form of the ABS corresponds to a combination of elements of each and every Facet, A through K. The ordering system for lateral struction, however, has not been developed as fully as has the system for joint struction.

Jordan's (1970) research with the ABS-MR set out to test five main substantive questions or purposes. These five purposes (that have essentially been achieved) are as follows: "(a) that the ABS-MR attitude levels do exhibit a simplex structure; (b) that relevant object-situations were selected; (c) that selected variables are effective predictors of favorable attitudes; (d) that the ABS-MR can differentiate between groups; and (e) that the ABS-MR is acceptably cross-culturally equivalent and comparable" (pp. 50-51).

#### Guttman's Theoretical Structure: A Four-Level Theory

In facet design, Guttman promulgated a method that examined various semantic facets which were involved in ordering a particular response to an individual item.

Guttman's (1959) theory involves a discussion of semantic structure and a statistical analysis of that structure. He felt that it was necessary to relate more abstract conceptions to actual observations and experience.

From research completed by Bastide and van den Berghe (1957), Guttman abstracted definitions for the four subuniverses of attitudes. Because Bastide and van den Berghe's work dealt with interracial attitudes, the definitions involve Whites and Negroes. The definitions were reordered by Guttman, and read as follows:

1. Stereotype: Belief of (a white subject) that his own group (excels-does not excel) in comparison with Negroes on (desirable traits).
2. Norm: Belief of (a white subject) that his own group (ought-ought not) interact with Negroes in (social ways).
3. Hypothetical Interaction: Belief of (a white subject) that he himself (will-will not) interact with Negroes in (social ways).
4. Personal Interaction: Overt action of (a white subject) himself (to-not to) interact with Negroes in (social ways).  
(Guttman, 1959, p. 32)

In delimiting the differences in structure in each of the definitions, Guttman notes differences in three facets. "A facet is a semantic unit or factor. Guttman looks at a facet in terms of set theory where a facet is a set containing elements" (Hamersma, 1969, p. 60). "Each definition concerns a type of behavior of a subject vis-a-vis a type of intergroup behavior of a type of referent" (Guttman, 1959, p. 320). Each of these

three facets in turn has two elements and, therefore, each is dichotomous as depicted in Table 1.

TABLE 1.--Basic facets used to determine component structure of an attitude universe.

(A) Subject's Behavior	(B) Referent	(C) Referent's Intergroup Behavior
$a_1$ belief	$b_1$ subject's group	$c_1$ comparative
$a_2$ overt action	$b_2$ subject himself	$c_2$ interactive

One element from each and every facet must be represented in any given statement, and these statements can be grouped into profiles of the attitude universe by multiplication of the facets  $A \times B \times C$ , yielding a  $2 \times 2 \times 2$  combination of elements or eight semantic profiles in all; i.e., (1) $a_1b_1c_1$ , (2) $a_1b_1c_2$ .....(8) $a_2b_2c_2$ . It can be seen that profiles 1 and 2 have two elements in common ( $a_1$  and  $b_1$ ) and one different ( $c_1$  and  $c_2$ ), whereas, profiles 1 and 8 have no elements in common.

According to Foskett (1963, p. 111):

Two sets of facets, A and B, containing elements  $a_1, a_2 \dots a_m$  and  $b_1, b_2 \dots b_n$  and a set C which is the product of A and B, then the elements of C are made up of pairs of elements, one from A and one from B;  $Ca_j \times b_k$ . If A has m elements and B has n elements, then C has mn elements. C is a two-faceted set, and A and B are facets of C.

The capital letters A, B, and C depict the three facets, while the subscripts denote the respective elements. Thus,  $a_1b_1c_1$  reads: Belief ( $a_1$ ) of a subject that his own group ( $b_1$ ) interacts ( $c_1$ ) with a specified attitude object. Similarly,  $a_2b_2c_2$  reads: Self or observed reports of a subject's overt action ( $a_2$ ) of himself ( $b_2$ ) interacting ( $c_2$ ) with a specified attitude object.

The four subuniverses (levels) that Guttman derived from Bastide and van den Berghe (1957) have been facetized as shown in Table 2.

TABLE 2.--Guttman facet profiles of attitude subuniverses.

Subuniverse	Profile
1. Stereotype	$a_1 b_1 c_1$
2. Norm	$a_1 b_1 c_2$
3. Hypothetical Interaction	$a_1 b_2 c_2$
4. Personal Interaction	$a_2 b_2 c_2$

There is a rank ordering of facets present in the design; Guttman refers to it as a progression from a weak to a strong form of the subject's behavior vis-a-vis the attitude object. The more subscript '2' elements a profile contains, the greater the strength of the attitude.

Guttman proposed that the semantic structure of

the attitude universe would provide a social-psychological basis for predicting the structure of the empirical inter-correlation matrix of the four levels.

One cannot presume to predict the exact size of each correlation coefficient from knowledge only of the semantics of universe ABC, but we do propose to predict a pattern or structure for the relative sizes of the statistical coefficients from purely semantic considerations (Guttman, 1959, p. 324).

Guttman expressed this prediction as the "contiguity hypothesis," which states: Subuniverses closer to each other in the semantic scale of their definitions will also be closer statistically. Thus, the intercorrelations should reveal a simplex ordering, so that the maximum predictability of each level is attainable from its immediate neighbor or neighbors alone. This predicted relationship has been obtained for the ABS-B/W Scale by Jordan and Hamersma (1969), the ABS-MR Scale (Attitude Behavior Scale-Mental Retardation) by Jordan (1969), as well as by Foa (1958, 1963).

#### Jordan's Six-Level Adaptation

Jordan's five-facet, six-level theory encompasses Guttman's three-facet, four-level design, expanding the theory in the affective and conative dimensions. Specifically, Jordan maintains Guttman's four original levels, but adds two new levels toward the lower end of Guttman's

scale. For a visual presentation of Jordan's six-level theory, see Tables 3 and 4. A comparison of Guttman and Jordan facet designations is in Table 5. Guttman included four attitude dimension categories: stereotype, norm, hypothetical interaction, and personal interaction (Table 2). According to McGuire (1969), these facets are primarily concerned with the cognitive and affective domains of behavior. Only the last level, personal interaction, includes any conative material. It is at this point that Jordan visualized the need to expand Guttman facet theory. Jordan places more emphasis on the affective and conative elements of attitude-behavior. His theory, while including Guttman's four levels (cognitive and affective elements), extends Guttman into the realm of conative behavior. His two additional levels, personal feelings (level 5) and actual personal action (level 6) extend the theory to 'real', observable behavior. These levels are evaluating the subject's actual feelings and actions, instead of his perceived thought, beliefs, and opinions (as measured in the first four levels). They appear to be the crucial levels at which attitudinal change occurs (see Tables 4 and 5 for a more explicit examination of Jordan's six levels and a comparison of Guttman and Jordan facet designations).

Tables 3 and 4 propose a structured definitional



or semantic system for the relationships between the six scale levels. According to Jordan (1971), the Cartesian product of the five two-element/facets of Table 3 yields 32 possible profiles (Table 7). As shown in Table 4, six of these profiles were chosen as psychologically relevant, potentially capable of instrumentation, and possessing a specific relationship among themselves (a simplex relationship).

It is the intention of the following definitions and examples to make clear Jordan's six-level progression from cognitive thought through the affective domain, and finally arriving at the cognitive-action level of attitude-behaviors.

#### THE COGNITIVE DIMENSION OF ATTITUDE-BEHAVIOR

##### Level 1

Societal Stereotype--what other Whites believe about Whites as compared to what they believe about Negroes.\*

Eg.: Whites can be trusted with money

- (1) more than Negroes
- (2) about the same as Negroes
- (3) less than Negroes

---

\*The definitions and examples of the levels presented here assume that a White person is taking the scale and expressing his attitudes toward Negroes. The words White and Negro can be interchanged to make the scale appropriate for a Negro subject.

## Level 2

Societal Interactive Norm--other Whites generally believe the following...about interacting with Negroes.

Eg.: Whites believe they can trust Negroes with money

- (1) disagree
- (2) uncertain
- (3) agree

## THE AFFECTIVE DIMENSION OF ATTITUDE-BEHAVIOR

## Level 3

Personal Moral Evaluative--in respect to Negroes, do you yourself believe that it is usually right or usually wrong.

Eg.: To trust Negroes with money is

- (1) usually wrong
- (2) undecided
- (3) usually right

## THE AFFECTIVE AND CONATIVE DIMENSIONS OF ATTITUDE-BEHAVIOR\*

## Level 4

Personal Hypothetical Behavior--in respect to a Negro would you yourself

Eg.: I would trust Negroes with money

- (1) no
- (2) undecided
- (3) yes

---

\*The two levels encompassed under this category (Levels 4 and 5) include both affective and conative elements of attitude-behavior.

## Level 5

Personal Feelings--how do you actually feel toward  
Negroes.

Eg.: When Whites trust Negroes with  
money I feel

- (1) bad
- (2) indifferent
- (3) good

## THE CONATIVE DIMENSION OF ATTITUDE-BEHAVIOR

## Level 6

Actual Personal Action--experiences or contacts with  
Negroes.

Eg.: I have trusted Negroes with money

- (1) no experience
- (2) no
- (3) uncertain
- (4) yes

The Mapping Sentence

A mapping sentence as represented in Figure 1, is used to provide a semantic relational definitional system between the variables of the study. A scale developer can then proceed to determine which combinations are appropriate for the task which he wishes to accomplish with his attitude items. The task of the present scale is to measure the racial attitude of Blacks toward Whites and of Whites toward Blacks.

TABLE 3.--Jordan's Facets Used to Determine Joint<sup>a</sup> Struction of an Attitude Universe.

A	B	C	D	E
Referent	Referent Behavior	Actor	Actor's Intergroup Behavior	Domain of Actor's Behavior
a <sub>1</sub> others	b <sub>1</sub> belief	c <sub>1</sub> others	d <sub>1</sub> comparison	e <sub>1</sub> hypothetical
a <sub>2</sub> self (I)	b <sub>2</sub> experience (overt action)	c <sub>2</sub> self (mine/my)	d <sub>2</sub> interaction	e <sub>2</sub> operational

<sup>a</sup>Joint struction is operationally defined as the ordered sets of the five facets from low to high (subscripts 1's are low) across all five facets simultaneously.

TABLE 4.--Joint Level, Profile Composition, and Labels for Six Types of Attitude Struction<sup>a</sup>

Subscale Type-Level	Profile by Notational <sup>c</sup> System in Table 7	Profile by Definitional <sup>b</sup> System in Table 6	Attitude Level Descriptive Term
1	o b o c h	a <sub>1</sub> b <sub>1</sub> c <sub>1</sub> d <sub>1</sub> e <sub>1</sub>	Societal stereotype
2	o b o i h	a <sub>1</sub> b <sub>1</sub> c <sub>1</sub> d <sub>2</sub> e <sub>1</sub>	Societal norm
3	i b o i h	a <sub>2</sub> b <sub>1</sub> c <sub>1</sub> d <sub>2</sub> e <sub>1</sub>	Personal moral evaluation
4	i b m i h	a <sub>2</sub> b <sub>1</sub> c <sub>2</sub> d <sub>2</sub> e <sub>1</sub>	Personal hypothetical action
5	i e m i h	a <sub>2</sub> b <sub>2</sub> c <sub>2</sub> d <sub>2</sub> e <sub>1</sub>	Personal feeling
6	i e m i p	a <sub>2</sub> b <sub>2</sub> c <sub>2</sub> d <sub>2</sub> e <sub>2</sub>	Personal action

<sup>a</sup>Based on facets of Table 5.

<sup>b</sup>See Table 6 for definitional statements.

<sup>c</sup>See Table 7 for facets and subscript profiles.

TABLE 5.--Comparison of Guttman and Jordan Facet Designations

Designation	Facets <sup>a</sup> in Jordan Adaptation				
	A	B	C	D	E
Jordan	Referent	Referent behavior	Actor	Actor's intergroup behavior	Domain of actor's behavior
	a <sub>1</sub> others	b <sub>1</sub> belief	c <sub>1</sub> others	d <sub>1</sub> comparison	e <sub>1</sub> hypothetical
	a <sub>2</sub> self (I)	b <sub>2</sub> experience (overt behavior)	c <sub>2</sub> self (mine/my)	d <sub>2</sub> interaction	e <sub>2</sub> operational
Guttman	-----	Subject's behavior	Referent	Referent's intergroup behavior	-----
	-----	b <sub>1</sub> belief	c <sub>1</sub> subject's group	d <sub>1</sub> comparative	-----
	-----	b <sub>2</sub> overt action	c <sub>2</sub> subject himself	d <sub>2</sub> interactive	-----

<sup>a</sup>If the facets of Table i are expressed as follows the combinations of Table are semantically expressed in the definitional statements of Table :

Facet A: o or i

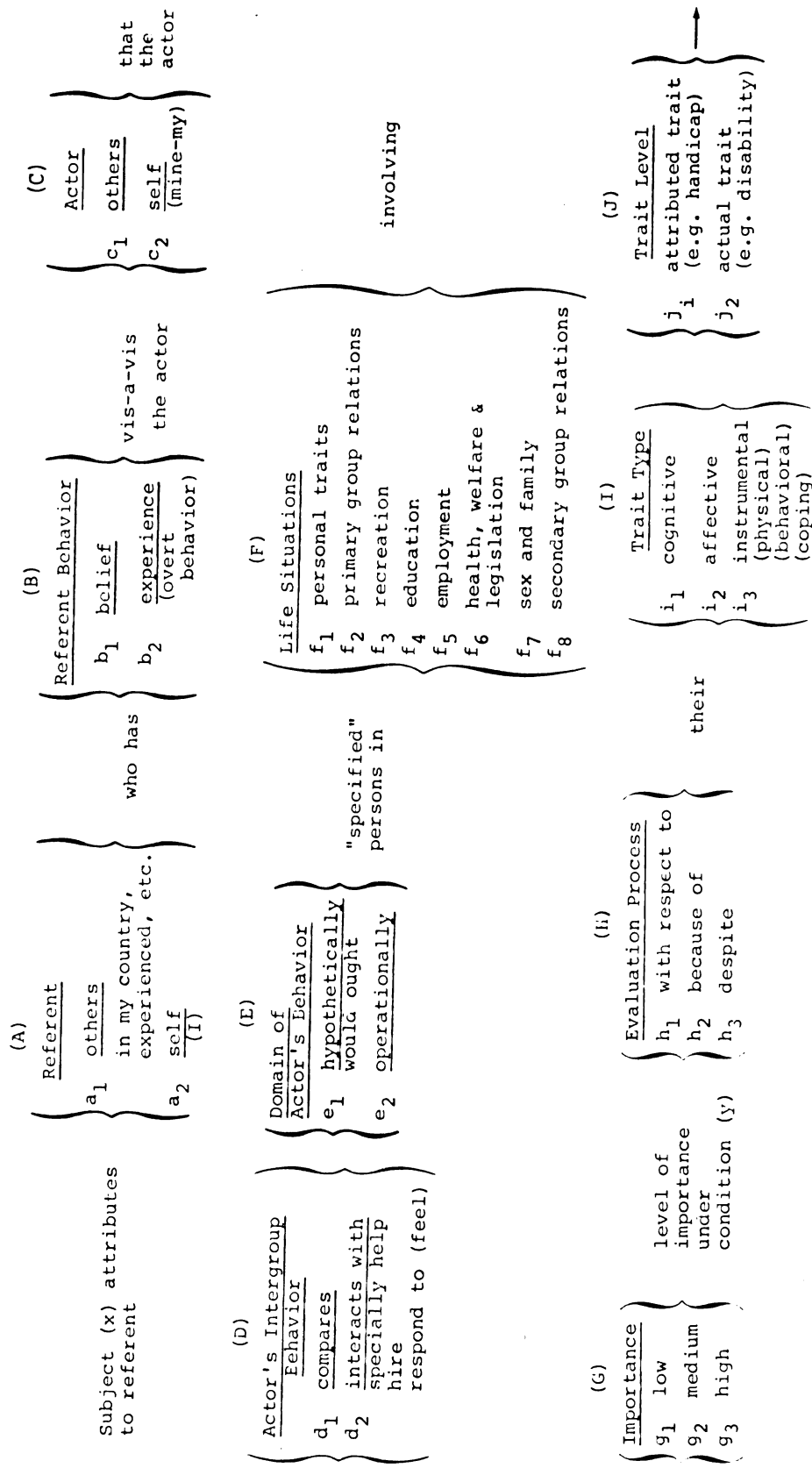
Facet B: b or e

Facet C: o or m

Facet D: c or i

Facet E: h or p

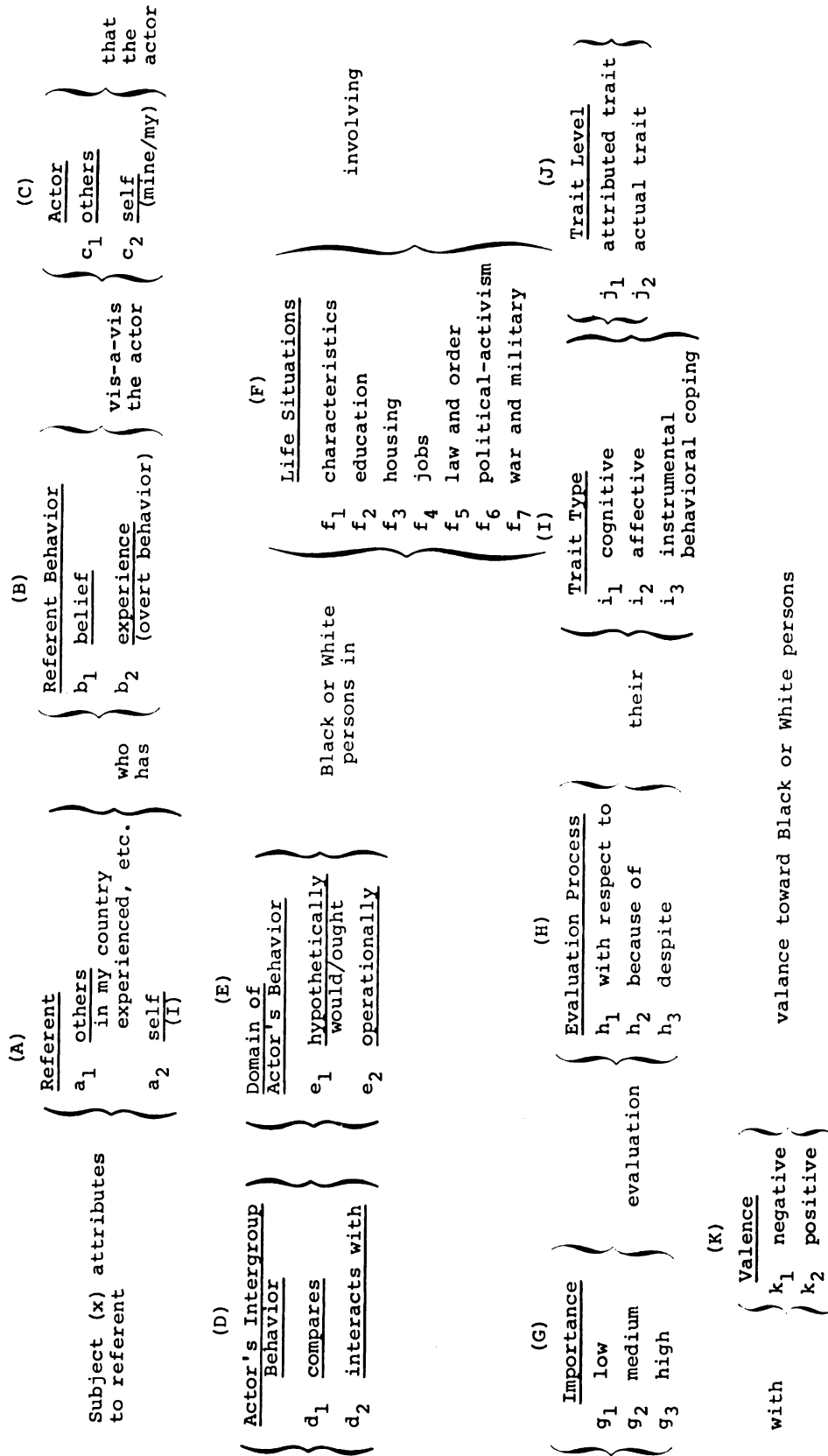
Figure 1. Specified Persons



John E. Jordan  
Michigan State University  
Louis Guttman  
Israel Institute for  
Applied Social Research  
August 10, 1966  
Revised March 9, 1972

a Facets A through E denote Joint Structuon or level.  
b Facets F through J denote attitude content or lateral Structuon.  
The ordering system has not yet been developed as fully for Lateral Structuon as it has for Joint Structuon.  
c Any person or social group such as aged, blind, alcoholic, drug user, Negro, national, or ethnic group may be substituted for "specified" persons.

Figure 2. Mapping Sentence<sup>a</sup> for the Facet Analysis of Joint<sup>b</sup> and Lateral<sup>c</sup> Structrion of Blacks' and Whites' Attitudes Toward Each Other



<sup>a</sup>Evolved by Hamersma and Jordan.

<sup>b</sup>Joint structrion involves facets "A" through "E."

<sup>c</sup>Lateral structrion involves facets "F" through "K."



TABLE 6.--Five-Facet Six-Level System of Attitude Verbalizations:<sup>a</sup> Levels, Facet Profiles, and Definitional Statements for Twelve Combinations

Level	Facet Profile	No. in Table 7	No. <sup>b</sup>	Definitional Statement <sup>c</sup>	Descriptive Name <sup>d</sup>
1	<u>o b o c h</u> <u>a1b1c1d1e1</u>	1	0	<u>Others believe others' comparisons hypothetically</u>	Societal stereotype (group assigned group status)
2	<u>i b o c h</u> <u>o b o i h</u> <u>a1b1c1d2e1</u> <u>o b m c h</u>	3 2 5	1	<u>I believe others' comparisons hypothetically</u> <u>Others believe others' interactions hypothetically</u> <u>Others believe my comparisons hypothetically</u>	Personally-assigned group status Societal norm Group-assigned personal status
3	<u>i b o i h</u> <u>a2b1c1d2e1</u> <u>i b m c h</u> <u>o b m i h</u> <u>o e o i h</u>	4 7 6 9	2	<u>I believe others interactions hypothetically</u> <u>I believe my comparisons hypothetically</u> <u>Others believe my interactions hypothetically</u> <u>Others experience others interactions hypothetically</u>	Personal moral evaluation (perceived values) Self-concept (personally assigned personal status) Proclaimed laws (group expectations) Group identity (actual group feelings)
4	<u>i b m i h</u> <u>a2b1c2d2e1</u> <u>o e o i p</u>	8 11	3	<u>I believe my interactions hypothetically</u> <u>Others experience others comparisons hypothetically</u> <u>I experience my interactions (feelings) hypothetically</u>	Personal hypothetical action Actual group action Personal feeling
5	<u>i e m i h</u> <u>a2b2c2d2e1</u>	10	4	<u>I experience my interactions (behavior) operationally</u>	Personal action
6	<u>i e m i p</u> <u>a2b2c2d2e2</u>	12	5		

<sup>a</sup>Combinations used in the ABS.

<sup>b</sup>Cf. Tables 5 and 7.

<sup>c</sup>No.- number of strong elements in Level.

<sup>d</sup>Words in parentheses are part of redundant but consistent statements.

<sup>e</sup>Alternate names in parentheses indicate relationships of various level members.

TABLE 7.--Combinations of Five Two-element Facets<sup>a</sup> and Basis of Elimination

Combinations			Facets and Subscripts					Basis of Elimination
No. <sup>b</sup>	In Table 3	In Table 4	A	B	C	D	E	
1	1	Level 1	o	b	o	c	h	
2	2	Level 2	o	b	o	i	h	
3	3	--	i	b	o	c	h	
4	4	Level 3	i	b	o	i	h	
5	5	--	o	b	m	c	h	
6	6	--	o	b	m	i	h	
7	7	--	i	b	m	c	h	
8	8	Level 4	i	b	m	i	h	
9	-	--	o	e	o	c	h	2
10	9	--	o	e	o	i	h	
11	--	--	i	e	o	c	h	1 2
12	--	--	i	e	o	i	h	1
13	--	--	o	e	m	c	h	1 2
14	--	--	o	e	m	i	h	1
15	--	--	i	e	m	c	h	2
16	10	Level 5	i	e	m	i	h	
17	--	--	o	b	o	c	p	3 4
18	--	--	o	b	o	i	p	4
19	--	--	i	b	o	c	p	3 4
20	--	--	i	b	o	i	p	4
21	--	--	o	b	m	c	p	3 4
22	--	--	o	b	m	i	p	4
23	--	--	i	b	m	c	p	3 4
24	--	--	i	b	m	i	p	4
25	--	--	o	e	o	c	p	2 3
26	11	--	o	e	o	i	p	
27	--	--	i	e	o	c	p	1 2 3
28	--	--	i	e	o	i	p	1
29	--	--	o	e	m	c	p	1 2 3
30	--	--	o	e	m	i	p	1
31	--	--	i	e	m	c	p	2 3
32	12	Level 6	i	e	m	i	p	

<sup>a</sup>See Table 5 for facets.<sup>b</sup>Numbering arbitrary, for identification only.<sup>c</sup>Logical semantic analysis as follows:

Basis 1: an "e" in facet B must be preceded and followed by equivalent elements, both "o"; or "i" in facet A or "m" in facet C.

Basis 2: a "c" in facet D cannot be preceded by an "e" in facet B.

Basis 3: a "c" in facet D cannot be followed by a "p" in facet E.

Basis 4: a "p" in facet E cannot be preceded by a "b" in facet B.

<sup>d</sup>See text for rationale.

TABLE 8.--Six Levels and Life Situation

HOYT RELIABILITY		
Scale	Reliability	Standard Error
Level 1	.58	1.64
Level 2	.76	1.91
Level 3	.82	1.81
Level 4	.82	1.63
Level 5	.74	1.40
Level 6	.92	1.68
Life Situations	.42	2.13

### Design of the Study

In this section, the population is described and the research procedures used are presented. Also, the hypotheses, the instrumentation, and analysis method for each hypothesis are presented.

On November 14, 1971, the Director of the Lansing Public School Education program was contacted in regard to using the evening credit program as a sample for this study. An affirmative reply was given at that time.

On February 10, 1972, the administration of the questionnaire was explained to all the teachers of the Lansing Evening Credit Course.

Every class listed as an evening credit program received copies of this questionnaire and all students who attended classes during this period of February 14, 1972 to March 2, 1972 participated in the program.

One hundred and seventy nine White adults representing over 90% of that population in the Lansing Adult Evening Program received copies of the Attitude Behavior Scale: White/Negro - Education. Forty Black adults representing over 95% of that population received copies of the Attitude Behavior Scale: Black/White - Education.

### Population

The population consisted of adults in the evening credit course toward high school completion. The program consisted of approximately 205 White students and about 44 Black students. Of this total of 249, 219 students responded; 179 were White, and 40 were Black. The other 30 students who did not respond were non-readers, recent immigrants to the country, and those who refused.

### MAJOR RESEARCH HYPOTHESES

The major emphasis of this study was methodological, and most of the analyses dealt with measurement properties and the use of facet design and analysis.

The hypothesized relationship between the dependent or criterion variables (attitudes toward the opposite race with regard to education) and certain types of predictor variables; e.g., religion, efficacy, change orientation, and contact were examined. In this study independent variables are looked at as correlates or determinants of attitudes.

### Attitudes and Values

H-1.--There is a positive relationship between high efficacy scores and positive attitudes toward the opposite race.

Rationale.--Those who feel in control of their natural and social environment will have a more positive attitude toward groups regarded as different.

Instrumentation.--The Life Situation Scale (Wolf, 1967) measures efficacy. Scores are from nine items, with a range of scores 9-36 and items from 71 to 79. Attitudes are measured by the six subscales of the ABS:BW/WN-E.

Analysis.--Multivariate Multiple Regression.

### Attitudes and Change Proneness

H-2.--There is a positive relationship between a high score on change proneness and a high attitude score.

Rationale.--Allport (1954) indicates a relationship between rigidity and prejudice.

Instrumentation.--Change proneness is measured by Questions 53, 54, 55, and 56. Scores range from 1-4 for each question. Attitudes are measured as in H-1.

Analysis.--Multivariate Multiple Regression.

### Attitudes and Contact

H-3.--Favorable attitudes toward members of the opposite race are related to a) kind of contact, b) amount of contact, c) ease of avoidance of contact, d) gain from contact, and e) enjoyment of contact.

Rationale.--Recent research by Brophy (1964) found that contact increases positive attitudes toward the opposite race. Further research indicates that various aspects of contact will result in favorable attitudes toward members of the opposite race.

Instrumentation.--Contact is measured by Questions 59, 60, 61, 62, and 65. Range of scores 1-5, 1-5, 1-5, 1-4, and 1-5. Attitudes measured as in H-1.

Analysis.--Multivariate Multiple Regression.

### Attitudes and Political Affiliation

H-4.--There is a significant difference among attitude scores of political groups.

Rationale.--The Democratic party has been viewed

as being the political party with liberal viewpoints that coincide with Black people, while the Republican party has been looked upon as being quite conservative to the primary goals of Black people.

Instrumentation.--Political affiliation is measured by Question 68. Range of scores 1-3. Attitudes measured as in H-1.

Analysis.--Multivariate Analysis of Variance.

#### Attitudes and Sex

H-5.--There is a significant difference between the attitude scores of males and females.

Rationale.--In the research of Montague (1970) it was found that women were significantly more favorable to members of the opposite race. This was attributed to the different life styles of women as compared to men.

Instrumentation.--Sex is measured by Question 49. Range of scores 1-2. Attitudes measured as in H-1.

Analysis.--Multivariate Analysis of Variance.

#### Attitudes and Religion

H-6.--There is a significant difference among attitude scores of religious groups.

Rationale.--Merton (1940) found that Catholics



tended to be more prejudiced than Protestants, while Jews and groups with no religious ties had the least amount of prejudice.

Instrumentation.--Religion is measured by Question 68. Range of scores 1-5. Attitudes measured as in H-1.

Analysis.--MANOVA.

### Attitudes and Race

H-7.--There is a significant difference between attitude scores of racial groups.

Rationale.--Past research has indicated that Blacks are more positive toward Whites than Whites toward Blacks (Brink and Harris, 1964, 1967). Due to the recent identity fervor that has engulfed some Black people, recent research indicates that Blacks are not as racially positive toward Whites as before.

Instrumentation.--Race is measured by Question 70. Range of scores 1-5. Attitudes measured as in H-1.

Analysis.--MANOVA.

### Simplex Approximation

H-8.--The ABS:BW/WN-E will form a Guttman

simplex for each of the racial groups.

Rationale.--Guttman contiguity hypothesis states that levels closer together semantically will be closer statistically.

Instrumentation.--Correlations between the scores of the six levels of the ABS:BW/WN-E.

Analysis.--The Kaiser Test ( $Q^2$ ) was used.

### Analysis

The Control Data Corporation Computers CDC 3600 and 6500 at Michigan State University were used to analyze the data.

### Multivariate Analysis of Variance

In the analysis of several hypotheses such as religion, sex, politics, and race, Multivariate Analysis of Variance was used.

A complete description of the MANOVA program, as prepared by Finn (1967), is in Appendix A.

### Correlational Statistics

In this study, to acquire additional information, Pearson Product Moment correlations were used to test the relationships between the variables of efficacy, change

proneness, contact, and the attitude levels of the  
ABS:BW/WN-E.

### Multivariate Multiple Regression

In this study MMR was used to test the correlations between the combined variables of efficacy, change proneness, contact, and the attitude levels of the  
ABS:BW/WN-E.

A description of Multivariate Multiple Regression as prepared by Finn (1967) is in Appendix A.

### Simplex Approximation Test

Kaiser (1962) formulated a procedure for scaling the variables of a Guttman simplex. His procedure orders the variables and suggests a measure of the goodness of fit of the scale to the obtained data.

Kaiser developed an approach that may be observed as performing two functions: (a) "sorting" of virtually all adjacent pairs of data entries so as to generate the best empirically possible simplex approximation; and (b) an assignment of a descriptive statistic, " $Q^2$ ," to specified matrices. The index  $Q^2$  is a descriptive one, with a range of 0.00 to 1.00.

A computer program has been developed which (a) re-orders the level of a semantic path, by Kaiser's procedures, so as to generate the best empirically possible

simplex approximation, and (b) calculates  $Q^2$  for the hypothesized (theoretical) ordering and for the empirically obtained ordering of members in a semantic path.

### Summary

An analysis of the six level Jordan-Hamersma ABS:BW/WN was presented. The Hoyt procedure for determining the reliability of the six levels and life situation scales were also included. Guttman's four level theory which Jordan expanded to six levels was discussed. The final section of this chapter dealt with the major hypotheses and the analyses procedures.

## CHAPTER IV

### ANALYSIS OF THE STUDY

A statistical analysis of the data, to accept or reject the hypotheses in Chapter III, is discussed in this chapter. Hypotheses of attitudes relating to religion, politics, race, and sex were analyzed using Multivariate Analysis of Variance. Hypotheses of attitudes relating to change proneness, efficacy, and contact were analyzed using Multivariate Multiple Regression. Other additional information in regard to the hypotheses of change proneness, efficacy, and contact were obtained by Pearson Moment Product correlations. Kaiser's  $Q^2$  technique was used to analyze the hypothesis simplex.

According to Jordan (1969), Hamersma (1969), Erb (1969), and Morin (1970) the .05 level of significance is acceptable for most studies using facet analysis.

There is a significant relation based on Multivariate Multiple Regression Analysis which shows in Table 9 an overall chi square test of no association between dependent and independent variables. ( $\chi^2 = 144.6228$  d.f. = 60; P less than .0001).

TABLE 9.--Statistics for Regression Analysis with 10  
Covariates<sup>a</sup>

VARIABLE	SQUARE MULT R	MULT R	F	P LESS THAN
1. Stereo	.05	.23	1.12	.35
2. Normat	.04	.21	0.97	.47
3. Moral	.12	.35	2.81	.01
4. Hypoth	.25	.50	6.90	.01
5. Feeling	.24	.49	6.58	.01
6. Action	.16	.40	4.05	.01

Chi-Square for Test of Hypothesis of No  
Association Between Dependent and Independent  
Variables = 144.6228

D.F. = 60

P less than 0.0001

- <sup>a</sup>1. Kind  
2. Amount  
3. Avoidance  
4. Gain  
5. Enjoyment  
6. Set in Ways  
7. Child Rearing  
8. Birth Control  
9. Automation  
10. Efficacy

Knowing there are significant overall relationships, further examination of the groupings of independent variables is of particular interest.

1. The first hypothesis in the group analyzed was the life situation scale which, according to Table 10, was not significant. A much more detailed discussion will be reported in the following paragraphs.
2. The second hypothesis encountered in the multivariate multiple step-regression was the cluster of four change variables. Table 11 indicates that the four change variables were significantly related. ( $\chi^2 = 43.7$  d.f. = 24; P less than .0083).

Examining the univariate significance levels, which individually predicts each of the six levels from the four change variables, indicates that change variables are not significantly related to Levels 1, 2, and 6. Most of the overall relationship comes from the four change variables relationship with Levels 4 and 5.

Due to dependency in the data, Level 3 could have possibly been significant due to chance alone. Since the levels are dependent on each other, the univariate tests

TABLE 10.--Multivariate Multiple Regression: Efficacy

VARIABLES	UNIVARIATE F	P LESS THAN
1. Stereo	0.25	.61
2. Normat	1.06	.30
3. Moral	0.01	.99
4. Hypoth	0.03	.85
5. Feeling	0.25	.62
6. Action	0.02	.89

Chi-Square = 1,7250

D.F. = 6

P Less Than  
0.9432

D.F. = 1 and 208



TABLE 11.--Multivariate Multiple Regression: Change  
Proneness

VARIABLES	UNIVARIATE F	P LESS THAN
1. Stereo	0.80	.53
2. Normat	1.57	.18
3. Moral	2.62	.04
4. Hypoth	4.22	.01
5. Feeling	5.73	.01
6. Action	1.17	.32

Chi-Square = 43,7145      D.F. = 24      P Less Than  
0.0083

D.F. = 4 and 209

are likely to indicate significance when none exists. One way to help control for possible misleading results would be to divide the overall alpha level by the number of separate tests. In this case, alpha is equal to .05 and the number of tests are six. Then .0083 would be used as the adjusted alpha level.

Additional information concerning the relationship between the two sets of variables can be obtained from the Table 12. These data, due to numerous dependency problems, must be interpreted with caution. Many of the significant correlations which appear in this table are significant as a result of chance. The problem of interpretation is that there is no way to actually determine which of the significant results are of chance occurrences.

Due to the nature of the multivariate multiple step-wise regression analysis employed, a direct test of the contact variables' significance cannot be determined. The problem is created by the nature of the matrices employed in the analyses. The examination of the step-wise regression must begin with the last set; then one continues in such a manner until a set of variables are found to be significant. Any further analyses of any remaining sets of variables is altered in an uninterpretable manner. When significance is found in other sets of variables, only

indications of significance can be obtained. Table 13 does show a trend toward a significant relation between the contact variables and the six levels. The five contact variables were closely related to Levels 3, 4, 5, and 6. Additional information concerning relationship between the two sets of variables can be obtained from Table 12. Due to the dependency problems that exist between levels, there is no way to actually determine which of the significant results are by chance alone.

Table 19 is a summary of descriptive statistics for all the variables in the study.

#### Attitudes and Efficacy

H-1.--There is a positive relationship between a high efficacy score and positive attitudes toward members of the opposite race.

The data from the Multivariate Multiple Regression indicated no relationship between high efficacy scores and positive attitudes toward members of the opposite race.

#### Attitudes and Change

H-2.--There is a positive relationship between a high score on change proneness and a high attitude score.

TABLE 12.--Correlations and Significance Levels for Blacks and Whites<sup>a</sup> Between Selected Predictor Variables and Levels of ABS:BW/WN

Predictor Variable	Group	Attitude Levels						
		1	2	3	4	5	6	
Efficacy	W	r sig	0.04 0.53	-0.05 0.48	-0.02 0.76	0.03 0.61	0.08 0.24	0.07 0.37
	B	r sig	0.13 0.37	0.16 0.31	0.33 0.03	0.37 0.01	0.07 0.65	0.11 0.45
Set in Ways	W	r sig	0.06 0.37	0.01 0.89	0.08 0.25	0.27 0.01	0.23 0.01	0.22 0.01
	B	r sig	0.25 0.10	0.24 0.12	0.17 0.26	0.38 0.01	0.40 0.01	0.12 0.41
Child Rearing	W	r sig	0.08 0.25	0.01 0.99	0.04 0.57	0.18 0.01	0.26 0.01	0.15 0.04
	B	r sig	0.14 0.35	0.14 0.37	0.09 0.56	0.32 0.03	0.28 0.07	0.13 0.39
Birth Control	W	r sig	0.06 0.40	0.05 0.49	0.10 0.17	0.14 0.06	0.14 0.04	0.09 0.24
	B	r sig	0.03 0.82	-0.08 0.59	-0.20 0.20	-0.01 0.94	-2.21 0.17	-0.25 0.10

<sup>a</sup> Whites = 179; Blacks = 40

TABLE 12--(Continued)

Predictor Variable	Group	Attitude Levels						
Automa- tion	W	r	0.13	0.16	0.19	0.07	0.53	0.10
		sig	0.75	0.02	0.01	0.32	0.47	0.17
	B	r	-0.13	0.17	0.18	-0.06	0.23	-0.20
		sig	0.40	0.27	0.24	0.68	0.12	0.19
Contact: Kind	W	r	-0.08	-0.06	-0.05	0.12	-0.01	0.12
		sig	0.27	0.39	0.43	0.08	0.81	0.12
	B	r	0.11	-0.32	-0.15	-0.10	0.18	-0.30
		sig	0.45	0.03	0.33	0.50	0.23	0.04
Contact: Amount	W	r	0.02	-0.05	-0.02	0.13	0.06	0.14
		sig	0.70	0.44	0.77	0.06	0.39	0.07
	B	r	0.15	0.03	0.07	0.14	-0.07	-0.10
		sig	0.32	0.82	0.65	0.34	0.62	0.49
Contact: Avoid- ance	W	r	0.26	-0.06	0.05	0.01	0.04	0.01
		sig	0.72	0.42	0.46	0.86	0.59	0.90
	B	r	-0.04	0.04	-0.22	-0.26	0.09	-0.03
		sig	0.79	0.76	0.16	0.08	0.54	0.82
Contact: Gain	W	r	0.08	0.02	-0.45	-0.11	-0.03	-0.06
		sig	0.24	0.75	0.54	0.11	0.65	0.44
	B	r	0.17	-0.15	-0.01	0.21	-0.03	-0.15
		sig	0.91	0.34	0.96	0.17	0.84	0.34
Contact: Enjoy- ment	W	r	0.07	0.01	0.23	0.44	0.36	0.47
		sig	0.34	0.89	0.01	0.01	0.01	0.01
	B	r	0.36	-0.07	0.01	0.24	0.31	-0.01
		sig	0.01	0.63	0.91	0.11	0.04	0.99

The data (Table 11) indicated a highly significant relationship (.0083 level) between change proneness and a high attitude score at Levels 3, 4, and 5.

Additional information based on Table 12 indicates that "set in ways" and "child rearing" for both groups show the most significant predictor relationship between scores on change proneness and attitudes. Whites indicated significantly positive attitudes for "set in ways" at the hypothetical level (sig. 0.01), and the feeling level (sig. 0.01). In "child rearing," positive attitudes for Whites were significantly indicated at hypothetical level (sig. 0.01), and the feeling level (sig. 0.01).

Blacks indicated significantly positive attitudes for "set in ways" also at the hypothetical level (sig. 0.01), and feeling level (sig. 0.01). In "child rearing" positive attitudes for Blacks were significant only at the hypothetical level (sig. 0.03). Automation was the next best indicator of positive attitudes at Level 3. Birth control was not related to any level of the ABS:BW/WN-E for Blacks or Whites.

#### Attitudes and Contact

H-3.--Favorable attitudes toward members of

the opposite race are related to (a) kind of contact, (b) amount of contact, (c) ease of avoidance of contact, (d) gain from contact, and (e) enjoyment of contact.

The data (Table 13) shows a trend toward significant relationship between contact variables and Levels 3, 4, 5, and 6.

Additional information based on Table 12 indicates that enjoyment of contact was the most significant predictor of increasing positive attitudes in that those Whites who stated they enjoyed their contact with Blacks indicated significantly positive attitudes at the moral level (sig. 0.01), hypothetical level (sig. 0.01), feeling level (sig. 0.01), and the action level (sig. 0.01).

The data (Table 12) for Blacks indicate that kind of contact at normative level (sig. 0.03) and action level (sig. 0.04) along with enjoyment of contact at the stereotypic level (sig. 0.01), and feeling level (sig. 0.04) are the next best predictors.

#### Attitudes and Politics

H-4.--There is a significant difference among political affiliation groups' attitude scores toward the opposite race.

TABLE 13.--Multivariate Multiple Regression: Contact Variables

VARIABLES	UNIVARIATE F	P LESS THAN
1. Stereo	1.56	.17
2. Normat	0.47	.79
3. Moral	3.45	.01
4. Hypoth	9.89	.01
5. Feeling	7.87	.01
6. Action	7.18	.01

Chi-Square = 99.9022      D.F. = 30      \*P Less Than 0.0001

D.F. = 5 and 213

\*not an exact probability level



The data (Table 14) from the Multivariate Analysis of Variance procedure indicated no differences in attitudes between political groups. Consequently, the hypothesis was not confirmed.

#### Attitudes and Sex

H-5.--There is a significant difference in racial attitudes between males and females.

The data (Table 15) indicate a significant difference (0.0184) between sex and attitude. The .05 level of significance was the criterion. Significant differences were indicated at Levels 4 and 5 (hypothetical and feeling). Examination of the cell means indicates that White females at Level 4 were the most positive toward the members of the opposite race, followed closely by Black males. Black females and White males were the least positive toward members of the opposite race at Level 4 (hypothetical).

Examination of the cell means at Level 5 (feeling) indicates that White females were more positive toward members of the opposite race, closely followed by White males. Black males and females were the least positive toward members of the opposite race at Level 5 (feeling).

TABLE 14.--Multivariate Analysis of Variance (MANOVA)  
Results of Politics

Variables	Cell Means					
	1 STEREO	2 NORMAT	3 MORAL	4 HYPOTH	5 FEELING	6 ACTION
1. Republican	14.24	17.14	18.78	20.41	20.41	15.29
2. Democrats	14.89	16.36	18.13	19.55	20.14	16.59
3. Amer Ind	13.85	15.23	15.08	17.77	19.69	15.77
4. Others	14.71	16.24	17.88	19.29	19.82	15.88

F-Ratio for Multivariate Test of Equality of Mean Vectors  
= 1.0343

D.F. = 18 and 594.4550      P Less Than 0.4183

VARIABLE	BETWEEN MEAN SQ	UNIVARIATE F	P LESS THAN
1. Stereo	8.22	1.12	.34
2. Normat	14.88	0.85	.47
3. Moral	47.31	2.35	.07
4. Hypoth	25.82	1.52	.21
5. Feeling	2.61	0.30	.83
6. Action	21.97	0.57	.64

Degrees of Freedom for Hypothesis = 3

Degrees of Freedom for Errors = 215

TABLE 15.--Multivariate Analysis of Variance (MANOVA)  
Results on Sex

Variable	Cell Means					
	1 STEREO	2 NORMAT	3 MORAL	4 HYPOTH	5 FEELING	6 ACTION
1. White Female	14.23	16.22	18.70	20.38	20.94	16.72
2. White Male	14.13	16.13	17.61	18.34	19.32	14.63
3. Black Female	16.46	17.50	15.88	19.15	19.19	16.62
4. Black Male	17.43	18.00	18.93	19.79	18.93	17.93

F-Ratio for Multivariate Test of Equality  
of Mean Vectors = 2.6159

D.F. = 6 and 198.000      P Less Than 0.0184

VARIABLE	BETWEEN MEAN SQ	UNIVARIATE F	P LESS THAN
1. Stereo	0.50	0.08	.78
2. Normat	0.02	0.01	.97
3. Moral	5.52	0.29	.59
4. Hypoth	119.01	7.69	.01
5. Feeling	93.47	12.32	.01
6. Action	106.14	2.77	.07

Degrees of Freedom for Hypothesis = 1

Degrees of Freedom for Error = 203

Further examination of cell means at Level 6 (action) which was not highly significant, (.07), indicates that Black men and White women were the most positive toward members of the opposite race. Black females and White males were the least positive toward members of the opposite race at Level 6 (action).

### Attitudes and Religion

H-6.--There is a significant difference among the attitude scores of religious groups.

The data (Table 16) from the Multivariate Analysis of Variance indicated no difference in attitudes among religious groups. The hypothesis was not confirmed.

### Attitudes and Race

H-7.--There is a significant difference between attitude scores of racial groups.

The data (Table 17) indicate a significant difference (.0001 level) between race and attitude. The .05 level of significance was the criterion. Examination of Levels 1, 2, and 5 (stereotypic, normative, and action) indicates significance at these levels only. Further examination of the cell means that are significant indi-

TABLE 16.--Multivariate Analysis of Variance (MANOVA)  
Results of Religion

Variable	Cell Means					
	1 STEREO	2 NORMAT	3 MORAL	4 HYPOTH	5 FEELING	6 ACTION
1. Catholic	14.77	15.71	17.77	20.04	20.60	16.17
2. Protestant	14.65	16.48	18.29	19.78	20.11	16.11
3. Other	14.72	17.81	18.13	19.13	19.59	17.09

F-Ratio for Multivariate Test of Equality  
of Mean Vectors = 1.2883

D.F. = 12 and 416.0000      P Less Than 0.2224

VARIABLE	BETWEEN MEAN SQ	UNIVARIATE	P LESS THAN
1. Stereo	5.22	0.83	.44
2. Normat	29.90	1.77	.17
3. Moral	14.05	0.69	.50
4. Hypoth	29.59	1.73	.18
5. Feeling	8.90	1.05	.35
6. Action	4.35	0.11	.89

Degrees of Freedom for Hypothesis = 2

Degrees of Freedom for Error = 213

TABLE 17.--Multivariate Analysis of Variance (MANOVA)  
Results of Race

Variable	Cell Means					
	1 STEREO	2 NORMAT	3 MORAL	4 HYPOTH	5 FEELING	6 ACTION
1. White	14.20	16.19	18.32	19.67	20.38	15.99
2. Black	16.80	17.68	16.95	19.38	19.10	17.05

F-Ratio for Multivariate Test of  
Equality of Mean Vector = 9.658

D.F. = 6 and 198.0000      P Less Than 0.0001

VARIABLE	BETWEEN MEAN SQ	UNIVARIATE F	P LESS THAN
1. Stereo	221.71	34.66	.01
2. Normat	72.10	4.28	.04
3. Moral	61.62	3.28	.07
4. Hypoth	2.75	0.18	.67
5. Feeling	53.14	7.01	.01
6. Action	38.55	1.01	.32

Degrees of Freedom for Hypothesis = 1

Degrees of Freedom for Error = 203

cates that Blacks were more positive toward Whites at Levels 1 and 2 (stereotypic and normative). The data also indicate that Whites were more positive toward Blacks at Level 5 (feeling).

#### Simplex Approximation

H-8.--The ABS:BW/WN-E will form a Guttman Simplex for each of the racial groups.

The results from the two sample groups formed an approximate Guttman Simplex (Table 18). Examination of matrices 18.1 through 18.4 reveals that correlations between the six levels decrease in relation to the number of steps that two levels are removed from each other.

The  $Q^2$  value for the Black group's original matrix (Matrix 18.3) was .83, compared with a best  $Q^2$  value (Matrix 18.4) of .96. The difference of .13 indicates a better simplex order than the hypothesized one which was obtained by the reordering procedure of Kaiser. There were six reversals in the original matrix and four in the best ordered one.

The  $Q^2$  value for the White group's original matrix (Matrix 18.1) was .86 as compared with a best  $Q^2$  value (Matrix 18.2) of .94. The difference of .08 indicates

TABLE 18.--Analysis of Simplex Correlations of the ABS:BW/WN for the Research Groups

WHITES						BLACKS					
1	2	3	4	5	6	1	2	3	4	5	6
1	--				Original Q <sup>2</sup> =.86	1	--			Original Q <sup>2</sup> =.83	
2	.40	--			Matrix 18.1	2	.09	--		Matrix 18.3	
3	.34	.52	--			3	.02	.29	--		
4	.30	.27	.44	--		4	.04	.33	.38	--	
5	.21	.19	.34	.60	--	5	.00	.16	.30	.50	--
6	.34	.42	.45	.63	.41	6	.16	.37	.40	.42	.13
					--						--
1	--				Best Q <sup>2</sup> =.94	1	--			Best Q <sup>2</sup> =.96	
2	.40	--			Matrix 18.2	2	.16	--		Matrix 18.4	
3	.34	.52	--			3	.09	.37	--		
4	.34	.42	.45	--		4	.04	.42	.33	--	
5	.30	.27	.44	.63	--	5	.02	.40	.29	.38	--
6	.21	.19	.34	.41	.60	6	.00	.13	.16	.50	.30
					--						--



TABLE 19.--Sample Sizes,<sup>a</sup> Means, and Standard Deviations  
For Blacks and Whites on the ABS:BW/WN

Variable			Range of Means	Whites		Blacks	
				Mean	S.D.	Mean	S.D.
Attitude Content	1.	Stereotype	8-24	14.20	2.59	16.80	2.19
	2.	Normative	8-24	16.19	4.32	17.68	3.17
	3.	Moral Eval.	8-24	18.32	4.70	16.95	6.56
	4.	Hypothetical	8-24	19.67	4.16	19.38	4.11
	5.	Feeling	8-24	20.38	2.90	19.10	2.87
	6.	Action	8-24	17.35	4.82	17.08	4.12
Value	7.	Efficacy	9-36	24.72	2.86	23.75	3.28
Contact	8.	Kind	1-5	2.15	0.93	2.75	1.19
	9.	Amount	1-5	4.02	1.55	4.20	1.47
	10.	Avoidance	1-5	4.05	1.20	3.75	1.13
	11.	Gain	1-4	1.36	0.80	1.95	1.11
	12.	Enjoyment	1-5	3.89	1.28	3.73	1.01
Change Prone- ness	13.	Set in Ways	1-4	2.49	0.83	2.58	0.98
	14.	Child Rear	1-4	2.97	0.82	2.95	0.93
	15.	Birth Con- trol	1-4	3.45	0.71	3.10	0.93
	16.	Automation	1-4	2.97	0.95	2.93	1.01
Demo- graphic	17.	Race	1-2	1.00	0.00	2.00	0.00
	18.	Sex	1-2	1.35	0.48	1.35	0.48
	19.	Religion	1-3	2.95	0.93	2.95	0.78
	20.	Politics	1-3	1.53	1.21	2.73	1.55

<sup>a</sup> Whites 179, Blacks 40

a better simplex order than the hypothesized one which was obtained by the reordering procedure of Kaiser. There were six reversals in the original matrix and two in the best ordered one.

### Summary

In this chapter a statistical analysis of the data to confirm or disconfirm the major hypotheses was presented. Hypotheses 2, 3, 5, 7, and 8 were confirmed. Hypotheses 1, 4, and 6 were not confirmed.

## CHAPTER V

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The primary purpose of this chapter was to a) review the research, the instrumentation and design, and b) discuss the results of the study as they relate to each of the hypotheses. Recommendations for future research and implications of the study are also briefly summarized in this chapter.

#### Summary of the Study

##### Purpose

The major purpose of this study was to provide information about the attitudes of Blacks and Whites toward each other and to investigate the hypothesized relationships between these attitudes and certain types of independent-predictor variables. A comparison of the attitudes of Black adults with those of White adults was another purpose of the study.

### Instrumentation

A research instrument based on facet analysis was developed by Jordan and Hamersma (1969) called the Attitude Behavior Scale--Black/White(ABS-BW). Construction of the items followed a systematic a priori method rather than by the method of intuition or by the use of judges. Guttman's (1959) facet theory specifies that the attitude universe represented by the item content can be substructured into behavioral profiles which are systematically related according to the number of identical conceptual or semantic elements they hold in common. This substructuring of an attitude-behavior enables the prediction of relationships between various profiles of the universe.

Guttman defined attitude as "a delimited totality of behavior with respect to something." Guttman attitude levels were: (a) Stereotype, (b) Norm, (c) Hypothetical Interaction, and (d) Personal Interaction.

Jordan expanded Guttman's 4 levels to form a 6-level paradigm of attitude structure. Jordan's 6 levels were (a) Societal Stereotype, (b) Societal Interactive Norm, (c) Personal Moral Evaluation, (d) Personal Hypothetical Behavior, (e) Personal Feelings, and (f) Personal Action.

The concepts of levels of attitude strength is a significant development in attitude research, since it enables the researcher to investigate the multidimensionality of an attitude, which represents the levels of an attitude and reflects at which levels attitudes may change. This instrument was used to analyze the attitudes of Black and White adults.

#### Design and Analysis

The ABS:BW/WN-E was administered to all Black and White students who attended classes between the dates of February 14, 1972 to March 2, 1972. There were 179 White students and 40 Black students who participated. Those few students who did not respond to the scales were non-readers, adults of another nationality or racial origin, and those who refused.

The determinates of attitudes were represented by 14 independent variables (see Table 20 in Appendix B) which were intercorrelated with content scores of the criterion (ABS:BW/WN-E) across each level. This facilitated testing of seven hypotheses using Multivariate Multiple Regression, Multivariate Analysis of Variance, and Pearson Product Moment correlations. A Kaiser simplex approximation

for Hypothesis 8 was used which produced a descriptive statistic ( $Q^2$ ) for obtained attitude level matrices and matrices reordered into a "best" simplex order.

### Discussion

#### Attitudes and Efficacy

H-1.--There is a positive relationship between a high efficacy score and positive attitudes toward members of the opposite race.

The results from the analysis did not support this hypothesis. One explanation for the failure of the research data to support this hypothesis may be the homogeneity of the subjects in this study on such factors as age, education, and social-economic group. Many are young people who have gone back to school to acquire a high school diploma. Their life situation has not stabilized itself economically and socially in relationship to the environment in which they live. Also, the low reliability of the efficacy scale is a factor to be considered.

#### Attitudes and Change

H-2.--There is a positive relationship between a high score on change proneness and a high attitude score.

The hypothesis relating to change proneness and attitude score was confirmed.

"Set in ways" and "child rearing"--and possibly "automation"--were the most significant predictors of positive attitudes toward members of the opposite race. This tends to support the theory that those who are open to new experiences will tend to have a more positive attitude toward a variety of different events in their environment. If we assume that "child rearing" and "set in ways" can be related to racial feeling, then the assumption can be made that they are also predictors of the positive attitudes that one racial group in this study might tend to have for another racial group.

In "set in ways" both groups indicated significantly positive attitudes at the hypothetical and feeling level. In "child rearing" Whites indicated significantly positive attitudes also at the hypothetical and feeling level, while Blacks indicated significance only at the hypothetical level. Responses to birth control were not related to any level of the ABS:BW/WN-E for Blacks or Whites.

#### Attitudes and Contact

H-3.--Favorable attitudes toward members of the opposite race are related to (a) kind of contact, (b)

amount of contact, (c) ease of avoidance of contact, (d) gain from contact, and (e) enjoyment of contact.

The data indicated a trend toward significant relationship between contact variables and the six levels. The research of Pettigrew (1969) and Brophy (1964) are also supportive of these findings.

The significant indication is primarily from the last four levels (moral, hypothetical, feeling, and action) for the Multivariate Multiple Regression for contact variables. These four independent variables must be examined with caution because of the possibility of finding significant results that are significant by chance only. As transition is made from the multivariate regression table to the Pearson Moment Product table, one finds that significant relationships exist almost entirely on the contact enjoyment variable, and not on any of the others. Contact enjoyment seems to be quite highly related to the moral, hypothetical, feeling, and action level for Whites. Contact enjoyment for Blacks was demonstrated only at the feeling level. For Whites, it indicates that the more enjoyable contacts they had with Blacks, the more likely their attitude would be favorable at Level 3, 4, 5, and 6 (moral, hypothetical, feeling, and action).



For Blacks, an increased enjoyment of contact with Whites is not related to positive high scores. An explanation for this could be that this group of Blacks in the sample did not have enjoyable contacts with Whites. This could be attributable to the sample specifically.

#### Attitudes and Political Affiliation

H-4.--There is a significant difference among attitude scores of political affiliation groups.

The results from the analysis did not support this hypothesis. An explanation for the lack of difference among political groups might also be similar to that indicated for Hypothesis 1, which stated that the homogeneity of the population may lessen the significant differences among the political groups.

#### Attitudes and Sex

H-5.--There is a significant difference in racial attitudes between males and females.

The data indicated a significant difference between sex and attitude. In the examination of the cell means at Levels 4 and 5 (hypothetical and feeling) it was found that White females were the most positive toward

members of the opposite race. This could be attributed to the youthful age level and the life style of many young White females in this study who probably think and feel more liberated and responsive to the needs of other racial groups.

Black males and females were the least positive toward members of the opposite race at Level 5 (feeling). The Blacks who responded to this questionnaire were primarily ghetto oriented and their contact with Whites might have been a bad experience which resulted in negative feelings about members of the opposite race.

Further examination of cell means at Level 6 (action) indicates that Black men and White women were the most positive toward members of the opposite race. This might be a result of our present contemporary society in which Black males are fulfilling their quest for identity and equality, and young White females are actively seeking liberation.

#### Attitudes and Religion

H-6.--There is a significant difference among the attitude scores of religious groups.

The results from the study did not support this hypothesis. An explanation for the lack of differences among religious groups might be similar to that indicated in Hypothesis 1, in which homogeneity of the population reduced the between-group difference.

### Attitudes and Race

H-7.--There is a significant difference between attitude scores of racial groups.

This hypothesis was supported, indicating a significant relationship between attitudes and race. Blacks were more positive toward Whites at Levels 1 and 2 (stereotypic and normative).

Blacks seem to see the image and norms of society as being more positive toward Whites than for Blacks. At Level 5 (feeling) Whites tended to indicate a desire to be more positive in their attitudes toward Blacks.

### Simplex Approximation

H-8.--The ABS:BW/WN-E will form a Guttman simplex for each of the racial groups.

The Guttman simplex was approximated for the two racial groups. An interpretation based on the Jordan-Guttman paradigm of the nature of the attitudes is that the object-subject relationship between each of the levels

of ABS:BW/WN-E is ordered on a continuum of increasing strength. The simplex approximation indicates that the structure of the ABS:BW/WN-E is as postulated and presents data for the construct validity of the scale.

### Recommendations for Further Research

#### Attitude Change Experiment

An experimental study using the ABS:BW/WN-E scale should be used to determine if some treatment is able to change attitudes of randomly selected groups toward members of the opposite race. An experimental group and control group could be set up. In the experimental group an emphasis on human relations would be added to the original class offering. The control group would not place an emphasis on human relations.

Thus the question is whether or not existing attitudes of Blacks and Whites can be altered by the design illustrated:

$$\begin{array}{ccc} R & \times & O_1 \\ R & & O_2 \end{array}$$

#### Scale Validation

The data collected in this study along with

similar data collected in other studies should be utilized together with future studies to be validated across different populations.

### Replication

The present study could be replicated using other Black and White adults in continuing education programs designed for high school completion.

### Statistical Analysis

The Multivariate Multiple Regression is an improvement over Multiple Regression and the Pearson Product Moment correlations in that it reduces the amount of dependency between tests. More specifically, it reduces the chance of finding a significant result when in fact, there is no significance or relationship (Type I Error).

### Limitations

The population administered in this study were primarily young adults between the ages of 17 to 30 who were completing their requirements for a high school diploma. Thus, one of the bad features of the questionnaire was the prolonged length of time needed to

complete the task. This can best be exemplified by the reliability of the last section of the scale (Life Situation) which, as indicated by the Hoyt analysis, was very low.

Another possible limitation might be the reading level of the students in relation to the questionnaire. A lack of comprehension as to what the questions were asking was perhaps of much concern to many of the students.

#### Implications of the Study

This study has explored the Guttman facet analysis of racial attitudes with the following implications:

This study indicated relationships between such factors as sex, change, race, contact, and attitude. By studying these factors individually, it was possible to conclude that a person's attitude was not determined by only one variable.

Guttman facet analysis has given meaning to the dimensions of attitude in relation to the six levels at which racial attitudes can be structured.

The many dimensions of the contact variable was demonstrated in this study. The various types of contact possible with an attitude object was: (a) kind of contact, (b) amount of contact, (c) ease of avoidance of contact, (d) gain from contact, and (e) enjoyment of contact.

The information from this study could be made available to instructors and administrators in helping them understand the racial attitudinal behavior of students in adult education.

This information could be useful to a director of an adult education program by enabling him to alter the curriculum of his programs based on similar research to meet some of the humanistic needs of that community. Course offerings with ethnic understanding could be incorporated into the program.

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## APPENDICES



## APPENDIX A

### OVERVIEW OF THE FINN PROGRAM

## MULTIVARIANCE

MULTIVARIANCE-

UNIVARIATE AND MULTIVARIATE ANALYSIS OF VARIANCE AND  
COVARIANCE: A FORTRAN IV PROGRAM

Version 4 - June, 1968\*

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\*This program is a modification of "Multivariate:  
Fortran Program for Univariate and Multivariate Analysis  
of Variance and Covariance," Department of Educational  
Psychology, State University of New York at Buffalo,  
May, 1967.

A Generalized Univariate and Multivariate Analysis of Variance,  
Covariance, and Regression Program<sup>1</sup>

This and the following chapters describe a computer program which is now in operation at the State University of New York at Buffalo, and elsewhere, which will perform much of the multivariate analysis reported in preceding sections. Multivariate will perform univariate and multivariate linear estimation and tests of hypotheses for any crossed and/or nested design, with or without concomitant variables. The number of observations in the subclasses may be equal, proportional, or disproportionate. The latter includes the extreme case of unequal group sizes involving null subclasses, such as might arise in the application of incomplete experimental designs.

The program performs an exact least-squares analysis by the method described by Bock (1963). It is logically divided into three phases: input, estimation, and what has been termed "analysis." The input phase allows for six possible forms of data, four controlled by variable format cards. The data may be punched as:

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<sup>1</sup>This chapter is a modified version of a paper by the same name presented at the annual meeting of SHARE (XXX), Houston, Texas, February 29, 1968.

The version of Multivariate presented in this manual was written and tested with the cooperation of the Computing Center of the State University of New York at Buffalo. The Center is partially supported by NIH Grant FR-00126 and NSF Grant GP-7318. Assistance with the programming of this version was provided by Mr. Fred Hockersmith. Several of the matrix subroutines were adopted and/or revised from those produced by the IBM Corporation (1966), and from Bock and Peterson (1967). The chi-square and F probability routines were written by Mr. Richard J. Sherin and appear in Clyde, Cramer, and Sherin (1966). Computations for the age x sex repeated measures design were performed by Mr. Roger Koehler.

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1. Raw unsorted data, each observation with its own cell identification information.
2. Raw data, sorted by cells, each cell with its own header card.
3. Raw data, no header cards, in order by cells.
- 4, 5. Raw data to be read from an independently prepared binary tape.
6. Means, variance-covariance matrix, and cell frequencies.

The last option allows for reanalysis of data which may have been presented only in summary form, such as might be found in a text or journal article. The subclass frequencies may be highly unequal, and within the limits of the computer are not restricted in magnitude. No account need be made of null groups; the program will automatically detect them. Options are available for reading the data from non-system binary or BCD input devices.

A variety of common data transformations is provided. In addition, the program will accept a matrix transformation which can be used to obtain linear combinations of the original variates. The transformation matrix may itself be automatically generated, for the analysis of repeated measures designs. A program option allows for the orthonormalization of the transformation matrix. After transformations, the observed means and standard deviations for each subclass are displayed.

The estimation and analysis phases are based entirely on the specification of single-degree-of-freedom planned contrasts. Rather

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than placing artificial restrictions on the sums of the group effects, Multivariate provides a solution for the model of deficient rank by having the user determine linear combinations of the group membership effects which are of interest to him. Five common sets of between-group contrasts are available, including orthogonal polynomials. Others include the comparison of all experimental groups to a control, comparing each subgroup to the mean of the subgroups, and Helmert contrasts. In addition, the program will accept arbitrary contrast matrices constructed by the user, for problems for which contrasts other than the five provided are of interest. The designation of the effects is through the use of coded "symbolic contrast vectors" which are described in the following sections.

The estimation phase of the program will estimate the magnitude of the effects and their standard errors. In addition, subclass means and residuals may be estimated, based upon the fitting of a model of user-determined rank. The observed and estimated subclass means may be combined across subclasses as desired. Means may be estimated for null subclasses when this is appropriate. The error sum of squares and cross products are estimated, and are adjusted to yield the variances and correlations of the variates. This estimate of the population sum-of-squares and cross-products may be either the within-group term, the residual sum-of-products after fitting a given model to the data, or special effects which are user-determined. This feature allows for the analysis of any fixed, random, or mixed effects design. Only one of the possible error terms may be employed

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in any given run however, so that multiple runs are necessary for testing all effects in a model where more than one error term is needed.

The analysis phase may be repeated any number of times. It allows the user to select subsets of variables and covariates from his original input set and to perform the appropriate analyses. Designating more than one variable as a criterion measure will cause the program to consider them simultaneously and to apply appropriate multivariate test criteria. If some of the variables selected are designated as covariates, the program will perform a regression analysis prior to the analysis of covariance to determine the relationship between them and the dependent measures. The regression coefficients in raw and standardized form and their standard errors are estimated. If between-group contrasts, cell means, and residuals have been estimated, they will be adjusted for covariates and re-estimated. The partial correlations among the dependent measures, the adjusted variances and standard deviations, are calculated and displayed.

Tests of hypotheses concerning relationships between the two sets of variables are provided in three forms. The first of these is a univariate and step-down multiple correlation analysis, to determine the relationship between the independent variables and the individual dependent measures. Second, a stepwise univariate and multivariate multiple regression analysis is performed to determine the effects of the individual independent variables (or sets of independent variables; i.e. predictors may be entered into the

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regression equations singly or in groups). In all cases, the order of both sets of variables is determined by the user prior to the computer run. A third regression option is the calculation of the canonical correlations, the corresponding raw and standardized weights, the percent of variation in the dependent measures accounted for by each of the correlations, and finally tests of significance of them. This is the extent of the regression portion of the Multivariate program. The program may be used to perform specific individual analyses. These include the simpler univariate analysis, the estimation of between-group effects, multivariate regression analysis, or just canonical correlation analysis by itself.

If subjects have been grouped in a sampling design, the program will proceed with the appropriate orthogonal or exact non-orthogonal analysis of variance (or covariance, if covariates had been indicated). The contrasts established earlier are grouped for tests of hypotheses according to the user's desires. For each contrast or each factor in the model, the program will perform univariate and/or multivariate tests of significance, and the step-down analysis. This latter feature is of particular value for the analysis of repeated measures designs.

If the user desires, a discriminant analysis may be performed for each contrast or set of contrasts. The variance of the discriminant function and the percentage of between-group variation attributable to it are computed by the program. In addition, the raw and standardized discriminant function weights are calculated,

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and the three tests of significance due to Roy, Hotelling, and Bartlett, are carried out.

Finally, if the program is being employed to analyze a non-orthogonal design, the user may wish to reorder the between-group effects for subsequent hypothesis testing. Again the order must be determined by the user on an a priori basis. The program will easily allow for this reordering. An additional feature is of value for the analysis of incomplete designs. It often happens that in a complex design, or even simple designs which are based on survey data, a number of subgroups have no observations. It is therefore necessary when choosing a set of contrasts to be certain that they are estimable. The inestimable terms are frequently interactions and often difficult to locate by inspection. The current version of the Multivariate program includes the identification and location of such terms so that they may be removed from the model by the user. An annotated list of the output available from Multivariate follows the user's manual.

The main program and all of its subroutines are coded in Fortran IV. Double precision is employed wherever accuracy may become a concern. Versions of the program will readily work on most 32K-word computers and larger. Instructions for adapting the program to a new system follow this manual. The programming technique which was used is somewhat unique. All labels, data, data matrices, intermediate, and final results are stored within a single singly-subscripted long vector within the program. Within this vector, all



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data are packed. That is, there are no unused core locations between the rows or columns of the matrices of a particular problem-run. In addition, there are no unused locations between matrices. This necessitates that the address of every matrix and of its elements be variable and adjusted to the particular problem. Only the non-zero portions of triangular matrices and half of symmetric matrices are kept in storage. Both are stored in packed form by rows (i.e.  $a_{11}$ ,  $a_{21}$ ,  $a_{22}$ ,  $a_{31}$ ,  $a_{32}$ ,  $a_{33}$ ,  $a_{41}$ , etc.). Only the principle elements of diagonal matrices are used, and are stored in vector form (i.e.  $a_{11}$ ,  $a_{22}$ , ...,  $a_{nn}$ ). Matrix operations on large matrices, such as the orthonormalization of a potentially very large basis, are segmented so that only portions of the matrix reside in core at any one time. Elements corresponding to null subclasses are eliminated whenever possible.

The result of this "controlled storage mode" is that Multivariance has the flexibility to handle a variety of different sized problems. In each case, the amount of core needed is a function of the particular job. With all other parameters minimal (e.g. with 1 dependent variable), the program will accept problems of about 1000 subgroups of subjects, or, of about 100 dependent variables and covariates combined in a problem with very few subgroups (e.g. 1 or 2 groups, or in a regression analysis), with a 32K machine. A typical large problem would be about 100 cells and 20 variables. Multivariance is programmed in sections (not links) so that portions of it may be easily removed from core, allowing more space for the data vector, and thus for larger problems. There are no checks built into the

- 8 -

program for exceeding the available storage memory. Guidelines for determining capacity are provided however, following the user's manual. In addition a list of removable sections and the options they contain is provided.

This version of Multivariance has incorporated within it a set of about 50 checks for errors that may be made in attempting to use the program. The user is referred to an appropriate point in this manual, which describes the source of the error. The program has been tested on a large number of problems. Yet, "bugs" are inevitable. The author would greatly appreciate being notified of any error that is discovered.

## APPENDIX B

### BASIC VARIABLES BY IBM CARD AND COLUMN

TABLE 20.--Basic Variables by IBM Card and Column  
ABS:BW/WN Education

	VARIABLE <sup>1</sup>	RANGE	CARD	COLUMN	PAGE	ITEM
Attitude Content	1. Stereotype	8-24	1	41-48	1	1-8
	2. Normative	8-24	1	49-56	2	9-16
	3. Personal Moral Eval	8-24	1	57-64	3	17-24
	4. Hypo Action	8-24	1	65-72	4	25-32
	5. Personal Feeling	8-24	2	11-18	5	33-40
	6. Personal Action	8-24	2	19-26	6	41-48
Value	7. Efficacy	9-36	1	33-39	D-12, 13	71-79
Contact	8. Kind	1-5	1	19	D-9	59
	9. Amount	1-5	1	20	D-9	60
	10. Avoidance	1-5	1	21	D-9	61
	11. Gain	1-4	1	22	D-9	62
	12. Enjoyment	1-5	1	25	D-10	65
Change Prone- ness	13. Set in Ways	1-4	1	13	D-8	53
	14. Child Rear	1-4	1	14	D-8	54
	15. Birth Con- trol	1-4	1	15	D-8	55
	16. Automa- tion	1-4	1	16	D-8	56
Demo- graphic	17. Sex	1-2	1	5	D-7	49
	18. Race	1-2	1	4	D-11	70
	19. Religion	1-3	1	24	D-11	68
	20. Politics	1-3	1	8	D-7	52

<sup>1</sup> Based on 112270 edition

APPENDIX C.1

ATTITUDE BEHAVIOR SCALE: B/W-E

ATTITUDE BEHAVIOR SCALE-BW-E

DIRECTIONS

This booklet contains statements of how people behave in certain situations or feel about certain things. You, yourself, or other Black persons often behave in the same way toward Whites. -You also have some general ideas about yourself, about other Black persons like you and about Whites. Sometimes you feel or behave the same way toward everyone and sometimes you feel or behave differently toward Whites.

This questionnaire has statements about ideas and about behavior. Each statement of this questionnaire is different from every other section, although some of the statements in each section are similar. Your answers in one section, therefore, may be the same as answers in another section, or your answers may differ from section to section. Here is a sample statement:

Sample I

Other Blacks believe the following things about Whites as compared to Blacks:

1. Chance of Whites being taller
  1. Less chance than Blacks
  2. about the same
  3. more chance than Blacks

If other Blacks believe that Whites have less chance than Blacks to be taller, you should circle the number 1 as shown above.

\*\*\*\*\*

DO NOT PUT YOUR NAME ON THE BOOKLET

\*\*\*\*\*

by: John E. Jordan  
College of Education  
Michigan State University

Adapted by  
Aubrey Radcliffe

Directions: Section I

This section contains statements about ideas which other Blacks have about Whites. Circle or fill in the answer sheet number that indicates how other Blacks compare Whites with themselves. Please answer all questions.

Other Blacks believe the following things about Whites as compared to Blacks:

1. Whites' intellectual ability is
  1. less than Blacks'
  2. about the same
  3. more than Blacks'
2. In school Whites are disciplined
  1. less than Blacks'
  2. about the same as Blacks'
  3. more than Blacks'
3. In school Whites' desire to work is
  1. less than Blacks'
  2. about the same as Blacks'
  3. more than Blacks'
4. Whites desire a higher education
  1. less often than Blacks
  2. about as often as Blacks
  3. more often than Blacks
5. Whites desire to get their school work done
  1. less often than Blacks
  2. about as often as Blacks
  3. more often than Blacks
6. Whites' concern for their educational future is
  1. less than Blacks'
  2. about the same as Blacks'
  3. more than Blacks'
7. Whites believe in public school integration
  1. less than Blacks
  2. about the same as Blacks
  3. more than Blacks
8. The homes that White students come from favor education
  1. less than Black homes
  2. about the same as Black homes
  3. more than Black homes

ABS-II-BW-E

Directions: Section II

This section contains statements about things which most Blacks generally believe others would experience when interacting with Whites. Please choose the answer that indicates what you think most others believe about Whites.

Most Blacks generally believe the following about interacting with Whites:

9. Blacks believe that the intellectual ability of Whites is equal to theirs
  1. disagree
  2. undecided
  3. agree
10. Blacks believe in equal discipline for Whites and Blacks
  1. disagree
  2. undecided
  3. agree
11. Blacks believe Whites want to work as much as they do in school
  1. disagree
  2. undecided
  3. agree
12. Blacks believe Whites desire a higher education as much as they do
  1. disagree
  2. undecided
  3. agree
13. Blacks believe they want to do their study or school work with Whites
  1. disagree
  2. undecided
  3. agree
14. Blacks believe that Whites are concerned about their educational future as much as they are
  1. disagree
  2. undecided
  3. agree
15. Blacks usually believe in working with Whites for public school integration
  1. disagree
  2. undecided
  3. agree
16. Blacks believe that White homes favor education as much as Black homes do
  1. disagree
  2. undecided
  3. agree



ABS-III-BW-E

Directions: Section III.

This section contains statements of the right or wrong way of behaving or acting toward Whites. You are asked to indicate what you yourself believe others think should be done with respect to Whites.

In respect to Whites, what do you, yourself, believe others think is right or wrong:

17. To expect Whites' intellectual ability to be the same as Blacks is
  1. usually wrong
  2. undecided
  3. usually right
18. To expect Whites to be disciplined the same as Blacks is
  1. usually wrong
  2. undecided
  3. usually right
19. To expect Whites to work the same as Blacks do in school is
  1. usually wrong
  2. undecided
  3. usually right
20. To expect Whites to desire a higher education as much as Blacks do is
  1. usually wrong
  2. undecided
  3. usually right
21. To expect Blacks to do their school work with Whites is
  1. usually wrong
  2. undecided
  3. usually right
22. To expect Blacks to share their concern for their educational future with Whites is
  1. usually wrong
  2. undecided
  3. usually right
23. To expect Blacks to believe in public school integration is
  1. usually wrong
  2. undecided
  3. usually right
24. To expect that the homes of White students favor education as much as Black homes do is
  1. usually wrong
  2. undecided
  3. usually right

Directions: Section IV

This section contains statements about how you think you would act toward Whites. Choose the answer that indicates how you think you would act.

In respect to a White person would you, yourself:

25. I would want my intellectual ability to be the same as that of Whites
1. no
  2. undecided
  3. yes
26. I would want to be disciplined in school the way Whites are
1. no
  2. undecided
  3. yes
27. I would desire to work in school the same as Whites do
1. no
  2. undecided
  3. yes
28. I would want to have the same desire Whites do for a higher education
1. no
  2. undecided
  3. yes
29. I would want to do my schoolwork as well as Whites do theirs
1. no
  2. undecided
  3. yes
30. I would discuss my concern for my educational future with Whites
1. no
  2. undecided
  3. yes
31. I would work for public school integration
1. no
  2. undecided
  3. yes
32. I would want the homes that Black students come from to favor education as much as Whites' homes
1. no
  2. undecided
  3. yes

Directions: Section V

This section concerns actual feelings that you yourself may have about Whites. You are asked to indicate how you feel about the following statements.

How do you actually feel toward Whites:

33. When Whites' intellectual ability is the same as Blacks I feel
1. bad
  2. indifferent
  3. happy
34. When I am or was disciplined in school the same as Whites I feel or felt
1. bad
  2. indifferent
  3. content
35. When Blacks work as hard in school as Whites do, I feel
1. discontent
  2. indifferent
  3. content
36. When Whites desire a higher education as much as Blacks do, I feel
1. bad
  2. indifferent
  3. good
37. When Whites desire to do their school work less than Blacks do, I feel
1. good
  2. indifferent
  3. bad
38. When I have the same concern for my educational future as Whites have for theirs, I feel
1. angry
  2. indifferent
  3. happy
39. When Whites work for public school integration, I feel
1. bad
  2. indifferent
  3. good
40. When the homes that Black students come from favor education as much as White homes I feel
1. discontent
  2. indifferent
  3. content

ABS-VI-BW-E

Directions: Section VI

This section concerns actual experiences you have had with Whites. Try to answer the following questions from the knowledge of your own experience. If you have had no experience or contact with Whites, omit questions 41-48 and begin again at question number 49. If you have had any experience or contact with Whites answer all of the following questions.

Experiences or contacts with Whites:

41. The intellectual ability of Whites is equal to mine
  1. no
  2. uncertain
  3. yes
42. I have been disciplined in school the same as Whites
  1. no
  2. uncertain
  3. yes
43. The Whites I know worked as hard in school as I did
  1. no
  2. uncertain
  3. yes
44. The Whites I know wanted a higher education as much as I did
  1. no
  2. uncertain
  3. yes
45. In school Whites did their homework as well as I did mine
  1. no
  2. uncertain
  3. yes
46. The concern of Whites for their educational future is the same as mine
  1. no
  2. uncertain
  3. yes
47. I have supported public school integration
  1. no
  2. uncertain
  3. yes
48. I have seen that the homes that White students come from favor education as much as Black homes
  1. no
  2. uncertain
  3. yes

ATTITUDE BEHAVIOR SCALE - ABS-BW-D

This part of the questionnaire deals with many things. For the purpose of this study, the answers of all persons are important.

Part of the questionnaire has to do with personal information about you. Since the questionnaire is completely anonymous and confidential, you may answer all of the questions freely without any concern about being identified. It is important to the study to obtain your answer to every question.

Please read each question carefully and do not omit any questions. Please respond by circling the answer.

49. Please indicate your sex.

1. Female
2. Male

50. Please indicate your age as follows:

1. Under 20
2. 21-30
3. 31-40
4. 41-50
5. 51 - over

51. What is your marital status?

1. Married
2. Single
3. Divorced
4. Widowed
5. Separated

52. What is your religion?

1. I prefer not to answer
2. Catholic
3. Protestant
4. Jewish
5. Other

ABS-BW-D

53. Some people are more set in their ways than others. How would you rate yourself?

1. I find it very difficult to change
2. I find it slightly difficult to change
3. I find it somewhat easy to change
4. I find it very easy to change

54. Some people feel that in bringing up children, new ways and methods should be tried whenever possible. Others feel that trying out new methods is dangerous. What is your feeling about the following statement?

"New methods of raising children should be tried whenever possible."

1. Strongly disagree
2. Slightly disagree
3. Slightly agree
4. Strongly agree

55. Family planning on birth control has been discussed by many people. What is your feeling about a married couple practicing birth control? Do you think they are doing something good or bad? If you had to decide, would you say they are doing wrong, or that they are doing right?

1. It is always wrong
2. It is usually wrong
3. It is probably all right
4. It is always right

56. People have different ideas about what should be done concerning automation and other new ways of doing things. How do you feel about the following statement?

"Automation and similar new procedures should be encouraged (in government, business, and industry) since it eventually creates new jobs and raises the standard of living."

1. Strongly disagree
2. Slightly disagree
3. Slightly agree
4. Strongly agree

57. In respect to your religion, about what extent do you observe the rules and regulations of your religion?

1. I prefer not to answer
2. I have no religion
3. Sometimes
4. Usually
5. Almost always

ABS-BW-D

58. I find it easier to follow rules than to do things on my own.

1. Agree strongly
2. Agree slightly
3. Disagree slightly
4. Disagree strongly

The following questions have to do with the kinds of experiences you have had with Whites. If more than one experience applies, please choose the answer with the highest number.

59. Circle the statement which best applies to you.

1. I have read or studied about Whites through reading, movies, lecture or observation.
2. A friend or relative is a White person.
3. I have personally worked with Whites as a teacher, counselor, volunteer, child care, etc.
4. A close friend or relative is married to a White.
5. I am married to a White.

60. Considering all of the times you have talked, worked, or in some other way had personal contact with Whites, about how much has it been altogether?

1. Only a few casual contacts
2. Between one and three months
3. Between three and six months
4. Between six months and one year
5. More than one year of contact

61. When you have been in contact with Whites, how easy for you, in general, would you say it would have been to have avoided being with them?

1. I have had no contact.
2. I could generally have avoided these personal contacts only at great cost or difficulty.
3. I could generally have avoided these personal contacts only with considerable difficulty.
4. I could generally have avoided these personal contacts but with some inconvenience.
5. I could generally have avoided these personal contacts without any difficulty or inconvenience.

62. During your contact with Whites, did you gain materially in any way through these contacts, such as being paid, or gaining academic credit, or some such gain?

1. No, I have never received money, credit, or any other material gain.
2. Yes, I have been paid for working with Whites.
3. Yes, I have received academic credit or other material gain.
4. Yes, I have both been paid and received academic credit.

ABS-BW-D

63. If you have been paid for working with Whites, about what percent of your income was derived from contact with Whites during the actual period when working with them?
1. No work experience
  2. Less than 25%
  3. Between 26 and 50%
  4. Between 51 and 75%
  5. More than 76%
64. If you have ever worked with Whites for personal gain or for money, what opportunities did you have (or do you have) to work at something else instead; that is, something else that was (is) acceptable to you as a job?
1. No such experience
  2. No other job available
  3. Other jobs available not at all acceptable to me
  4. Other jobs available were not quite acceptable to me
  5. Other jobs available were fully acceptable to me
65. How have you generally felt about your experiences with Whites?
1. No experience
  2. I definitely dislike it
  3. I did not like it very much
  4. I like it somewhat
  5. I definitely enjoyed it
66. Which of the following do you think would have the effect of reducing racial prejudice in America? Circle only one.
1. Integration of schools
  2. Publicity campaigns to promote integration
  3. Fair employment legislation
  4. Open housing legislation
  5. Direct, personal contact between members of various racial groups
67. What is your approximate annual income?
1. Less than \$4,000
  2. \$4,001 to \$7,000
  3. \$7,001 to \$9,000
  4. \$9,001 to \$11,000
  5. More than \$11,000



ABS-BW-D

68. Which political party do you favor the most?

1. Republican
2. Democrat
3. American Independent Party
4. Socialist Party
5. Other

69. How would you rate your own racial attitudes as compared to the average person?

1. Very much more prejudiced
2. Somewhat more prejudiced
3. About the same
4. Somewhat less prejudiced
5. Very much less prejudiced

70. To which racial group do you belong?

1. Prefer not to answer
2. White
3. Black
4. Oriental
5. Other

ABS-BW-D

LIFE SITUATIONS

This section of the booklet deals with how people feel about several aspects of life or life situations. Please indicate how you feel about each situation by circling the answer you choose.

71. It should be possible to eliminate war once and for all
1. strongly disagree
  2. disagree
  3. agree
  4. strongly agree
72. Success depends to a large part on luck and fate
1. strongly agree
  2. agree
  3. disagree
  4. strongly disagree
73. Someday most of the mysteries of the world will be revealed by science
1. strongly disagree
  2. disagree
  3. agree
  4. strongly agree
74. By improving industrial and agricultural methods, poverty can be eliminated in the world
1. strongly disagree
  2. disagree
  3. agree
  4. strongly agree
75. With increased medical knowledge, it should be possible to lengthen the average life span to 100 years or more
1. strongly disagree
  2. disagree
  3. agree
  4. strongly agree
76. Someday the deserts will be converted into good farming land by the application of engineering and science
1. strongly disagree
  2. disagree
  3. agree
  4. strongly agree

ABS-BW-D

77. Education can only help people develop their natural abilities; it cannot change people in any fundamental way.

1. strongly agree
2. agree
3. disagree
4. strongly disagree

78. With hard work anyone can succeed

1. strongly disagree
2. disagree
3. agree
4. strongly agree

79. Almost every present human problem will be solved in the future

1. strongly disagree
2. disagree
3. agree
4. strongly agree

APPENDIX C.2

ATTITUDE BEHAVIOR SCALE: W/N-E

ATTITUDE BEHAVIOR SCALE-WN-E

DIRECTIONS

This booklet contains statements of how people behave in certain situations or feel about certain things. You, yourself, or other White persons often behave in the same way toward Negroes. You also have some general ideas about yourself, about other White persons like you and about Negroes. Sometimes you feel or behave the same way toward everyone and sometimes you feel or behave differently toward Negroes.

This questionnaire has statements about ideas and about behavior. Each statement of this questionnaire is different from every other section, although some of the statements in each section are similar. Your answers in one section, therefore, may be the same as answers in another section, or your answers may differ from section to section. Here is a sample statement:

Sample I

Other Whites believe the following things about Negroes as compared to Whites:

1. Chance of Negroes being taller

- ①. less chance than Whites
2. about the same
3. more chance than Whites

If other Whites believe that Negroes have less chance than Whites to be taller, you should circle the number 1 as shown above.

\*\*\*\*\* DO NOT PUT YOUR NAME ON THE BOOKLET \*\*\*\*\*

by: John E. Jordan  
College of Education  
Michigan State University

Adapted by  
Aubrey Radcliffe

Directions: Section I

This section contains statements about ideas which other Whites have about Negroes. Circle or fill in the answer sheet number that indicates how other Whites compare Negroes with themselves. Please answer all questions.

Other Whites believe the following things about Negroes as compared to Whites:

1. Negroes' intellectual ability is
  1. less than Whites'
  2. about the same
  3. more than Whites'
2. In school Negroes are disciplined
  1. less than Whites'
  2. about the same as Whites'
  3. more than Whites'
3. In school Negroes' desire to work is
  1. less than Whites'
  2. about the same as Whites'
  3. more than Whites'
4. Negroes desire a higher education
  1. less often than Whites
  2. about as often as Whites
  3. more often than Whites
5. Negroes desire to get their school work done
  1. less often than Whites
  2. about as often as Whites
  3. more often than Whites
6. Negroes' concern for their educational future is
  1. less than Whites'
  2. about the same as Whites'
  3. more than Whites'
7. Negroes believe in public school integration
  1. less than Whites
  2. about the same as Whites
  3. more than Whites
8. The homes that Negro students come from favor education
  1. less than White homes
  2. about the same as White homes
  3. more than White homes

ABS-II-WN-E

Directions: Section II

This section contains statements about things which most Whites generally believe others would experience when interacting with Negroes. Please choose the answer that indicates what you think most others believe about Negroes.

Most Whites generally believe the following about interacting with Negroes:

9. Whites believe that the intellectual ability of Negroes is equal to theirs
  1. disagree
  2. undecided
  3. agree
10. Whites believe in equal discipline for Negroes and Whites
  1. disagree
  2. undecided
  3. agree
11. Whites believe Negroes want to work as much as they do in school
  1. disagree
  2. undecided
  3. agree
12. Whites believe Negroes desire a higher education as much as they do
  1. disagree
  2. undecided
  3. agree
13. Whites believe they want to do their study or school work with Negroes
  1. disagree
  2. undecided
  3. agree
14. Whites believe that Negroes are concerned about their educational future as much as they are
  1. disagree
  2. undecided
  3. agree
15. Whites usually believe in working with Negroes for public school integration
  1. disagree
  2. undecided
  3. agree
16. Whites believe that Negro homes favor education as much as White homes do
  1. disagree
  2. undecided
  3. agree

ABS-III-WN-E

Directions: Section III

This section contains statements of the right or wrong way of behaving or acting toward Negroes. You are asked to indicate what you yourself believe others think should be done with respect to Negroes.

In respect to Negroes, what do you, yourself, believe others think is right or wrong:

17. To expect Negroes' intellectual ability to be the same as Whites is
  1. usually wrong
  2. undecided
  3. usually right
18. To expect Negroes to be disciplined the same as Whites is
  1. usually wrong
  2. undecided
  3. usually right
19. To expect Negroes to work the same as Whites do in school is
  1. usually wrong
  2. undecided
  3. usually right
20. To expect Negroes to desire a higher education as much as Whites do is
  1. usually wrong
  2. undecided
  3. usually right
21. To expect Whites to do their school work with Negroes is
  1. usually wrong
  2. undecided
  3. usually right
22. To expect Whites to share their concern for their educational future with Negroes is
  1. usually wrong
  2. undecided
  3. usually right
23. To expect Whites to believe in public school integration is
  1. usually wrong
  2. undecided
  3. usually right
24. To expect that the homes of Negro students favor education as much as White homes do is
  1. usually wrong
  2. undecided
  3. usually right



ABS-IV-WN-E

Directions: Section IV

This section contains statements about how you think you would act toward Negroes. Choose the answer that indicates how you think you would act.

In respect to a Negro person would you, yourself:

25. I would want my intellectual ability to be the same as that of Negroes
1. no
  2. undecided
  3. yes
26. I would want to be disciplined in school the way Negroes are
1. no
  2. undecided
  3. yes
27. I would desire to work in school the same as Negroes do
1. no
  2. undecided
  3. yes
28. I would want to have the same desire Negroes do for a higher education
1. no
  2. undecided
  3. yes
29. I would want to do my schoolwork as well as Negroes do theirs
1. no
  2. undecided
  3. yes
30. I would discuss my concern for my educational future with Negroes
1. no
  2. undecided
  3. yes
31. I would work for public school integration
1. no
  2. undecided
  3. yes
32. I would want the homes that White students come from to favor education as much as Negroes' homes
1. no
  2. undecided
  3. yes

ABS-V-WN-E

Directions: Section V

This section concerns actual feelings that you yourself may have about Negroes. You are asked to indicate how you feel about the following statements.

How do you actually feel toward Negroes:

33. When Negroes' intellectual ability is the same as Whites I feel
  1. bad
  2. indifferent
  3. happy
34. When I am or was disciplined in school the same as Negroes I feel or felt
  1. bad
  2. indifferent
  3. content
35. When Whites work as hard in school as Negroes do, I feel
  1. discontent
  2. indifferent
  3. content
36. When Negroes desire a higher education as much as Whites do, I feel
  1. bad
  2. indifferent
  3. good
37. When Negroes desire to do their school work less than Whites do, I feel
  1. good
  2. indifferent
  3. bad
38. When I have the same concern for my educational future as Negroes have for theirs, I feel
  1. angry
  2. indifferent
  3. happy
39. When Negroes work for public school integration, I feel
  1. bad
  2. indifferent
  3. good
40. When the homes that White students come from favor education as much as Negro homes I feel
  1. discontent
  2. indifferent
  3. content

ABS-VI-WN-E

Directions: Section VI

This section concerns actual experiences you have had with Negroes. Try to answer the following questions from the knowledge of your own experience. If you have had no experience or contact with Negroes, omit questions 41 - 48 and begin again at question number 49. If you have had any experience or contact with Negroes answer all of the following questions.

Experiences or contacts with Negroes:

41. The intellectual ability of Negroes is equal to mine
  1. no
  2. uncertain
  3. yes
42. I have been disciplined in school the same as Negroes
  1. no
  2. uncertain
  3. yes
43. The Negroes I know worked as hard in school as I did
  1. no
  2. uncertain
  3. yes
44. The Negroes I know wanted a higher education as much as I did
  1. no
  2. uncertain
  3. yes
45. In school Negroes did their homework as well as I did mine
  1. no
  2. uncertain
  3. yes
46. The concern of Negroes for their educational future is the same as mine
  1. no
  2. uncertain
  3. yes
47. I have supported public school integration
  1. no
  2. uncertain
  3. yes
48. I have seen that the homes that Negro students come from favor education as much as White homes
  1. no
  2. uncertain
  3. yes

ATTITUDE BEHAVIOR SCALE - ABS-WN-D

This part of the questionnaire deals with many things. For the purpose of this study, the answers of all persons are important.

Part of the questionnaire has to do with personal information about you.

Since the questionnaire is completely anonymous and confidential, you may answer all of the questions freely without any concern about being identified.

It is important to the study to obtain your answer to every question. Please respond by circling the answer.

49. Please indicate your sex

1. Female
2. Male

50. Please indicate your age as follows:

1. Under 20
2. 21-30
3. 31-40
4. 41-50
5. 51-over

51. What is your marital status?

1. Married
2. Single
3. Divorced
4. Widowed
5. Separated

52. What is your religion?

1. I prefer not to answer
2. Catholic
3. Protestant
4. Jewish
5. Other

ABS-WN-D

53. Some people are more set in their ways than others. How would you rate yourself?
1. I find it very difficult to change
  2. I find it slightly difficult to change
  3. I find it somewhat easy to change
  4. I find it very easy to change
54. Some people feel that in bringing up children, new ways and methods should be tried whenever possible. Others feel that trying out new methods is dangerous. What is your feeling about the following statement?
- "New methods of raising children should be tried whenever possible."
1. Strongly disagree
  2. Slightly disagree
  3. Slightly agree
  4. Strongly agree
55. Family planning on birth control has been discussed by many people. What is your feeling about a married couple practicing birth control? Do you think they are doing something good or bad? If you had to decide, would you say they are doing wrong, or that they are doing right?
1. It is always wrong
  2. It is usually wrong
  3. It is probably all right
  4. It is always right
56. People have different ideas about what should be done concerning automation and other new ways of doing things. How do you feel about the following statement?
- "Automation and similar new procedures should be encouraged (in government, business, and industry) since it eventually creates new jobs and raises the standard of living."
1. Strongly disagree
  2. Slightly disagree
  3. Slightly agree
  4. Strongly agree
57. In respect to your religion, about what extent do you observe the rules and regulations of your religion?
1. I prefer not to answer
  2. I have no religion
  3. Sometimes
  4. Usually
  5. Almost always

ABS-WN-D

58. I find it easier to follow rules than to do things on my own.

1. Agree strongly
2. Agree slightly
3. Disagree slightly
4. Disagree strongly

The following questions have to do with the kinds of experiences you have had with Negroes. If more than one experience applies, please choose the answer with the highest number.

59. Circle the statement which best applies to you.

1. I have read or studied about Negroes through reading, movies, lectures or observation.
2. A friend or relative is a Negro person.
3. I have personally worked with Negroes as a teacher, counselor, volunteer, child care, etc.
4. Close friend or relative is married to a Negro.
5. I am married to a Negro.

60. Considering all of the times you have talked, worked, or in some other way had personal contact with Negroes, about how much has it been altogether?

1. Only a few casual contacts
2. Between one and three months
3. Between three and six months
4. Between six months and one year
5. More than one year of contact

61. When you have been in contact with Negroes, how easy for you, in general, would you say it would have been to have avoided being with them?

1. I have had no contact.
2. I could generally have avoided these personal contacts only at great cost or difficulty.
3. I could generally have avoided these personal contacts only with considerable difficulty.
4. I could generally have avoided these personal contacts but with some inconvenience.
5. I could generally have avoided these personal contacts without any difficulty or inconvenience.

62. During your contact with Negroes, did you gain materially in any way through these contacts, such as being paid, or gaining academic credit, or some such gain?

1. No, I have never received money, credit, or any other material gain.
2. Yes, I have been paid for working with Negroes.
3. Yes, I have received academic credit or other material gain.
4. Yes, I have both been paid and received academic credit.

ABS-WN-D

63. If you have been paid for working with Negroes, about what percent of your income was derived from contact with Negroes during the actual period when working with them?
1. No work experience
  2. Less than 25%
  3. Between 26 and 50%
  4. Between 51 and 75%
  5. More than 76%
64. If you have ever worked with Negroes for personal gain or for money, what opportunities did you have (or do you have) to work at something else instead; that is, something else that was (is) acceptable to you as a job?
1. No such experience
  2. No other job available
  3. Other jobs available not at all acceptable to me
  4. Other jobs available were not quite acceptable to me
  5. Other jobs available were fully acceptable to me
65. How have you generally felt about your experiences with Negroes?
1. No experience
  2. I definitely dislike it
  3. I did not like it very much
  4. I like it somewhat
  5. I definitely enjoyed it
66. Which of the following do you think would have the effect of reducing racial prejudice in America? Circle only one.
1. Integration of schools
  2. Publicity campaigns to promote integration
  3. Fair employment legislation
  4. Open housing legislation
  5. Direct, personal contact between members of various racial groups
67. What is your approximate annual income?
1. Less than \$4,000
  2. \$4,001 to \$7,000
  3. \$7,001 to \$9,000
  4. \$9,001 to \$11,000
  5. More than \$11,000

ABS-WN-D

68. Which political party do you favor the most?

1. Republican
2. Democrat
3. American Independent Party
4. Socialist Party
5. Other

69. How would you rate your own racial attitudes as compared to the **average** person?

1. Very much more prejudiced
2. Somewhat more prejudiced
3. About the same
4. Somewhat less prejudiced
5. Very much less prejudiced

70. To which racial group do you belong?

1. Prefer not to answer
2. White
3. Black
4. Oriental
5. Other



LIFE SITUATIONS

This section of the booklet deals with how people feel about several aspects of life or life situations. Please indicate how you feel about each situation by circling the answer you choose.

71. It should be possible to eliminate war once and for all
1. strongly disagree
  2. disagree
  3. agree
  4. strongly agree
72. Success depends to a large part on luck and fate
1. strongly agree
  2. agree
  3. disagree
  4. strongly disagree
73. Someday most of the mysteries of the world will be revealed by science
1. strongly disagree
  2. disagree
  3. agree
  4. strongly agree
74. By improving industrial and agricultural methods, poverty can be eliminated in the world
1. strongly disagree
  2. disagree
  3. agree
  4. strongly agree
75. With increased medical knowledge, it should be possible to lengthen the average life span to 100 years or more
1. strongly disagree
  2. disagree
  3. agree
  4. strongly agree
76. Someday the deserts will be converted into good farming land by the application of engineering and science
1. strongly disagree
  2. disagree
  3. agree
  4. strongly agree

ABS-WN-D

77. Education can only help people develop their natural abilities; it cannot change people in any fundamental way.

1. strongly agree
2. agree
3. disagree
4. strongly disagree

78. With hard work anyone can succeed

1. strongly disagree
2. disagree
3. agree
4. strongly agree

79. Almost every present human problem will be solved in the future

1. strongly disagree
2. disagree
3. agree
4. strongly agree

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