

ABSTRACT

LEVEL OF OCCUPATIONAL ASPIRATION, PERFORMANCE IN COLLEGE, AND FACILITATION: A PRELIMINARY TEST OF CERTAIN POSTULATES CONCERNING THE RELATIONSHIP BETWEEN ATTITUDES AND BEHAVIOR

by Anthony J. Diekema

Attitudes have been a central topic for many behavioral scientists during the past half-century. Perhaps no other concept used in the behavioral sciences has been applied to a greater variety of investigations of human behavior. Nevertheless, a review of the relevant literature makes it quite apparent that the general relations between attitudes and behavior have not yet been adequately developed. Concern with the relationship between attitudes and behavior thus maintains a rather prominent place in the behavioral science literature today.

This thesis develops three postulates concerning the relationship between attitudes and behavior. The adequacy of these postulates is then partially determined by the testing of three derived general hypotheses and seventeen sub-hypotheses. The postulates and the derived hypotheses center on the fundamental problem of gaining insights into the nature of the relationship between attitudes and

behavior when certain facilitation variables are considered and controlled.

A theoretical framework from which the postulates are developed is presented. This framework is based upon a review of the literature, both theoretical and empirical, dealing with the concept "attitude." A conceptual framework is also formulated from the theoretical position which is then translated into the operational setting of the study. Throughout the thesis, the relationship between the theoretical framework and the operational setting is emphasized.

Operationally, the thesis is concerned with the nature of the relationship between level of occupational aspiration (attitude variable) and performance in college (behavior variable) within the context of several controlled facilitation variables, both extra- and intra-personal. The facilitation variables which are controlled are: (1) perceived reference group support, (2) socioeconomic status, (3) mental ability, (4) perceived necessity of college, and (5) past academic performance. The subjects are 585 freshmen students who entered Michigan State University in the Fall of 1960.

The predictions are tested by a correlational analysis of the data obtained through the administration of several instruments, including A. O. Haller's Occupational Aspiration Scale for measurement of the attitude variable.

The predictions are, on the whole, supported. The three derived general hypotheses are tested, supported and consequently accepted as tenable. Twelve of the sub-hypotheses are accepted while five are rejected. Thus, the postulates are tentatively accepted as tenable on the basis of the data obtained in this operational setting.

The findings of the study suggest several theoretical and methodological refinements for future research and the need for further testing of the postulates in other operational settings. Finally, some practical implications of the study are discussed.

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CHAPTER I

INTRODUCTION

The Purpose

The purpose of this thesis is to develop postulates about the relationship between attitudes and behavior, and to test specific hypotheses derived from the postulates.

The Problem

The problem centers around the basic question, "What is the nature of the relationship between attitudes and behaviors when certain situational or environmental variables are considered and controlled?" A theoretical framework is developed from which several postulates are obtained and stated. The operational question upon which the specific hypotheses guiding this research are based is, "What is the nature of the relationship between level of occupational aspiration and the level of performance in college when certain facilitation variables and varying conditions of facilitation are considered and controlled?" Within the operational framework, level of occupational aspiration constitutes the attitude variable and level of performance in

college is the behavior variable. Selected intellectual and non-intellectual variables are measured and controlled, and these constitute the situational or environmental variables, both intra- and extra-personal, considered to be important when the individual attempts to enact an attitude. Specific hypotheses derived from the operational question are stated within the broader theoretical framework and tested to determine their adequacy.

Importance of the Problem

The problem is important for several specific reasons. First, it is a problem which, if and when resolved, will contribute considerably to a more specific and consensual conceptualization of the term "attitude" and more consensus regarding its overt behavioral consequences under varying conditions of the actor within a social, psychological and physical environment. If so, it will also contribute considerably to our present knowledge about human behavior. Second, the theoretical framework used may, if supported, provide new insights to the even broader concern with the development of a unified theory of social psychology and with the problem of causality. Third, the method may isolate some types of variables, and the relations between them, which could be applicable to future theory building and research in a variety of areas. Finally, the

intensive investigation of the problem should lead to new knowledge regarding the predictability of behavior as well as concerning the relationship of certain socio-psychological factors to behavior and to each other. It should also in time contribute appreciably to the theoretical purpose of increasing the generality of behavior theories.

Current attempts to resolve some of the problems regarding the relationship of attitudes to behavior often are neither consistent nor systematic. Perhaps because of this many thoughtful social psychologists, and social scientists generally, declare the problems to be unresolvable, or at least unfruitful both empirically and theoretically. Unfortunately, in the writer's opinion, this general orientation to the problems has impeded progress toward a more valid explanation of human behavior.

From the "applied" standpoint, the problem is also important. Interest in the predictive value of "non-intellectual" factors in the academic achievement of college students has recently increased. The data used here, and the potential predictive value of the theoretical model of multivariate analysis, will make a practical contribution to this problem possible. It is felt that occupational aspiration is significantly related to performance in college. It is quite conceivable that this is so. Thus, if it is so, this research should enhance our present ability to predict

differential success or failure in college.

The research conducted here is concerned principally with the differential behavior of the actor as it results from his attitudes under various conditions offered by the environment of the attitude. The selection and use of variables is guided by the assumption that the prediction of behavior is possible, and that it is multivariate in nature. This research is not expected to resolve the problem, but it is expected to test initially the usefulness and adequacy of the theoretical framework guiding it, and to determine its worthiness for future research. If the theoretical framework is supported, more intensive studies with more rigid controls, particularly of the situation within which the attitude is carried into behavior (facilitation variables), should be completed in various operational settings.

The Contributions

Several contributions of this study may be isolated. First, it provides initial support, although tentative, for the utility of the theoretical framework which guided it and which is purported to be general. Theoretically, it suggests that differential behaviors toward one type of social object (a "means object") may be predicted on the basis of differential attitudes toward the more distant object (for which the former is a means) and differential facilitation. In the

operational setting of this study it was shown that differential college performance (means behavior) may be predicted on the basis of differential level of occupational aspiration (attitude toward the more distant object--the occupational hierarchy) and differential facilitation for performance in college (means structure).¹ The evidence suggests that the theoretical framework may be extended profitably to other situations and operational settings toward which it has logical relevance.

Second, this study emphasizes and apparently substantiates the critical role of the attitude context (the extra- and intra-personal situation in which the attitude is enacted in behavior) in the attitude-behavior relationship. It supports the notion that the reasons overt behaviors are not always consistent with attitudes are to be found by the intensive investigation and control of these facilitation variables. Methodologically, the study also provides some possible insights into the development of new methods for combining attitude and facilitation variables for optimum prediction of corresponding overt behavior.

Third, the research provides empirical support for the idea that there exists a means-ends relationship between the educational and occupational structures in American

¹These concepts are fully defined and discussed in Chapter II.

society. Thus, it provides indirect support for the notion that persons' positions in one structure differentially determine or allocate their positions in the other. As suggested earlier, then, it may be concluded tentatively that where such a means-ends relationship does exist between two or more objects, overt action behavior toward any one may be differentially predicted on the basis of attitudes (used together with facilitation variables) regarding any one.

The Limitations

The limitations of this study lie in two general spheres. First, the sample imposed several problems by its relatively limited range of variability on several of the key independent variables. The possible implications of this limitation for the tests of significance employed and the observed correlation coefficients cannot be ignored and, thus, they are discussed at various appropriate points in the thesis. Second, the research design posed several unanticipated problems in respect to the control and measurement of variables. These problems are also cited at appropriate points in the thesis and are isolated and discussed in the final chapter.

The Scope

Technically, the findings of this study are limited to the 585 freshmen entering Michigan State University in the Fall of 1960 who made up the sample used in this research. In all probability, however, generalizations may be made to the total freshman class which entered Michigan State University in the Fall of 1960. Finally, assuming that the data used here in the test of a theoretical framework which is purported to be general has all of the proper parameters, the conclusions may be tentatively extended to any situation in which the theoretical framework may be logically employed.

Organization of the Thesis

The thesis contains five chapters. Following this brief introductory chapter, the larger theoretical and conceptual framework is presented in Chapter II. It also provides a general statement of the problem and presents the postulates which constitute the focus of this study. Chapter III discusses the operational framework and the research design. In it the theoretical and conceptual framework is applied to the specific problem and the research design is presented. The sample and the variables are described. Finally, the relationship of the hypotheses to the postulates

is shown and the former are presented in testable form. In Chapter IV the tests of the hypotheses are presented. Chapter V summarizes and evaluates the empirical findings in view of both the theoretical and the operational frameworks of the study. Several limitations of the present study are discussed and suggestions for future research are presented.

CHAPTER II

THEORETICAL FOUNDATION AND CONCEPTUAL BACKGROUND OF THE POSTULATES

This chapter sets forth the larger theoretical framework within which the general problem of research is formulated, the types of variables are stated, and several postulates are constructed for later use in the structuring of the specific problem and testable hypotheses.

Introduction

It is felt that behavior may be predicted on the basis of attitudes. It is also recognized that in attempting to predict behavior on the basis of specific factors one inevitably must become involved in the problem of causation.¹ However, causal relationships in the field of social psychology, or social science generally, are difficult to establish rigorously. At the present time we can often only say that there is a certain pattern of association between two or more phenomena. Usually, the best we can do is assert that

¹For a thorough discussion of the problem of causation, see Roy G. Francis, The Rhetoric of Science (Minneapolis: The University of Minnesota Press, 1961), Chapter 3 and 7.

certain types of phenomena regularly precede others in a temporal sequence, for example, that certain types of attitudes regularly precede certain types of behavior.

Although we cannot rigorously prove causality, we may build a theoretical model of multiple causation which will assist in isolating many variables, which when used together may be more highly predictive of human behavior. Assuming, then, that causal or explanatory relations in social psychology are primarily patterns of association between phenomena and that the designata of the social sciences are multivariate in nature, we must proceed with a theoretical model and research design which reflects these assumptions if a contribution to this field of knowledge is desired.

Glossary of Terms

The purpose of this section of the thesis is to present a preliminary definition of the key terms used here and thus facilitate communication with the reader. These terms are developed further, and related to each other where appropriate, in the following section. The definitions are not necessarily intended to improve upon other definitions found elsewhere in the literature.

Behavior. This concept is narrowly defined as attitudinally-directed action of individuals. It is not broadly-defined

to include all changes in the state of the organism, such as reflexes, spasms, etc. It is used to denote that specific area of behavior often called "action," that is, the goal-directed or attitudinally-directed behavior of the individual.

Differential Behavior. This concept refers to the possible variation among actors in behavior with respect to any object. It implies that alternative behaviors are possible with respect to an object.

Object Behavior. This term is defined as the individual's behavior with respect to the object of an attitude.

Means Behavior. This term is defined as the individual's behavior with respect to something which is only a means to achieving some more distant end, that is, a means to eventually behaving with respect to the object of an attitude.

Orientations to Behavior. This concept refers to the general predisposition within an individual to act in a given manner toward a given object. It does not imply that actual overt behavior will occur. It does imply, however, that this predisposition will determine in part the nature of the overt behavior toward an object, if overt behavior does in fact occur.

Attitude. This term is defined as an affective orientation to an object. The definition refers to attitudes as special instances of orientations to behavior.

Attitude Context. This term refers to the environment or situation, both intrapersonal and extrapersonal, in which an attitude is differentially facilitated in its expression in behavior. It thus includes the social (extrapersonal) context, which may in turn include other individuals, norms, and material objects. It also includes the intrapersonal context, which may in turn include any or all aspects of the personality other than the attitude itself, such as ability, self-control, perception, self-concept, and the like.

Attitude Constellation. This term is defined as a group of separate attitudes which are perceived by the actor as belonging together because they generally are centered around a given activity or object.

Attitude Strength. This concept is defined as the degree of positive affect invested in objects by individuals. Hence, attitude strengths may vary between individuals or groups of individuals.

Independent Attitude. The term is defined as an attitude which tends in any actor to be independent of other

attitudes or attitude constellations, and which may or may not be congruent with them, because it arises out of specific and possibly unique personal experiences of the actor.

Differential Attitudes. This concept refers to attitudes characterized by varying degrees or directions of affect invested in objects by two or more individuals.

Facilitation. This term is defined as the assistance or hinderance which the context of the attitude, or situation, provides to the attitude in its expression in appropriate corresponding behavior. It refers to the difficulty of carrying out the behavior alternatives appropriate to the attitude within the attitude context.

Differential Facilitation. This concept refers to the varying degrees to which the attitude context permits an attitude to be carried into appropriate corresponding behavior. It may be considered the varying degree of difficulty experienced in carrying out the behavior alternatives appropriate to the attitude within the attitude context.

Individual, Actor. These terms are defined as a person in active relation to the physical, social and psychological environment in which he is situated.

Object. This term is defined as anything individuals cognize and define as real. Thus, it may be a tangible thing,

such as a person or a book, or an intangible thing, such as ghosts or angels. In the context of this thesis, then, it refers to things towards which individuals may have attitudes.

Postulate. This term is defined as a general statement of relations assumed to be true on the basis of a logically developed theoretical framework, but without specific proof. It is an unproved statement of relationship. It is consistent with Francis' definition that "a postulate is an assumption which is not tested but is accepted as true."²

Theory. This concept refers to a logical and consistent formulation, supported by various research findings, of seemingly apparent relationships which may be stated in the form of principles or postulates adequately defined. Thus, it is in operational terms a type of policy--in Conant's words, "an economical and fruitful guide to action by scientific investigators."³

²Francis, op. cit., p. 19.

³James B. Conant, Modern Science and Modern Man (New York: Doubleday Anchor Books, 1954), p. 97.

Theoretical Foundation and
Conceptualizations

Attitudes have been a central topic of social psychological study for many years.⁴ Complex methods for measuring them have developed,⁵ their relationship to personality has been examined,⁶ techniques for changing them have been discovered,⁷ and theories in which they are but special instances of more general cognitive phenomena have been proposed.⁸ Vast numbers of empirical studies of attitudes have also been published and it is quite apparent that the concept "attitude" continues to hold a rather prominent place

⁴G. W. Allport, "Attitudes," A Handbook of Social Psychology, ed. C. C. Murchison (Worcester, Mass.: Clark University Press, 1935).

⁵A. L. Edwards, Techniques of Attitude Scale Construction (New York: Appleton-Century-Crofts, Inc., 1957).

⁶T. W. Adorno, et al., The Authoritarian Personality (New York: Harper, 1950); and Milton Rokeach, The Open and Closed Mind (New York: Basic Books, Inc., 1960).

⁷C. I. Hovland, "Changes in Attitude Through Communication," Journal of Abnormal and Social Psychology, Vol. 46, 1951, pp. 424-437; I. L. Janis, et al., "Effects of Preparatory Communication on Reactions to a Subsequent News Event," Public Opinion Quarterly, Vol. 15, 1951, pp. 488-518; and I. Sarnoff, et al., "The Motivational Basis of Attitude Change," Journal of Abnormal and Social Psychology, Vol. 49, 1954, pp. 115-124.

⁸Fritz Heider, The Psychology of Interpersonal Relations (New York: Wiley & Sons, 1958); Leon Festinger, A Theory of Cognitive Dissonance (Evanston, Illinois: Row, Peterson & Co., 1957); and T. Newcomb, Social Psychology (New York: Dryden Press, 1950).

in the contemporary literature of social psychology. Nevertheless, it is at least partially true that the general relations between attitudes, behavior, and the context within which attitudes are carried into behavior, have not been developed. To the knowledge of this writer, only very recently have writers viewed the context within which attitudes must be carried into overt behavior as important. De Fleur and Westie seem to suggest that more intensive investigation of mediating or facilitation variables may explain in part why attitudes are not always consistent with overt action.

The lack of a straight-line relationship between verbal attitudes and overt action behavior more likely may be explained in terms of some sort of social involvement of the subject in a system of social constraints, preventing him from acting (overtly) in the direction of his convictions, or otherwise "legitimizing" certain behavioral patterns.⁹

And more recently in an intensive review of the attitude concept, they contend the following.

There are clearly situational factors such as group, norms, roles, definitions of situations, and other social constraints which materially "mediate" responses in situations involving either verbal behavior or overt action. Such "mediating" social constraints appear to explain lack of correspondence better than such a conception as

⁹M. L. De Fleur and F. R. Westie, "Verbal Attitudes and Overt Acts: An Experiment on the Salience of Attitudes," American Sociological Review, Vol. 23, December, 1958, pp. 667-673.

"true attitudes" conceived of as latent variables.¹⁰

Thus, it seems that there may be much gained by the theoretical development of at least some general postulates concerning the relationship between attitudes and behavior, with some systematic concern for the context within which this relationship exists. It is felt that research arising out of such postulates has a number of virtues which could contribute greatly to present sociological and social psychological thinking, both in regard to attitude theory and to more general theories and their verification.¹¹

In spite of its prominent place in the literature, the concept "attitude" is not defined uniformly by contemporary writers.¹² In view of the many definitions of attitudes which have been formulated over the years, a theoretically formal attempt at the definition of an attitude here would be ill-timed. Definitions are matters of convenience, and they attain great precision only in the advanced stages

¹⁰M. L. De Fleur and F. R. Westie, "Attitude as a Scientific Concept," Social Forces, Vol. 42, October, 1963, pp. 17-31.

¹¹T. Parsons and E. A. Shils, Toward a General Theory of Action (Cambridge, Mass.: Harvard University Press, 1951); Robert Merton, Social Theory and Social Structure (Glencoe, Illinois: The Free Press, 1957); and Leon Festinger, op. cit.

¹²De Fleur and Westie, 1963, op. cit.

of a science. In time, as the science of social psychology advances, greater precision will develop. In the meantime it is felt that we may well use the knowledge we presently have in formulating a definition. The concept "attitude" has often been used in such a way that it has a definite behavior potential associated with it.¹³ Haller indicates that many earlier definitions of attitude stressed the probability that a behavior will occur, or they stressed a "tendency to behave in a certain way."¹⁴ Recently, some social psychologists and others have come to distinguish sharply between overt behavior and orientations to behavior. This approach defines attitudes as special instances of orientations to behavior. Haller sums up the slightly varying forms of the new definitions, such as that of Edwards¹⁵ and Peak,¹⁶ by stating that an attitude is an affective

¹³Allport speaks of "a mental and neural state of readiness." (Allport, op. cit., p. 310). Sherif and Cantril place attitudes "among those components of the psychological makeup of the individual which determine that he shall react not in a passive or neutral way. . . ." (M. Sherif and H. Cantril, "The Psychology of Attitudes," Psychological Review, Vol. 52, 1945, p. 300).

¹⁴A. O. Haller, "Some Principles of Attitudes and Behavior," (unpublished working paper) 1957. It should be mentioned that many of the ideas presented in this chapter originated in, or are based upon, this paper.

¹⁵Edwards, op. cit., p. 2.

¹⁶Helen Peak, "Attitude and Motivation," Nebraska Symposium on Motivation, 1955, ed. M. R. Jones (Lincoln, Nebraska: The University of Nebraska Press, 1955), pp. 149-189.

orientation to an object. This definition is used in the development of the postulates and the subsequent research presented in this thesis.

In terms of behavior, the above definition of attitude implies that action may or may not result from an attitude.¹⁷ Behavior may be narrowly and simply defined here as action of individuals.¹⁸ However, the definition of attitude also implies that alternative behaviors are possible: behaviors following from attitudes will vary between persons, or from time to time in one person according to whether the affect is positive, zero or negative. Since behavior is a central concept in the development of the postulates it must be given definite limitations in research; all behavior alternatives must be isolated.

An attitude, then, may result in behavior toward an object. The object of an attitude can, of course, be a tangible thing such as a person or a chair, but it can be

¹⁷A basic and essential concept implied throughout this thesis is that of the "actor." The concept is broadly defined and used here as a person in active relation to the physical, social and psychological environment in which he is situated.

¹⁸Behavior is not used here in the broad sense of constituting any change in the state of the organism. We are concerned with the specific cases of behavior often called "action," that is, goal-directed or attitudinally-directed behavior of the individual.

more than this. Individuals can have attitudes toward anything they cognize: God, ghosts, demons, angels, Cuba and the like. Anything individuals define as real may be the object of an attitude.¹⁹ If an attitude may result in behavior toward an object, it may also result in behavior toward the means of fulfilling specific object behavior. Since the latter is central to the problem of this research, it will be discussed further in a later section.

The behavioral consequences of an attitude must always occur in situations and thus attitudes are differentially facilitated in their expression in specific behavior by the situations at hand, or the attitude contexts. The attitude context is the social and intrapersonal situation within which attitudes are carried into behavior. The relevant effect of the attitude context is the degree to which it facilitates the expression of the attitude in behavior.

Thus far five basic concepts necessary in the development of the postulates have been presented (attitude, behavior, actor, object, and attitude context). In investigating these concepts more closely, it is necessary to derive additional concepts for the total development of the conceptual framework.

¹⁹Merton, op. cit., p. 421ff.

Since any extensive review of the relevant literature will display multiple variations in the interplay between the terms attitude and value,²⁰ the latter must be briefly discussed here. The concept value is related to our use of the concept attitude in two ways. Value may be used to indicate anything which has positive affect for the person or it may be used to indicate an orientation which is societally-defined and which holds that a certain behavior or object (or series of behaviors or objects) is inherently good. The latter relation is most applicable to the present concern. Attitudes may be assumed to arise out of either basic cultural values²¹ or specific individual and value-establishing experiences. These attitudes arising out of the basic cultural values are likely to be distinguishable by their arrangement within specific areas or phases of the individual's life style. In short, an individual's attitudes are likely to be grouped into attitude constellations

²⁰Henry J. Watts, Methodological Problems in the Measurement of Values (unpublished Ph.D. thesis, Michigan State University, 1962), Chapter III, p. 42ff.

²¹Cultural values are defined here as social products which members of any culture derive from the accumulated action and thought ways of the people responsible for their socialization. They are values based upon a complex of evaluations which constitute a design for living, i.e., as to what is good or bad, proper or improper, valuable or valueless, adequate or inadequate; and thus are accepted and used as criteria of worth. A cultural value is a value reality arising out of a cultural reality.

or attitude complexes.²² On the other hand, those attitudes arising out of specific individual experiences are more likely to stand alone or in a conflicting position with other attitudes or attitude constellations. Thus, for example, a given individual's attitude toward Negroes may be negative due to a specific unpleasant experience(s) with a Negro or group of Negroes. A "stereotyped" attitude may thus be developed and may not necessarily be consistent with other attitudes which the individual holds, at least not initially. It is conceivable that an independent attitude²³ may be opposed to a cultural value and thus be in conflict with all other attitudes arising out of that value. However, if this attitude is inconsistent or incompatible with his

²²These attitude complexes or attitude constellations may be considered similar to what Heider refers to as a "unit formation." A unit formation designates that situation in which "separate entities are perceived as belonging together." (In this context an attitude constellation designates a group of separate attitudes which are perceived as belonging together because they generally are centered around a given activity or object.) Thus, a given individual's attitude toward church, toward school, toward leisure time, etc., may all conceivably be grouped into what might be labeled the person's "religious attitude constellation." See Heider, op. cit., p. 176.

²³An independent attitude is defined here as an attitude which tends in any actor to be independent of other attitudes or attitude constellations, and which may or may not be congruent with them, because it arises out of specific (and possibly unique) personal experiences of the actor.

other attitudes or attitude constellations the individual must attempt to bring his total attitude orientation into balance if he is to maintain a psychological or cognitive balance.²⁴ Thus it seems that major concern should be given to those attitudes arising out of cultural values, and grouped into attitude constellations, when attempting to predict human behavior. However, the importance of independent attitudes in explaining the behavior of deviates in society might well be investigated further.²⁵

It has been noted that an attitude may or may not be acted upon, and that behaviors following from attitudes may vary between persons, or from time to time in one person. Thus one must also be concerned with differential attitudes, or the difference in degree or direction of affect invested in an object. It has also been noted that individuals can have attitudes toward anything they cognize. However,

²⁴Again we may refer to Heider's model; this time to his concept of "balanced states." The concept of balanced state designates a situation in which the perceived units and the perceived sentiments co-exist without stress; there is no pressure toward changes, either in the cognitive organization or in the sentiment. See Heider, op. cit., p. 175. Thus, in this context, the person is likely to bring his independent attitudes and his attitude constellations into a balanced state, or a co-existence without stress.

²⁵It may be found, in this theoretical framework, that some forms of deviant behavior are as psychologically normal as conformist behavior. Merton, op. cit., p. 132.

cognitions may also vary. Objects not cognized by a person at one time may be cognized at another time, and one person may cognize an object that another does not. Variations among individuals, then, are vastly significant in the prediction of behavior. And it follows from the above that differential attitudes exist when two or more people invest an object with a different degree or direction of affect, or when an object is uncognized by one or more individuals but is cognized and invested with affect by one or more others. Thus, for example, college students with different attitudes toward life occupations may be expected to behave in different ways academically and non-academically because of directional or degree differences in the affect they give to the object of their attitudes, occupational goals or aspirations. To assess the importance of a differential attitude in giving rise to a particular behavior alternative, a specification must of course be made of other attitudes out of which the behavior alternative might also possibly have arisen. Unless the differential attitude is the only or most significant attitude logically related to the behavior alternative, the other possible significant attitudes must be assessed more carefully.

It has been noted that different behaviors are possible with respect to any object. These may be called behavior alternatives or differential behavior. For some obvious

examples: one can join a club or not join it, study for an exam or not study for it, drop out of school or continue, go to a meeting or stay away. Behavior alternatives may be much more complex. In education one may attend college for any number of years, from zero to eight or more; or he may earn any one of an infinite variety of grade point averages. Other complex behavior alternatives are possible, depending upon the structure of the object. Whatever the particular possible range of behavior alternatives, predicting or accounting for differential behavior with respect to an object requires the specification of the behavior alternatives. Thus, if one wishes to predict success or failure at college on the basis of attitudes, or any other items, he must determine what behavior is considered successful and what is considered unsuccessful. For example, one would probably say that a high grade point average, persistence in difficult curricula, and completion of a degree are behavior alternatives indicating success in academic work. Dropping out, low grade point average, and various curricula withdrawals would probably number among the unsuccessful behavior alternatives.

The behavioral consequences of attitudes may be viewed in two different ways, as object behavior and means behavior. Object behavior is the individual's behavior with respect to the object of an attitude variable. If, for

example, the variable is attitude toward Negroes, then the object behavior will be actions favorable toward Negroes, unfavorable toward Negroes, or somewhere in between these extremes. Means behavior, on the other hand, denotes behavior toward something which is only a means to achieving some more distant end.²⁶ For example, education may be interpreted as a means for achieving high occupational goals. In such a case those with high occupational goals will tend to gain more education than will those without high occupational goals. Thus, it would seem logical to assume that differential attitudes toward high occupational goals are positively correlated with level of education attained and quality of performance in the educational structure. There is empirical evidence to support this.²⁷ When one focuses on the range of

²⁶Two basic and essential concepts implied here are means and end. Means is defined here as any object, device, procedure, or activity that intervenes between a problem and its final adjustment (end) and which is directed by the actor toward such adjustment. It is thus any object, device, procedure or activity that brings the actor closer to a goal. End is defined as a desired result of striving, a goal or objective. It may also include the purpose implied in a goal or objective. In the Parsonian action frame of reference, the means and ends are intricately related. See Talcott Parsons, The Structure of Social Action (New York: The Free Press of Glencoe, 1949), pp. 43ff.

²⁷A. O. Haller and I.W. Miller, The Occupational Aspiration Scale: Theory, Structure and Correlates (East Lansing, Michigan: M.S.U. Agricultural Experiment Station Technical Bulletin 288, 1963), pp. 39ff.

consequences of one differential attitude, each possible means and its behavior alternatives must be specified. When a supposed means is actually being used as such, then the attitude toward the object will be correlated with behavior toward its means. To predict or account for behavior toward one object, a specification must be made of the variety of more distant objects for which the behavior toward the former is only a possible means, together with the behavior alternatives of each of the more distant objects. The attitudes toward the more distant objects will be correlated with the behaviors toward the specific object to the extent that the latter is in fact viewed as means to the more distant ends. Thus, a student who perceives a college education as a crucial means to a specific occupational goal will have a positive attitude orientation toward his academic performance as well as toward the occupational goal. His study behavior, academic persistence, and grade point average are likely to be favorable in accord with his attitude toward the occupation.

It has been noted that the behavioral consequences of an attitude always occur in situations which may be called attitude contexts. These attitude contexts include the social context, which may in turn include other individuals, norms, and material objects, and the intrapersonal context, which may in turn include any or all aspects of the

personality other than the attitude itself, such as ability, self-control, self-concept, and the like.²⁸ It was also pointed out that the relevant effect of the attitude context is the degree to which it facilitates the expression of the attitude in behavior. Sometimes the nature of the attitude context makes it difficult or impossible for the individual to carry his attitude into behavior, and sometimes the opposite occurs. One individual differs from the other in the degree to which his attitude context permits him to carry his attitude toward an object into behavior. Facilitation is seldom perfect for all. This is an important reason why attitudes are not always acted upon, and why they are often not highly correlated with overt behavior. It is illustrated by the well-known phenomenon in race relations: not all prejudice results in discrimination and not all discriminators are prejudiced.²⁹ Facilitation is the assistance or

²⁸The treatment of both personality and situational variables (or interpersonal and intrapersonal variables) as members of one class, differential facilitation variables, is done because both are here considered to perform the common function of either assisting or hindering the expression of an attitude in overt behavior. The grouping of personality and situational variables under one rubric is generally, however, not common in many theoretical formulations (i.e., symbolic interactionism).

²⁹De Fleur and Westie, 1958, op. cit.; R. T. La Piere, "Attitudes vs. Action," Social Forces, Vol. 13, 1934, pp. 230-237; and B. Kutner, C. Wilkins, and P. Yarrow, "Verbal Attitudes and Overt Behavior Involving Racial Prejudice," Journal of Abnormal and Social Psychology, Vol. 41, 1952, pp. 649-652.

hinderance which the context of the attitude provides to the attitude in its expression in overt behavior. Thus, differential facilitation may be considered as the degree to which the context of the attitude permits its expression in corresponding behavior. Measurements may be made on each of several variables possibly operating as differential facilitators.³⁰ The precise variables having such effects will vary according to the object and its behavior alternatives. Unfortunately, there are no rules which tell us exactly which variables are worthy of consideration. In general, however, they will frequently include such things as the degree of assistance or perceived assistance offered by other people, the ability the person has to perceive the steps needed to carry the attitude into behavior, his command of physical assets, his ability, and his conceptions of that ability, to perform the necessary tasks. Thus, for example, in attempting to predict student success in college one would probably consider significant student reference groups (family, peers, teachers, etc.), the student's perception of the importance of education for attaining his

³⁰We tend normally to think of positive facilitation only in this context. However, the possibility and probability of zero or negative facilitation cannot be ignored. This problem will be discussed further in a later section of the thesis related to measurement.

goals (importance of the means behavior), the student's socioeconomic situation, and his various unique intellectual characteristics, as well as other variables.

It may thus be inferred that there is also differential facilitation by differential attitudes. Attitudes vary in strength or degree of affect. One person's attitude strength may be high, but another's may be zero. Obviously any degree of facilitation, whether low or high, will make little difference in behavior for persons whose attitude strength is very low. Conversely, the degree of facilitation will make a great deal of difference in behavior among those whose attitude strength is high. Thus, a student who has a degree of attitude strength (level of occupational aspiration, in this context) toward a particular occupational goal but who has a low mental ability test pattern will differ in behavior (i.e., grade point average) from the student who has a similar degree of attitude strength but a high mental ability test pattern. The opposite relationship would also be possible.

Facilitation refers to the degree to which the attitude context makes easy or difficult the expression of an attitude toward an object in overt behaviors. Facilitation may be objective or subjective. That is, not only do such objective factors as social pressures and abilities function as facilitators, but such subjective factors as perceptions

of difficulty, self concepts, and other attitudes also function in the same way. Because of the latter fact, facilitation may also have an influence on attitudes. There is experimental evidence which shows that failure reduces levels of aspiration and success raises them.³¹ Assuming attitudes and levels of aspiration are isomorphic, levels of aspiration being an attitude toward the object of the aspiration, then of course level of aspiration will behave like other attitudes. If this is so, then the experience of successfully carrying an attitude into behavior should increase the strength of the attitude, and the experience of unsuccessfully attempting to carry an attitude into behavior should reduce the strength of the attitude.³² Of course, social psychologists are keenly aware that one's experience in a given area is not the only avenue to learning about it. For example, a person also learns from other people, and he may generalize from one area of experience to another. Thus, an important factor for a theoretical formulation is the influence of the facilitation as he has learned about it. Thus, an individual who perceives his parents as giving full

³¹K. Lewin, et al., "Level of Aspiration," in Personality and the Behavior Disorders, ed. J. McV. Hunt (New York: The Ronald Press Co., 1944), Vol. 1, pp. 333-378.

³²A. O. Haller and I. W. Miller, op. cit., p. 31.

support, both moral and financial if necessary, to his occupational goal, and who perceives his ability as adequate to attain it, will have greater attitude strength (higher level of aspiration) than the individual who does not have this high degree of subjective facilitation.

The Problem

The general problem of research arising out of the theoretical and conceptual foundation developed here is that of attempting to predict differential behavior on the basis of differential attitudes. Since the prediction of behavior on the basis of specific factors inevitably involves one in the problem of causation, and since it is well-recognized that causal relationships in the field of social psychology are extremely difficult to establish rigorously, one must focus specific research upon patterns of association between two or more phenomena. One must attempt to isolate a number of probable causal or explanatory variables, which when used together may be more predictive of human behavior. (See Figure 1.)

Assuming that causal relations in social psychology are primarily patterns of association between phenomena and that the designata of the social sciences are multivariate in nature, the general predictive problem is approached by asking the question, "What is the nature of the relationship

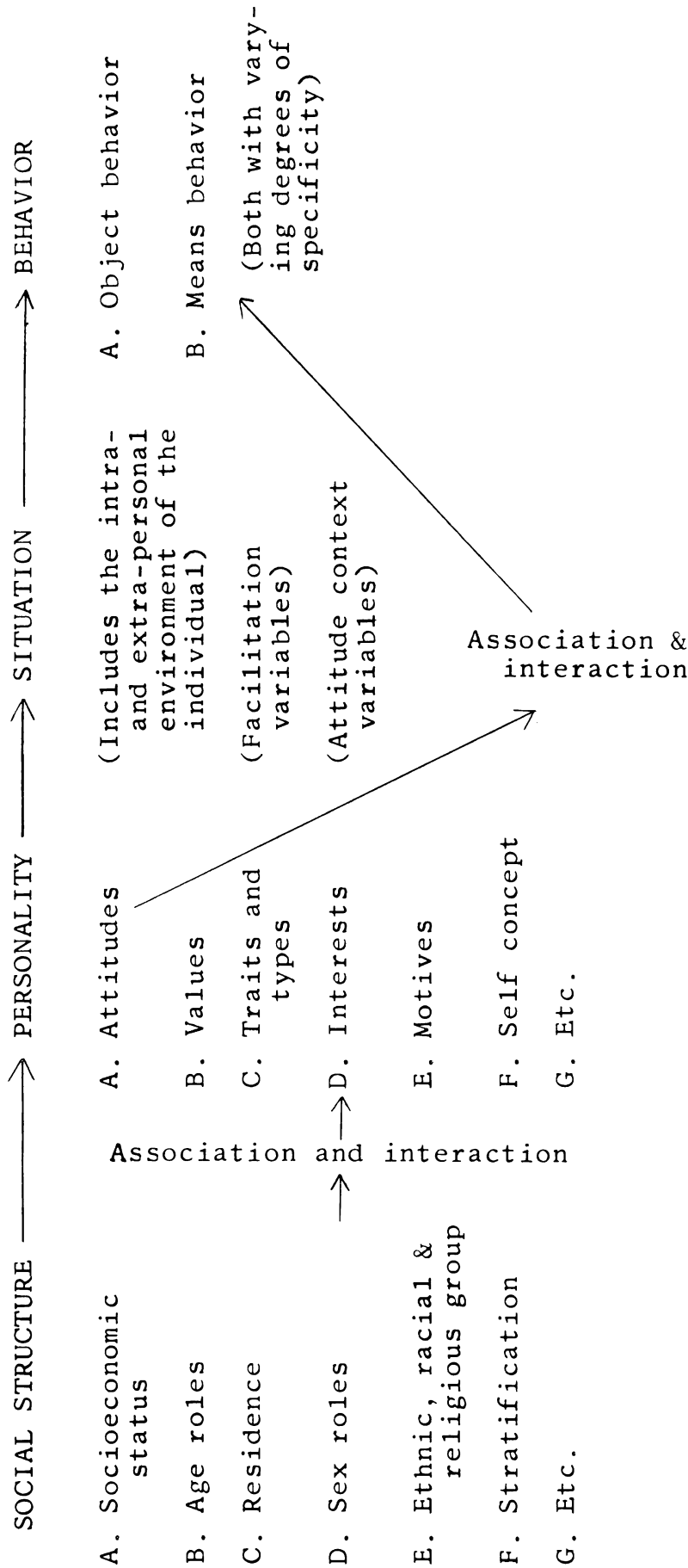


Figure 1. The diagram portrays the general theoretical and conceptual framework within which the research is formulated. The concern is with the prediction of differential means behavior on the basis of differential attitudes within a situational framework. It is assumed that the various social structural variables have all had an impact upon the attitude measured, as well as upon other attitudes and the other personality variables, and that this impact is reflected in the attitude. It is further assumed that the environmental variables (attitude context variables) selected and controlled in this research are some of those most significant in their affect upon behavior.

between attitudes and behavior when certain situational or environmental variables are considered and controlled?"

In general, then, the theoretical position presented here holds that the combined behavioral effects of an attitude variable (in this thesis, level of occupational aspiration) and the facilitational variables appropriate to it constitute an accelerating curve. This means, among other things, that under conditions of (1) relatively low facilitation there will be a relatively low correlation of the attitude variable and behaviors which are expressions of it; (2) relatively high facilitation there will be a relatively high correlation of the attitude variable and behaviors which are expressions of it; (3) relatively low attitude strength there will be a relatively low correlation of the facilitation variable to behaviors which are an expression of the attitude variable; and (4) relatively high attitude strength there will be a relatively high correlation of the facilitation variable and behaviors which are expressions of the attitude variable.

Ordinarily "behavioral expressions of an attitude" are behaviors with respect to the object of the attitude. But this need not necessarily be the case. The concern of this thesis is with behaviors with respect to structures which are means systems for executing the attitude in behavior; and the attitude variable is more specifically a level

of aspiration variable. Even more specifically, the practical focus of the thesis is on level of occupational aspiration and level of behavior in an educational system, the university, which is hypothesized as serving a means function with respect to occupational achievement.

The Variables

An attitude may result in behavior toward an object. In turn, it may also result in behavior toward means of fulfilling specific object behavior. The behavioral consequences of an attitude always occur in situations. More simply, attitudes are differentially facilitated in their expression in behavior by the situation at hand, or the attitude contexts. Thus, the predicting of behavior from attitudes poses three types of research variables, namely: (1) attitude variables, (2) facilitation or attitude context variables, and (3) behavior variables. The specific variables within these categories will be discussed in Chapter III.

The Postulates

The preceding theoretical and conceptual framework offers the following postulates.

1. When individuals differ in their attitudes toward an object, and when the facilitation offered by the attitude context (or any one facilitation variable) is greater than zero, their attitudes will be positively

correlated with their behavior with respect to the object, and with respect to objects viewed as means for promoting their desired behavior toward the object of the attitude.

- a. When the degree of facilitation offered by the attitude context (or any one facilitation variable) is high, the positive correlation will be significantly higher than when the degree of facilitation offered by the attitude context (or any one facilitation variable) is low.

2. When individuals differ in the degree to which their attitude contexts facilitate the expression of an attitude in behavior, and when their attitude strengths are greater than zero, there will be a positive correlation between the facilitation offered by the attitude context (or any one facilitation variable) and their behavior with respect to the object, and with respect to objects viewed as means for promoting their desired behavior toward the object of the attitude.

- a. When the attitude strength is high, the positive correlation will be significantly higher than when the attitude strength is low.

3. When the degree of facilitation offered by the attitude context (or any one facilitation variable) varies among individuals, there will be a positive correlation between the degree of facilitation offered by the attitude context (or any one facilitation variable) and the attitude strength.

These postulates concerning the interrelationship of the variables will serve as the framework from which working hypotheses are derived in the research design. This will be discussed in Chapter III.

CHAPTER III

RESEARCH DESIGN

This chapter of the thesis sets forth in operational terms the specific problem of the research which is intended to test the adequacy of the postulates as stated in Chapter II. The theoretical foundation is extended to the specific problem, the concepts are operationalized, the sample is explained, the variables are discussed, and the hypotheses are presented in testable form.

The Operational Framework

The Attitude Variable

Occupational aspiration is an attitude toward one's future occupational status or, simply, one's future job. Like all attitudes, level of occupational aspiration is a personal orientation to action with respect to a social object.¹ As an orientation to action,² it represents the

¹Haller and Miller, op. cit., pp. 11ff. This work provides a thorough analysis of the level of occupational aspiration concept and its relation to other concepts.

²An orientation to action is here defined as a very general point of view, not necessarily verbalized, which helps to determine the actions or behavior of the actor generally, or toward specific objects.

person's conception of and desire for a future state.³ The social object is the occupational structure with particular occupations ranked from highest to lowest in terms of prestige and socioeconomic status.

It is true in modern American society that job entrance is, in an increasingly large number of cases, dependent upon a certain level of educational attainment. This writer would support the recent contentions of Lenski.

One of the distinctive features of the modern world of work is the growth of large-scale enterprises directed by complex bureaucracies. In these enterprises, which employ an ever-increasing percentage of the American labor force, something resembling a caste system has developed in the last twenty-five to fifty years. Employees of the modern corporation are typically divided into two discrete categories, the salaried employees and the wageworkers, and there is little opportunity for the hourly rated wageworker to rise to the ranks of salaried employees. With the increasing bureaucratization of these organizations, educational prerequisites for salaried positions have been established, so that those with limited education who enter the firm as wageworkers have very little chance of advancing . . . the salaried employees of modern corporations, especially those in managerial positions, are generally recruited from outside the organization, and brought in over the heads of the hourly workers. Even to be considered for such a position a man must usually have had a specified amount of formal education.⁴

³Edwards, op. cit.; and Peak, op. cit.

⁴Gerhard Lenski, The Religious Factor (New York: Doubleday, 1961), pp. 234-235.

Similarly, the observations of Beardslee and O'Dowd.

The relations of higher education and the occupational world have been greatly affected by rapid changes that have taken place in the American occupational structure and the organization of higher education during the first half of this century. . . . It is now becoming difficult for a man without college training, regardless of his intellectual capacities, to rise in the structure of business concerns. A large number of positions ranging from lower management and direct sales to the executive levels are accessible only on presentation of a degree bearing the proper seals and signatures. Similar changes have also taken place in the professions. . . . It is quite clear that college has become the gateway to professional and higher managerial status. This situation is exerting a powerful influence on the orientation of millions of young people approaching college age. Their parents, teachers, guidance counselors, and the mass media are constantly impressing upon them that a college education is indispensable for achieving a respectable and satisfying status in American life.⁵

In short, in many respects the educational system of modern American society serves as a screening and evaluative mechanism for job entrance, or occupational status. Thus satisfactory performance in college becomes an essential means for obtaining many jobs in American society.

⁵David Beardslee and Donald D. O'Dowd, "Students and the Occupational World," Chapter 18 in The American College, ed. N. Sanford (New York: Wiley & Sons, 1962), pp. 59ff.

It is felt that occupational aspiration in a youth of college-entrance age constitutes and reflects a composite of many attitudes and attitude constellations of the individual; it reflects his total attitude orientation. For example, the youth may have an attitude constellation formulated around his religious training and beliefs, another around his peer and familial associations, and possibly another around his residence (rural or urban), and still others. In each case, however, it is highly probable that these attitude constellations will be reflected in the youth's occupational aspiration, since we have noted that the individual must bring his total attitude orientation into balance if he is to maintain a psychological or cognitive balance.⁶ Modern American society tends to encourage the compartmentalization of thoughts and action. However, the findings of psychology and sociology alike make it quite clear that there are limits to which this is possible. Basic traits of personality established during the socialization process persist in influencing action in all institutional contexts and in the development of goals, values, beliefs, and action patterns. Although it is often convenient for the social scientist to think in terms of the

⁶Heider, op. cit., p. 175.

"religious man" or the "economic man" or the "political man," these are at best fruitful abstractions from a more complex reality. In reality it is the "whole man" who selects a church, who purchases a home, and who pulls the voting lever, just as it is also the "whole man" who aspires toward a particular occupation or occupational level.⁷ In view of this complex interrelationship, it is assumed that the occupational aspiration of the individual reflects the effects of all of these aspects of the total person. For example, a youth whose religious attitude constellation dictates that he become a minister, or missionary, or teacher, will aspire occupationally to a level which is consistent with this attitude constellation.

Furthermore, it is contended that occupational status and occupational relationships in modern American society hold an increasingly significant position in the individual's life style. In our society, a person's occupation exerts a considerable influence on his life.⁸

⁷Lenski, op. cit., pp. 309-310.

⁸Emile Durkheim, "The Occupational Group," Sociological Theory, ed. E. F. Borgatta and H. J. Meyer (New York: Alfred Knopf, 1956), pp. 287-289; Theodore Caplow, The Sociology of Work (Minneapolis: University of Minnesota Press, 1954), Chapters 6 and 9; and T. Parsons and R. F. Bales, Family, Socialization and Interaction Process (Glencoe, Illinois: The Free Press, 1955), Chapter 1.

It controls the amount of time he may spend freely. It provides a learning situation which controls his thoughts and emotions. It controls the character of his interaction with other people. It provides the financial base which limits and directs his style of life.⁹

In view of this, occupational membership is also becoming an increasingly important reference group.¹⁰ The increasing mobility, physical and social, of modern American society often makes occupational ties and relationships more significant than residence ties, extended kinship ties, and voluntary associational ties.¹¹ Consequently, a greater proportion of a person's life style is formulated around and directed by his occupational status and relationships. Thus, it is logical to assume that if aspirations have anything to do with behavior, those relating to occupations would be among the most significant.

In view of the above, it is contended that the most significant attitude constellation in predicting or explaining educational behavior in modern American society is that centering around occupations. Thus the occupational aspirations in youths of college age should be of importance in predicting their behavior toward both the means of attaining

⁹Haller and Miller, op. cit., p. 1.

¹⁰For further discussion of the reference group concept, see Merton, op. cit., p. 225ff.

¹¹See Beardslee and O'Dowd, op. cit., pp. 599-600.

their occupational goals--education, and the goals themselves--occupation. Consequently, occupational aspiration should be a significant predictive factor in determining the means behavior, that is, performance in college. The level of occupational aspiration is an attitudinal variable which may determine a student's persistence and performance in college. Thus, level of occupational aspiration can be used as a differential attitude scale.

The Facilitation Variables

The model employed in this research is that of an individual carrying his attitudes into behavior within an environment; social and psychological as well as physical. This social, psychological and physical environment is either favorable or unfavorable (or some degree between the two theoretical extremes) in regard to the facilitation it provides to the individual in carrying his attitudes into behavior. These environmental or situational conditions are considered facilitation variables, since they facilitate differentially the carrying of attitudes into behaviors. In this study the concern is with the effects of an attitude toward a certain object on behaviors regarding another

object, the latter being a means structure for the former.¹²
(See Figure 2.)

The number of facilitation variables may well be considered countless, however, it is felt that some of the

¹²Facilitation variables as defined in this theoretical framework are not isomorphic with means variables or means structures in the system. Thus, the concept facilitation as defined here deviates from some other related definitions in the behavioral science literature, for example, the definition of Loomis. Loomis defines facility as "a means used within the system to attain the members' ends." (C. P. and Z. K. Loomis, Modern Social Theories (Princeton, New Jersey: D. Van Nostrand Company, 1961), p. 15.) Facilitation variables as used in the present theoretical framework are viewed as conditions which either assist or hinder the actor to some degree in enacting an attitude in overt behavior. On the other hand, a means variable or means structure is, generally speaking, a societally-defined or system-defined means or route to some more distant end. Since it is societally-defined, all or most of the actors in the system view the means structure as being in a means-ends relationship with a more distant object. This, however, does not preclude differences in actors as to what is individually-defined as a means variable or a means structure. Kingsley Davis touches on the individually-defined means issue when he states, "What is a means for one actor may be a condition for another." (Kingsley Davis, Human Society (New York: The MacMillan Company, 1949), p. 126.) Thus, in the present theoretical framework, a means variable or means structure is societally-defined as such and therefore is viewed as such by all or most of the actors in the system; a facilitation variable is a condition either assisting or hindering the actor in his pursuit of a goal. A facilitation variable may be perceived as a means variable by individual actors even if these variables are not societally-defined as such. However, only when a variable is societally-defined as a means structure, that is, defined as being in a specific means-ends relationship with some goal, can it be considered a means structure by the researcher. Therefore, the means structures vary from one system to another, or in one system over time; and thus they must be empirically determined for the system under investigation.

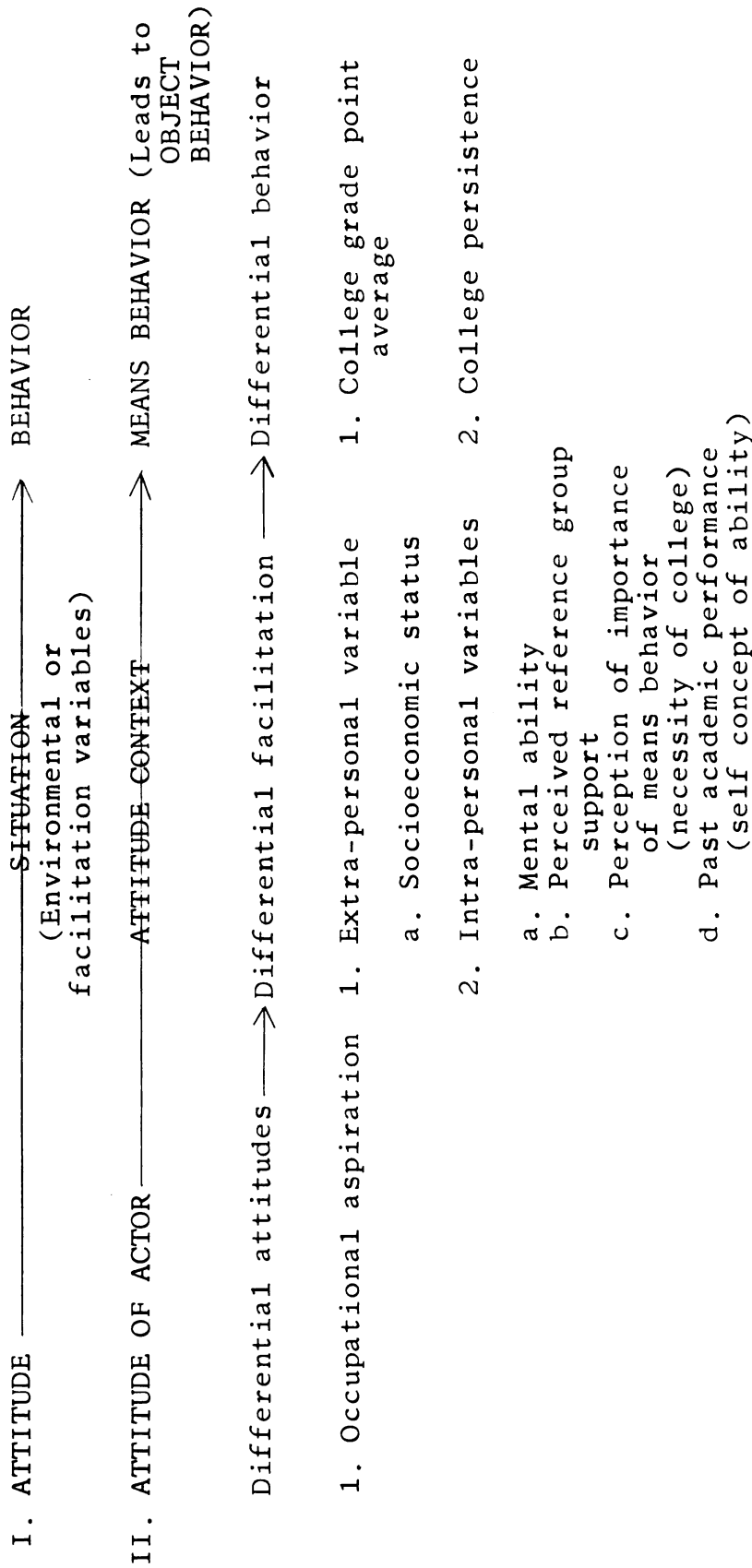


Figure 2. The diagram portrays the basic theoretical and conceptual framework within which the research is formulated. It constitutes a part of the larger framework presented in Figure 1 (page 33), and is that part upon which the present research focuses.

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most significant and universal of these can be isolated and controlled. We shall discuss in order the importance of several facilitation variables which have been measured in the present research: (1) perceived reference group support, (2) socioeconomic status of the family, (3) mental ability, (4) perception of the degree of importance of the means behavior, and (5) past academic performance.

Perceived Reference Group Support

The importance of reference groups and reference individuals in influencing an individual's behavior is well-documented.¹³ There is also considerable evidence of their influence upon a person's attitudes.¹⁴ It is contended here that reference groups and reference individuals are also important in the facilitation they provide to the actor in carrying an attitude toward an object into appropriate corresponding behavior. A recent study by De Fleur and Westie tends to support this contention.

¹³S. A. Stouffer, et al., The American Soldier, Vol. I (Princeton, New Jersey: Princeton University Press, 1949); and D. W. Chapman and J. Volkmann, "A Social Determinant of the Level of Aspiration," Readings in Social Psychology, ed. E. E. Maccoby, T. M. Newcomb, and E. L. Hartley (New York: Henry Holt, 1958), pp. 281-290.

¹⁴S. A. Stouffer, et al., op. cit.; and T. M. Newcomb, "Attitude Development as a Function of Reference Groups: The Bennington Study," Readings in Social Psychology, ed. E. E. Maccoby, T. M. Newcomb, and E. L. Hartley (New York: Henry Holt, 1958), pp. 265-275.

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In studying attitude salience, then, it may be predicted that individuals faced with the necessity of making an action decision with regard to Negroes will partially determine the direction of this action by consideration of the norms and policies of social groups which are meaningful to them.

In concluding their study of the relationship between verbal attitudes concerning Negroes and overt action behavior toward them, they report the following.

In summary, verbally expressed attitudes were significantly related to the direction of the action taken. . . . On the other hand, a third of the subjects behaved in a manner quite inconsistent with that which might be expected from their verbal attitudes. Whatever the direction of this action, however, it was a peer-directed decision for the majority, with the subjects making significant use of their beliefs concerning possible approval or disapproval of reference groups as guides for behavior.¹⁵

On the basis of the experimental evidence, it seems imperative that we investigate the reference group variable in this research.

It should be noted that in many segments of modern American society the importance of occupational choice, and consequently the occupational aspiration of the young, represents a change from the traditional in both means and object behavior. It may mean that the aspiration toward a given occupation or occupational level is almost unheard of, or at least, unknown, in the extended kin group, or possibly

¹⁵De Fleur and Westie, 1958, op. cit., pp. 668 and 673.

even the residence group or the religious group.¹⁶ It may mean the necessity of means behavior which is unusual from the point of view of these groups--a college education, for example. A high level of occupational aspiration may usually not be realized without the support or perceived support of crucial reference groups, or without severing one's relations with some of these groups or at least without acting in spite of their non-support. In any event, it seems logical to assume that many young people may meet such obstacles when aspiring to various high occupational levels. Since this is probably evident to most young people in such situations, it is expected that perceived reference group support may be a determinant variable in whether or not the individual decides to face these obstacles and, if so, whether or not he is successful in so doing. Furthermore, the college student does not live in isolation in a simple set of primary groups. The student participates in formal and informal college activities, and each student remains in contact to varying degrees with certain outside reference groups and individuals such as his own family, his hometown or high school gang, and perhaps his high school counselor or favorite teacher. There is evidence, for example, that parental interest as perceived by the student is of great

¹⁶Beardslee and O'Dowd, op. cit., p. 601.

importance in connection with the decision to remain in college or to leave.¹⁷ It may be further suggested that the perception by the student of the degree of parental interest influences not only college attendance but also scholastic performance both at the college level and at the lower levels.¹⁸ Finally, since a reference group is generally understood to be a group with which a person identifies to the extent of adopting at least some of the values and attitudes and norms of the group, there is little doubt concerning the theoretical importance of measuring and controlling reference group and reference individual support and using it as a facilitation variable.

Socioeconomic Status

It is a generally accepted fact in the sociological literature that socioeconomic status is significantly related to the attitudes of the members of the various levels, however defined, and that there is differential accessibility to certain cherished goals within the social system among these levels.¹⁹ Thus, the importance of investigating

¹⁷W. L. Slocum, "Social Factors Involved in Academic Mortality," College and University, Vol. 32, Fall 1956, p. 60.

¹⁸Ibid., p. 60.

¹⁹For a review of some of the literature, see Robin M. Williams, Jr., American Society (New York: Alfred A. Knopf, 1960, pp. 106ff.

socioeconomic status as a differential facilitator in the carrying of attitudes into appropriate corresponding behavior seems obvious. Socioeconomic status has been investigated as to its role in determining the success or failure of students in college, however, with varying results. Many investigators have found socioeconomic background of no significant importance²⁰ while others, such as Koelsche²¹ and Summerskill,²² et al., have found it to be significant. Koelsche found that dropouts at Indiana University tended to come from families with relatively high socioeconomic status. Summerskill, on the other hand, found that dropouts at Cornell University tended to come from families with comparatively low socioeconomic status. In any event, it is felt that previous results warrant the isolating and controlling of this variable in the present study. It seems safe and

²⁰See P. F. Munger, Factors Related to Persistence in College of Students Who Were Admitted to the University of Toledo from the Lower Third of Their Respective High School Classes, unpublished Ph.D. thesis, Ann Arbor, Michigan: University of Michigan, 1954. Also see L. M. Snyder, "Why Do They Leave?" Journal of Higher Education, Vol. II, 1940, pp. 26-32.

²¹C. L. Koelsche, A Study of the Student Drop-Out Problem at Indiana University, unpublished Ed.D. thesis, Bloomington, Indiana: Indiana University, 1953.

²²J. Summerskill and C. D. Darling, "A Progress Report on the Student Stability Studies," Student Medicine, Vol. 3, 1955, pp. 85-91.

logical to assume that a high socioeconomic status would facilitate a student's performance in college since there would very likely be little financial concern or time-consuming part-time employment necessary. On the other hand, it also seems safe and logical to assume that in many cases a high socioeconomic status may provide the means for the student to put other concerns and activities above academic performance in his situational value hierarchy.

Mental Ability

Mental ability, scholastic aptitude or intellectual capacity is a facilitation variable which has often been investigated and related to academic success or failure in college, particularly as a major predictive factor.²³ The need for varying degrees of this phenomenon in carrying out certain levels of educational and occupational goals and aspirations is apparent and need not be pursued here. However, it should also be pointed out that there is evidence to show that grades are not always found to be highly correlated with mental ability.²⁴ A review of the vast literature related to the control of this variable suggests to

²³For a review and bibliography of many of these studies, see Nevitt Sanford (ed.), op. cit., Chapter 19 and 20.

²⁴Slocum, op. cit., p. 55.

this writer that mental ability is only one facilitating variable among many, rather than a sole determinant of performance as is so often misinterpreted.

Perception of Importance of Means
Behavior (Necessity of College)

The perception of the degree of importance of the means behavior (college performance) to the social object (occupational hierarchy) is also felt to be a significant facilitating variable in the theoretical framework used here. This perception is differential in that many groups (as well as individuals) will differ in respect to ideas concerning the necessity of, for example, a college education for certain jobs. The findings of Lipset and Bendix show, for example, that the importance of a college education for the achievement of a high status initial job is greater for sons of lower-status families than for sons of higher-status families.²⁵ There seem to be several paths to high occupational achievement for the high-status youth but only one for the low-status youth. Generally speaking, if a group views one behavior as necessary to the completion of another, and if the group views the latter as important for its membership or a particular member, the group will attempt to instill the means behavior attitude as well as the object

²⁵ S. M. Lipset and R. Bendix, Social Mobility in Industrial Society (Berkeley, California: University of California Press, 1959).

behavior attitude. In modern American society high educational achievement is necessary for high levels of occupational achievement or status, and thus the person who perceives this relationship as essential will have a higher probability of success in college than the person who does not, assuming other facilitating variables to be equal. On this basis it was felt that this variable should be measured and controlled.

Past Academic Performance (Self
Concept of Ability)

Differential past academic performance seems important as a facilitating variable in light of general research and literature regarding the importance of the school in the socialization process of the individual. It is contended here that school achievement (that is, grades and grade point averages) is a significant factor in the development of a self concept of ability for the student in the system which, in turn, facilitates him in performing the tasks required. Furthermore, it seems logical to argue on this basis that by the time a student is at college-entrance age, his past academic performance has played a major role in the development of his self concept of ability to perform, or to be successful in the means behavior (that is, college performance). It should then facilitate individuals differentially in the pursuit of the required task, in this case

satisfactory academic performance and eventual attainment of the occupational aspiration. Thus, it is felt that past academic performance may be used as an indirect measure of self concept of ability, recognizing that it is also partially an objective measure of ability. The recent research of Brookover and colleagues with seventh grade students provides some evidence to support the above argument and to legitimize the use of this variable as a type of indirect self concept measure.²⁶ Brookover finds that high achieving students have significantly higher self concept of ability scores than low achieving students with comparable measured intelligence ranges. However, it is even more interesting from the standpoint of our present contentions to note that the correlation coefficient between the self concept of ability score and present grade point average of .57 (for seventh grade boys) is reduced considerably to .28 when the effect of past academic performance is partialled out. This would suggest that past academic performance is at least one of the major factors contributing to the self concept of ability as measured by Brookover. It is on the basis of the

²⁶Wilbur B. Brookover, Ann Paterson, and Shailer Thomas, Self-Concept of Ability and School Achievement (final report of Cooperative Research Project no. 845, mimeographed; East Lansing, Michigan: College of Education Office of Research and Publications, Michigan State University, 1962), 104 pp.

above arguments, then, that this variable was controlled as an indirect self concept of ability measure, and that it is expected to be an important differential facilitator of academic performance. Finally, then, the fact that this variable is both a self concept of ability measure and a type of objective measure of ability suggests that it may play a crucial role in the adjustment of aspiration in individuals. That is, the individual probably adjusts, for the most part, his level of aspiration to be consistent with his level of ability and self concept of ability.

The Behavioral Variable

The principle concern in this research model is the differential means behavior of the actor as it results from his attitudes under various conditions of facilitation offered by his environment. The rationale for relating the means behavior (academic performance in college) with the attitude (occupational aspiration) has been presented. Operationally, the major differential means behavior measure, and thus the dependent variable, is grade point average. Thus the basic means behavior alternatives may be considered high and low grade point averages. Dropout and non-dropout will also be considered as behavioral alternatives. Of course, the grade point averages by their nature will constitute numerous behavior alternatives ranging from very

high to very low, and for this reason are used as the major measure of differential means behavior.

The selection and use of the above-discussed variables is guided by the assumption, discussed in Chapter II, that the prediction of behavior is multivariate in nature and that research designs which follow from an attempt to predict behavior must reflect this nature insofar as possible.

Measurement

Measurement lies at the very heart of all research. And particularly in social psychological research, measurement along with conceptualization may be considered the two most critical facets of any empirical problem. The interrelationship of the two are emphasized by De Fleur and Westie when they state that, "In modern behavioral science, concept formation and measurement are inseparable problems, problems which in fact become identical under a strictly operational point of view."²⁷ Thus, the adequate description of instruments and techniques used to measure all of the variables discussed earlier will be presented so that the interested reader may determine for himself the adequacy of the methods employed.

²⁷De Fleur and Westie, 1963, op. cit., p. 28.

The Attitude Variable

The attitude variable, level of occupational aspiration, is measured by use of the Occupational Aspiration Scale (OAS) which was developed and constructed by Dr. A. O. Haller.²⁸ The purpose of an index of occupational aspiration, such as OAS, is to measure the level of occupational aspiration of individuals. It is thus designed to elicit from the respondent his expectations, goals, desires, and preferences concerning the statuses and roles he projectively attributes to himself as he contemplates his future in the occupational work. The Occupational Aspiration Scale is an eight item multiple-choice instrument, oriented around eighty occupational titles. The alternatives for each item consist of ten occupational titles drawn from among the ninety occupations ranked by the NORC (1947) study of the prestige of occupations.²⁹ The total possible score for all eight items ranges from zero to seventy-two. This score is used to measure the individual's general level of occupational aspiration. It is designed, not as an absolute measure of level of occupational aspiration, but only as a

²⁸A. O. Haller, Occupational Aspiration Scale (East Lansing, Michigan: Michigan State University, 1957).

²⁹National Opinion Research Center, "Jobs and Occupation: A Popular Evaluation," Opinion News, Vol. 9, 1947, pp. 3-13.

measure of differential level of occupational aspiration. The OAS is a self-descriptive instrument and is easily administered in a group testing situation.³⁰ The reliability of the instrument has been tested by several independent analyses and these exhibit substantial agreement with respect to reliability coefficients and standard error of measurement. Haller and Miller indicate that, "It seems reasonably safe to conclude that the reliability of the OAS is about .80 and that the standard error of measurement is close to 5.30."³¹ It is concluded on this basis that the instrument is adequately reliable to be used in this research.³² The validity of the instrument has also been investigated and the findings are encouraging.³³ However, since the best method of measuring the validity of a device is to measure its correlation with the behavior it is

³⁰For more detailed description of the instrument, see Haller and Miller, op. cit.

³¹Ibid, pp. 78-79.

³²Previous use and analysis of the Occupational Aspiration Scale has been limited to boy respondents. Thus, its applicability to girl respondents is not known with certainty. The present research suggests, however, that there is no appreciable difference. A correlation coefficient of .197 between level of occupational aspiration and college performance for girls compared with a correlation coefficient of .137 for boys in this study. The mean score on the Occupational Aspiration Scale for girls was 47.5 as compared with 48.2 for boys. The mean college performance (grade point average) for girls was 2.32 as compared with 2.20 for boys.

³³Haller and Miller, op. cit., pp. 79f.

supposed to predict, the best evidence will not be available until the first subjects to take the OAS have stabilized themselves in their life's occupations. In the meantime, indirect methods, with promising but not definitive results, have been used to assess its validity.

It is thus concluded that the Occupational Aspiration Scale is a reliable and approximately valid instrument. For this reason its use as an index of occupational aspiration, the attitude variable, appears to be justified.

The Facilitation Variables

The facilitation variables are measured in a number of ways.

Perceived Reference Group Support

The perceived reference group support variable is divided into four separate sub-measures which include (1) parental support, (2) counselor support, (3) teacher support, and (4) peer support. These items were selected on the assumption that they are most crucial for the new college-bound student and that perceived support or non-support from these "significant others" is significant. The degree of perceived support from these reference groups was measured by the items reviewed and explained here.

Perceived parental support was measured by the following item.

In regard to my plans to attend college, my PARENTS
 () definitely expected me to go to college
 () sort of expected me to go to college
 () did not expect me to go to college.

The wording of the alternative answers around "expectation" was done after some consideration and debate with respect to the alternative use of "encouragement" in its place. The final decision to use "expectation," considering it to be a better measure of perceived support, was based upon the contention that the two terms refer to quite different phenomena. It was felt that the student actually perceives as support the expectations of parents and not necessarily the degree of encouragement they express in regard to college attendance. The greatest differential in this respect, and thus the critical issue here, was expected by different categories of socioeconomic status of the family. It was felt that in higher socioeconomic status families encouragement may never be verbally expressed but the expectation to attend college is extremely real to all concerned, including the student. On the other hand, it was felt that in lower socioeconomic status families encouragement may be freely given and verbally expressed, but the expectation to really have the student attend college may be almost nonexistent. It was concluded on the basis of this rationale that the student would perceive as support the actual expectation of the parents rather than the expressed encouragement.

To test the rationale of the parental support item discussed above, a second item using the term encouragement was constructed.

In regard to my plans to attend college, my PARENTS
 () strongly encouraged me to go to college
 () gave me some encouragement to go to college
 () gave me no encouragement to go to college.

Chi-square tests of significance between socioeconomic status and degrees of encouragement and expectation tend to at least partially support the above rationale. (See Appendix J.) It is found that although a considerably higher percentage of high socioeconomic status students have high rather than low parental expectation and encouragement, this is not the case with low socioeconomic status students. In the case of low socioeconomic status students, only a slightly higher percentage have high rather than low parental expectation but a considerable difference is observed with regard to parental encouragement. Thus it may be tentatively concluded, at least, that parents of low socioeconomic status students often manifestly or verbally encourage their children to attend college but do not as often actually expect them to do so. This, of course, may be due to obstacles which parents of low socioeconomic status students perceive for their children in respect to college attendance, such as financial, adjustment, motivational and similar problems.

Perceived counselor support to attend college was measured by the following item.

In regard to my plans to attend college, my COUNSELOR (if any) thought that I should
 ☐ definitely go to college
 ☐ go to college if I could possibly make it
 ☐ not go to college.

This item, obviously, is designed to measure the perceived support of the high school counselor for the student's plan to attend college. It is felt that the high school counselor is a significant reference individual to the student in terms of establishing college plans. In many cases, it is suspected that the counselor may very possibly make the decision for the student--especially a negative decision.

Perceived teacher support to attend college was measured by the following item.

In regard to my plans to attend college, the TEACHER(S) whose opinion(s) I respected the most thought I should
 ☐ definitely go to college
 ☐ go to college if I could possibly make it
 ☐ not go to college.

Teachers may also be significant reference individuals, or possibly may be conceived as a group. Especially in the absence of a counselor, the teacher in high school may take on an unusually significant role. Even where a counselor is assigned to the student, however, at least certain teachers are felt to be important as reference individuals. The

phrase "whose opinion(s) I respected the most" was placed in the item to insure that teachers referred to by the student were significant reference individuals.

Perceived peer support to attend college was measured by the following item.

The GROUP of kids I knew the best in high school
thought that kids like themselves should
 () definitely go to college
 () go to college if they could possibly make it
 () go to work (or get married).

Peers in high school were felt to be perceived as a group by the student and considered to be a significant reference group in regard to establishing college plans. The item is thus constructed to measure the perceived support of a student by his significant peers. The phrase "group of kids I knew the best" was utilized to insure that students referred to significant peers, that is, the important reference group of peer individuals.

The sub-scores on each of the four perceived reference group items were additively combined to establish a general perceived reference group index upon which individuals were placed with respect to degree of perceived reference group support. (See Appendix F.) Thus, the total scores were considered as the degree of perceived reference group support for individuals in the sample. The reliability of this index is estimated by the use of the test-retest

technique which provides a reliability coefficient of .76.³⁴ Satisfactory criteria for estimating the validity of the index are not available, however it is felt that the index does not violate the logical test of validity.³⁵ Its predictive or pragmatic validity may also be partially estimated from the present research.

Socioeconomic Status

The socioeconomic status of the family variable was measured on the basis of the father's (head of household) occupational status. A socioeconomic index is used to measure the relative socioeconomic position which an individual occupies in the social structure. Since the status was derived in this study from the descriptive title of the

³⁴The test-retest reliability coefficient was computed by the product-moment method. Equivalent forms of the "About My College Plans" questionnaire (see Appendix C) were administered to a sample of 43 freshmen students taking a course in political science (PLS 100) during the Spring term of 1964. A three week interval occurred between the two administrations. The equation used in calculation is:

$$r_{yz} = \frac{n \sum yz - \sum y \sum z}{[n \sum (y)^2 - (\sum y)^2][n \sum (z)^2 - (\sum z)^2]}$$

where y = score of first administration
z = score of second administration.

³⁵Its application appears to be logically sound within the theoretical framework used here. See Calvin F. Schmid, "Scaling Techniques in Sociological Research," Chapter 14, in Pauline Young, Scientific Social Surveys and Research (New York: Prentice-Hall, Inc., 1949), p. 376.

father's occupation, the Duncan "Socioeconomic Index for All Occupations" was used.³⁶ The Duncan Index is particularly well-adapted to deriving a measure of socioeconomic status for individuals from documents listing only occupations, and excluding more detailed information about income and education. It makes possible the converting of occupation into an index of socioeconomic status, this also being the original motivation for the construction of the instrument. This index, developed by Otis Dudley Duncan on the basis of 1950 census occupations, is the most careful and elaborate classification of occupations by socioeconomic rank known to the writer and therefore was felt to be most applicable to the present study. Thus, the Duncan Index was used to differentiate among the members of the sample in terms of socioeconomic status.

The Duncan Index is constructed from two factors, education and income. The suitability of these factors for the construction of the index is argued elsewhere and may be reviewed directly by the interested reader.³⁷ The case for the validity and stability of the index is also presented by

³⁶For a detailed description of this instrument, see Otis Dudley Duncan, "A Socioeconomic Index for All Occupations," Chapter VI in Albert J. Reiss, Jr., Occupations and Social Status (New York: The Free Press of Glencoe, 1961), pp. 109ff (also see Chapter VII).

³⁷Ibid., pp. 114ff.

Duncan and need not be repeated here.³⁸ All occupations were scored by the writer thus insuring maximum reliability of scoring procedures. It may be concluded on the basis of the characteristics of the index, and the data available, that it is particularly suitable for use in the present study.

Mental Ability

The measure of mental ability used in the research is the College Qualification Tests (CQT), Form B, 1956.³⁹ Three sub-tests provide a total score which constitutes a measure of general academic aptitude or mental ability for the individuals taking the test. The sub-tests consist of a verbal category which is a measure of vocabulary and reflects verbal abilities which are most significant in social sciences, literature, etc.; an information category which is a measure of general information in the social and natural sciences; and a numerical category which is a measure of abilities involved in quantitative thinking. Since the CQT is primarily a power test (students who have ability to answer the test items have the necessary time to do so), its

³⁸Ibid., pp. 124-125, 151-154.

³⁹For detailed information concerning these tests, see G. K. Bennett, M. G. Bennett, W. L. Wallace, and A. G. Wesman, College Qualification Tests Manual (New York: The Psychological Corporation, 1961, revised), 61 pp.

reliability may properly be estimated through coefficients of internal consistency. The reliability coefficients of this type generally exceed .90 and the standard error of measurement is about 5.50.⁴⁰ Since the tests were developed primarily to serve as predictors of success in college performance, tests of its validity are best measured by its utility in predicting success of students in college, the criterion being grade point average. The overall picture of the validity of the CQT is very favorable. The majority of the coefficients found in the prediction of grade point average strongly indicate that the CQT is highly predictive of grade point average and college success. Validity coefficients range generally between .50 and .70 for various four-year institutions.⁴¹ It must be remembered that the validity coefficients are likely to be larger for institutions which represent wide ranges of academic ability than for those which are more homogeneous in this respect. Also, the coefficients are likely to be higher if assigned grades are reliable, well-distributed among students, and based on actual achievement. If grades are unreliable it is futile to hope that any test, however well prepared, will succeed in forecasting those grades.

⁴⁰Ibid., pp. 46-47 (Tables 31 and 32).

⁴¹Ibid., pp. 52-53 (Table 35).

It is concluded that the CQT is a reliable and valid instrument, and its use in this research is adequately justified.

Perception of Importance of Means
Behavior (Necessity of College)

The perception of the degree of importance of means behavior (college performance) variable is measured by just one item. The item permits the student to indicate how important a college education (means behavior) is for obtaining the occupational aspiration (object behavior) as he sees it. The range extends from "absolutely necessary" to "not important at all."

To obtain the kind of job I wish to have in later life, a college education is
 ☐ absolutely necessary
 ☐ very important
 ☐ quite important
 ☐ of little importance
 ☐ not important at all.

This one item is used to measure the degree to which the student perceives the means behavior as essential for his job aspiration. The answer is scored and tabulated into a numerical value and this is then considered the perception of necessity of means behavior (college performance). The reliability of this item was estimated by use of the test-retest technique which provides a reliability coefficient

of .63.⁴² The validity of the item cannot be estimated, however, the logical test of validity seems justified in this operational framework.⁴³

Past Academic Performance (Self
Concept of Ability)

The student's high school academic average is the item used in the measurement of the past academic performance variable. All high school averages were computed on the basis of the system used at Michigan State University. Students from high schools using other systems of grading were separated out and their averages were converted and re-computed on the basis of the common system. This method constituted the construction of an index with theoretical limits of 0 and 400 at the two extremes of the continuum. This index was used as the past academic performance (self concept

⁴²The test-retest reliability coefficient was computed by the product-moment method. Equivalent forms of the "About My College Plans" questionnaire (see Appendix C) were administered to a sample of 43 freshmen students taking a course in political science (PLS 100) during the Spring term of 1964. A three week interval occurred between the two administrations. The equation used in calculation is:

$$r_{yz} = \frac{n \sum yz - \sum y \sum z}{[n \sum (y)^2 - (\sum y)^2][n \sum (z)^2 - (\sum z)^2]}$$

where y = score of first administration
z = score of second administration.

⁴³See Schmid, op. cit., p. 376.

of ability) measure and all individuals in the sample were thus placed and scored with respect to this variable. The reliability of the grades given in high school must be assumed to be adequate. Since past performance or self concept of ability indices are generally used as predictors of future performance, the predictive validity of the index used here may be estimated from the present research. The correlation coefficient of this index with college performance is .57.

General Facilitation

A general facilitation index was additively constructed by utilizing the five selected variables discussed above. (See Appendix E.) This relatively crude index was also used in the analysis of data as a type of summed measure of facilitation.

It should be noted that all of the facilitation indices described above are designed to measure the degree of facilitation in the positive direction only. Thus each student in the sample is positively facilitated to some degree (although this may be very low) to carry his attitude into behavior, or to carry his level of occupational aspiration into satisfactory and successful academic performance (means behavior) which will, in turn, make it possible for him to achieve his occupational aspiration (object behavior).

The nature of the present research, or more specifically of the facilitation indices, assumes then some degree of positive facilitation for all. There is theoretically, however, no reason to believe that one cannot be negatively facilitated (positively impeded) or, at least, not facilitated at all in this respect (zero facilitation). It would appear entirely logical, although possibly somewhat improbable or infrequent, that this might be the case. For example, it is possible that all one's significant reference groups might discourage his going to college. This would, in fact, be a case of negative facilitation. The theoretical problem is not, however, restricted to indices which are used as measures of facilitation variables as in the framework guiding this research. For example, all level of aspiration measures known to the writer are so constructed that the respondent obtains some score or value above some theoretical zero point, which is then interpreted as a positive index. Yet it does not seem empirically impossible for individuals to have no degree (zero) of aspiration toward given objects, or even negative aspiration toward them. Certainly this is frequently the case concerning many attitude variables other than level of aspiration. Although resolution of the problem is beyond the scope of this research, it is felt that it is significant enough from a theoretical perspective to be investigated further. It appears to constitute a major

theoretical problem of measurement in the social sciences, particularly social psychology.

The Behavioral Variable

The major behavioral variable (and in this theoretical framework the dependent variable), college performance, is measured by the official University cumulative grade point average for students of the sample. The student's grade point average is selected as the measure because it provides the widest selection of behavior alternatives and is a good measure of differential performance (behavior) in college. Grade point average in college is the basic criterion used by professors, administrators and students to evaluate a student's academic performance. Hence, it is fairly fundamental as a behavior variable in college. Although the merits of grade point average as a measure of performance quality are often debated in academic circles and its use for this purpose often criticized, it tends to maintain its position as a good measure. There is no empirical evidence known to the writer which can refute this position. In any event, it is the best measure available to the researcher in this field and no better one has been suggested or proposed.

The cumulative grade point average used for the sample is that on the student's official University record

during his seventh term at Michigan State University, which would normally be the first term of the junior year. For those students who have dropped out of school the official University cumulative grade point average at the time of dropout was used. This procedure was used primarily on the rationale that most students who are performing unsatisfactorily in their academic work by the seventh term have dropped out of college voluntarily or have been compelled to leave the University. (Since students at Michigan State University must attain a 2.00 or better average to enter an upper degree-granting college at the junior level, most of the attrition has taken place by this time.)

Dropout from college was also used in further analysis as a behavioral alternative to remaining in college.⁴⁴ This type of analysis calls for a dichotomous measure of success-failure in the total means behavior. It provides a self-evident index of apparent failure (which may be more palatable to those who seriously question the ultimate significance of the differences in grade point averages) and provides insights into the differences between these two oft-discussed groups.

⁴⁴A "dropout" was operationally defined as a student who was not enrolled in the University during the Fall term, 1962, which would normally be the seventh term or the beginning of the junior year. Students who had left the University prior to this time, but who returned, were not defined as dropouts.

The Hypotheses

From the postulates developed and stated in Chapter II one may logically construct a number of hypotheses which can be tested within the operational framework of the present research. We shall review briefly here the theoretical framework and the postulates as developed in Chapter II so that the reader may observe specifically the derivation of the hypotheses.

It was noted that an attitude may result in behavior toward an object and that it may also, in turn, result in behavior toward means of fulfilling specific object behavior. Because the behavioral consequences of an attitude always occur in situations, attitudes are differentially facilitated in their expression in behavior by the situation at hand, or the attitude contexts. The postulates, therefore, are constructed by the use of three types of variables: attitudinal, facilitational, and behavioral. The postulates predict certain interrelationships between these variables. The postulates are stated as follows:

1. When individuals differ in their attitudes toward an object, and when the facilitation offered by the attitude context (or any one facilitation variable) is greater than zero, their attitudes will be positively correlated with their behavior with respect to the object, and with respect

to objects viewed as means for promoting their desired behavior toward the object of the attitude.

- a. When the degree of facilitation offered by the attitude context (or any one facilitation variable) is high, the positive correlation will be significantly higher than when the degree of facilitation offered by the attitude context (or any one facilitation variable) is low.

2. When individuals differ in the degree to which their attitude contexts facilitate the expression of an attitude in behavior, and when their attitude strengths are greater than zero, there will be a positive correlation between the facilitation offered by the attitude context (or any one facilitation variable) and their behavior with respect to the object, and with respect to objects viewed as means for promoting their desired behavior toward the object of the attitude.

- a. When the attitude strength is high, the positive correlation (between facilitation and behavior) will be significantly higher than when the attitude strength is low.

3. When the degree of facilitation offered by the attitude context (or any one facilitation variable) varies among individuals, there will be a positive correlation between the degree of facilitation offered by the attitude context (or any one facilitation variable) and the attitude strength.

The theoretical focus of the hypotheses is thus the attitude-behavior relationship. The focus within the operational framework, then, is the relationship between level of

occupational aspiration (attitude) and academic performance at college (means behavior). However, the facilitation variables outlined in the previous section on Measurement are felt to be significant in modifying this relationship and thus the inquiry considers their effects on this relationship. The basic and operational question of the research is thus, "What is the nature of the relationship between level of occupational aspiration and level of performance in college when certain facilitation variables and varying conditions of facilitation are considered and controlled?" The specific hypotheses to be tested are stated below.

1. When individuals differ in their levels of occupational aspiration, and when the facilitation offered by the attitude context (or any one facilitation variable) is greater than zero, their levels of occupational aspiration will be positively correlated with their levels of performance in college. (Because the facilitation offered by the attitude context is only minimally controlled in this central hypothesis, that is, it is simply above zero, it is expected that the positive correlation will be significant but relatively low.)

- a. When the degree of facilitation offered by the attitude context (or any one facilitation variable) is high, the positive correlation will be significantly higher than when the degree of facilitation offered by the attitude context (or any one facilitation variable) is low.

- 1) When the mental ability is high, the correlation between occupational aspiration and grade point average will be significantly higher than when the mental ability is low.
- 2) When the perceived reference group support is high, the correlation between occupational aspiration and grade point average will be significantly higher than when the perceived reference group support is low.
- ✓ 3) When the socioeconomic status is high, the correlation between occupational aspiration and grade point average will be significantly higher than when the socioeconomic status is low.
- 4) When the perception of the necessity of college is high, the correlation between occupational aspiration and grade point average will be significantly higher than when the perception of the necessity of college is low.
- 5) When the past performance is high, the correlation between occupational aspiration and grade point average will be significantly higher than when the past performance is low.
- 6) When the general facilitation is high, the correlation between occupational aspiration and grade point average will be significantly higher than when the general facilitation is low.

2. When individuals differ in the degree of facilitation offered by their attitude context (or any one facilitation variable), and when their levels of occupational aspiration are greater than zero, there will be a positive correlation between the facilitation offered by the attitude context (or any one facilitation variable) and their levels

of performance in college. (Because the level of occupational aspiration is only minimally controlled in this central hypothesis, that is, it is simply above zero, it is expected that the positive correlations will be significant but relatively low.)

- a. When the level of occupational aspiration is high, the positive correlation will be significantly higher than when the level of occupational aspiration is low.
 - 1) When the occupational aspiration is high, the correlation between mental ability and grade point average will be significantly higher than when the occupational aspiration is low.
 - 2) When the occupational aspiration is high, the correlation between perceived reference group support and grade point average will be significantly higher than when the occupational aspiration is low.
 - 3) When the occupational aspiration is high, the correlation between socioeconomic status and grade point average will be significantly higher than when the occupational aspiration is low.
 - 4) When the occupational aspiration is high, the correlation between perception of the necessity of college and grade point average will be significantly higher than when the occupational aspiration is low.
 - 5) When the occupational aspiration is high, the correlation between past performance and grade point average will be significantly higher than when the occupational aspiration is low.
 - 6) When the occupational aspiration is high, the correlation between general facilitation and grade point average will be significantly higher than when the occupational aspiration is low.

3. When the degree of facilitation offered by the attitude context (or any one facilitation variable) varies among individuals, there will be a positive correlation between the degree of facilitation offered by the attitude context (or any one facilitation variable) and the level of occupational aspiration.

- 1) Mental ability will be positively correlated with level of occupational aspiration.
- 2) Perceived reference group support will be positively correlated with level of occupational aspiration.
- 3) Socioeconomic status will be positively correlated with level of occupational aspiration.
- 4) Perception of the necessity of college will be positively correlated with level of occupational aspiration.
- 5) Past performance will be positively correlated with level of occupational aspiration.
- 6) General facilitation will be positively correlated with level of occupational aspiration.

These hypotheses will be discussed further and tested in Chapter IV.

The Sample

In this section of the chapter only the most relevant and important characteristics of the sample, and the procedures utilized to select it, will be presented. A great deal of descriptive information does not appear directly relevant to the main thesis of the study.

The subjects on whom data were gathered are 585 new freshmen entering Michigan State University in the fall term of 1960. This sample is approximately random and was selected from the total new entering freshman class which numbered 4,583.⁴⁵ The M.S.U. Office of Evaluation Services was asked to administer the Occupational Aspiration Scale (see Appendix A) and the About My College Plans questionnaire (see Appendix C) to 600 new freshmen students during the fall term orientation week.⁴⁶ Since orientation tests are given to students in groups of various sizes, the Office of Evaluation Services selected several groups at random to which it administered the scale and questionnaire. Thus,

⁴⁵These were students on the East Lansing campus only and were first-time college students. This figure does not include students entering other than regular degree programs (i.e., one and two year terminal courses, etc.).

⁴⁶Fifteen of the scales and questionnaires were either not completed by the student or were unidentifiable after administration. The remaining 585 students constitute the sample for this research.

although the sample of students was not selected at random in the strict sense of the term, it is felt that the technique used was sufficiently systematic in efforts to obtain randomness so that we may assume a random sample. Empirical evidence would also suggest that this assumption of randomness is justified. Table 1 shows certain demographic data for the total population from which the sample was selected. Differences, where they exist, are extremely small and it is concluded that these are not significant for this research. The sample is thus confidently assumed to meet the qualification of randomness.⁴⁷

The sample includes 305 men and 280 women students representatively located with respect to major field of study in the nine different colleges of the University at the time of entrance. (See Table 1.) Seven students in the sample were married. Exactly 82.7% of the sample was made up of 18 year olds at the time of entrance. Another 7.7% was 17 years old and 7.2% was 19 years old. Only two students were less than 17 years old and 12 were twenty years old or older.

Of the total sample, 205 students had dropped out of school before the seventh term or what would normally be the beginning of the junior year. Thus, 35.1% of the sample

⁴⁷On the basis of the evidence, we may reasonably generalize our findings to the entering freshman class of 1960 at Michigan State University.

Table 1. Comparison of Sample and Total Population on Certain Demographic Characteristics

	Sample N = 585		Total Population N = 4,583*	
	N	%	N	%
<u>Sex</u>				
Male	305	52.1	2,450	53.4
Female	280	47.9	2,133	46.6
<u>Residence</u>				
Michigan	452	77.3	3,456	75.4
Other	133	22.7	1,127	24.6
<u>College of Major</u>				
Agriculture	31	5.3	208	4.6
Business	104	17.7	765	16.7
Com. Art	20	3.5	177	3.8
Education	59	10.1	460	10.0
Engineering	77	13.1	570	12.5
Home Economics	29	4.9	196	4.3
Sci. & A.	153	26.2	1,211	26.4
Vet. Med.	27	4.6	206	4.5
Univ. (No pref.)	85	14.6	790	17.2

*Data derived from Enrollment Report, Fall 1960
(East Lansing, Michigan: Michigan State University, Office
of the Registrar), pp. 3-4 (Table 11).

may be considered "dropouts" in the present study. An additional 34 students were performing unsatisfactorily (below the 2.00 grade point average) but were continuing in an academic program at the University. Thus, a total of 239 students or 40.9% of the sample had either dropped out or were displaying unsatisfactory academic behavior at the time the behavioral variable was measured for this research (seventh term or beginning of junior year). Of the 205 dropouts, 157 had already dropped out during, or at the close of, the first academic year. Thus, 26.7% of the sample dropped out in the first year. These data also compare favorably with the official records for the total population in the Office of the Registrar.⁴⁸

The research procedures after selection of the sample may be outlined briefly here. For each student in the sample, additional data were necessary beyond the completed Occupational Aspiration Scale (see Appendix A) and the About My College Plans questionnaire (see Appendix C). Much of the additional necessary data was obtained from each student's application and credentials for admission to the

⁴⁸Data in the Office of the Registrar show 1,237 of 4,583 dropped out during the first year (27.0%), 1,852 of 4,583 dropped out during the first two years (40.4%) and 2,028 of 4,583 dropped out during the first three years (44.3%). These data also support the contention that most of the dropout occurs during the first two years.

University. Still other portions of necessary data were obtained from the official records of the Office of the Registrar and the Office of Evaluation Services at Michigan State University. All of the editing, scoring, coding and tabulating of the data was completed by the writer. All data were recorded on standard coding sheets and were punched on cards by the Data Processing Department (see Appendix B). Initial analysis was done by the writer on IBM counter-sorter equipment. However, the major statistical analysis was completed by the Control Data 3600 computer at Michigan State University.

Limitations of the Sample

The nature of the sample utilized to determine the adequacy of the postulates imposes limitations which should be reviewed briefly at this point and possibly discussed further in the final chapter of this thesis, particularly as these limitations may affect the results obtained.

The general limitation may be stated and explained simply as the relatively limited range of variability of the selected sample on several of the critical independent variables used in the research. A rather limited actual range of variability of the sample on the attitudinal variable, level of occupational aspiration, and several facilitation variables, namely: mental ability, past academic performance, socioeconomic status and perception of the necessity of

college, is observed. In the case of each of these variables there is a conspicuous absence of respondents at and toward the low extreme of the response continuum.

The attitudinal variable, level of occupational aspiration, is probably most significant in this respect. There are no respondents with really low occupational aspiration in the sample; this may readily be explained, it seems, on the grounds that individuals with low aspiration would probably not make the necessary prior decision to go to college. Thus, the very nature of this new college student sample has doubtless eliminated the low-aspiring persons. Furthermore, it must be noted that there is also a lack of respondents at the very high end of the occupational aspiration continuum. Thus, the majority of the respondents varied within the "middle range" of the continuum.

Similarly, and also quite significant in the present theoretical framework, there are no really low respondents on the scales measuring mental ability, socioeconomic status, past academic performance, and perception of the necessity of college. This also seems to be due to the nature of the sample. Selective admission procedures practiced by the University automatically impose the lack of low respondents on the mental ability and past academic performance scales. Again, the lack of respondents with very low perceptions of the necessity of college for attaining their desired job may be explained on the grounds that most students with low

perception of the necessity of college simply do not make the decision to go to college in the first place. The lack of respondents with low socioeconomic status may be explained on the basis of several arguments, each of which may be valid to varying degrees with different persons. Low socioeconomic status may make college attendance extremely difficult from a simple economic or financial standpoint. It may reflect a cultural phenomenon placing college attendance low on the value hierarchy for these groups. It may also be a lack of support from "significant others" for college attendance. In any event, it seems reasonable that these factors, along with others, may impose the scarcity of low socioeconomic status respondents in the sample. Thus, for all of the above variables, it may be contended that the very nature of a new college student sample imposes the lack of this "low" category of respondent.

The above limitation is illustrated in Figure 3.⁴⁹ The implications of this limitation for the analysis may be reflected in somewhat lower correlation coefficients than what otherwise might be expected when utilizing these variables. For example, a lower correlation between level of occupational aspiration (where the sample is characterized by clustering at the middle range) and grade point average

⁴⁹For detailed data regarding this limitation, also see Appendix G.

(where the sample is well-distributed over the continuum) would be expected than if the level of occupational aspiration were also well-distributed. This may also be illustrated (see Figure 4). If the limits of the sample on level of aspiration could be extended, the theoretical effect would be to raise the correlation by extension of the cases along the X axis with theoretically corresponding Y axis relationships.⁵⁰

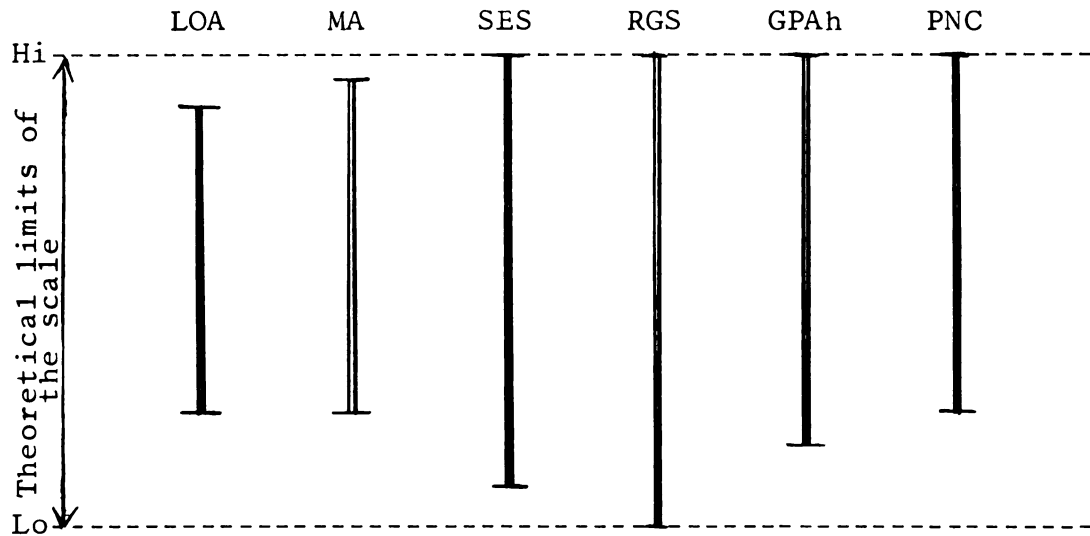


Figure 3. The diagram shows that the range of variability of the sample on almost all of the variables used in this research does not extend to the theoretical limits of the scales used, particularly the low theoretical limits. Furthermore, clustering within these ranges of variability also are observed (see Appendix G) and thus further complicate the nature of this limitation of the sample for the present research.

⁵⁰For further discussion of range of variability and its effects, see Hubert M. Blalock, Jr., Social Statistics (New York: McGraw-Hill, 1960), pp. 290-291.

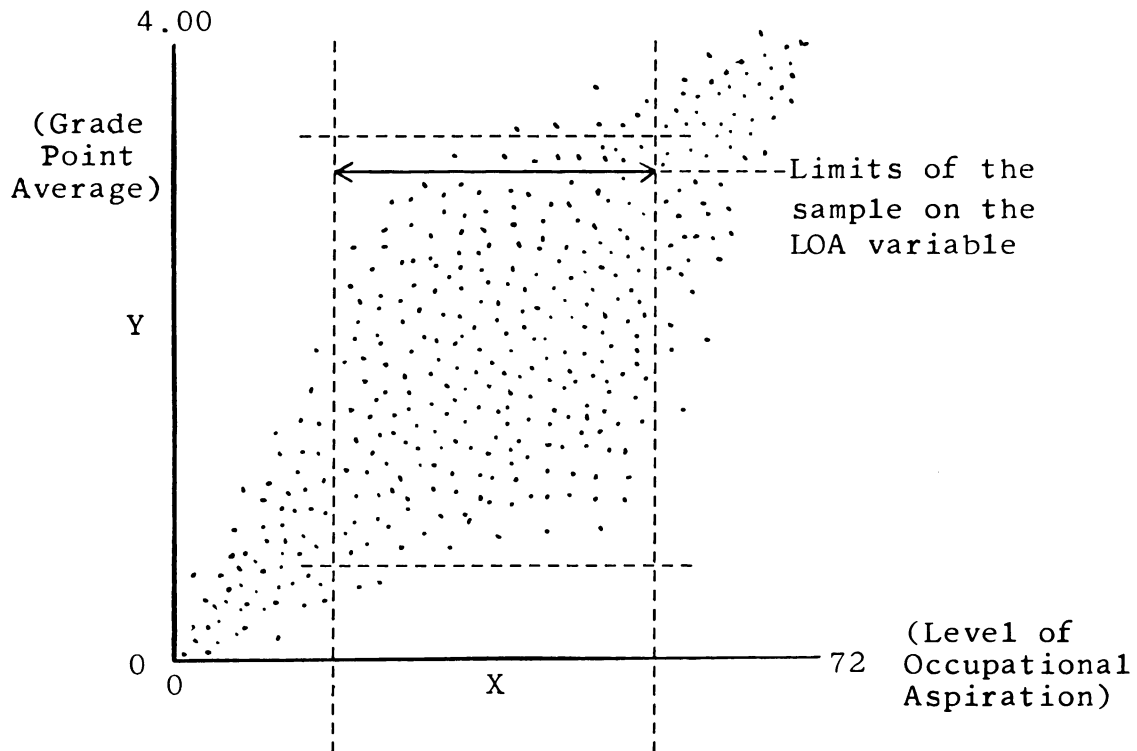


Figure 4. The diagram shows almost no relationship within a limited range of variation in the X variable but a positive relationship over a hypothetical total range of X.

This limitation of the sample is described here so that the reader may be aware of it prior to reviewing the next chapter, and so that the results of the analysis may be interpreted with this forewarning. This limitation is not considered to be prohibitive from the standpoint of testing the hypotheses, however, it is felt to be important in evaluating the strength of the correlations which obtain.

Summary of Chapter

This chapter has been focused upon presentation of the total research design. It has attempted to give the reader a complete description of the operational framework, the measurement techniques and procedures, the variables, the sample, and the specific hypotheses to be tested. Several problems and limitations of parts of the total design were also discussed. The results of analysis and tests of hypotheses will now be discussed in the next chapter.

CHAPTER IV

THE RESULTS

Introduction

This chapter presents the results of the data analysis in relation to the theoretical and operational frameworks set forth and discussed in Chapters II and III. The analysis employed in this research utilizes the correlation coefficient as the major measure of relationship. The postulates and hypotheses are stated in terms of correlation and, thus, this chapter will present primarily the correlational analysis of the data as guided by the stated hypotheses. This approach does not, of course, preclude or prevent the further analysis of the data by other statistical techniques.

The presentation in this chapter, then, consists of the statistical testing of the twenty specifically stated hypotheses derived from the postulates assumed in this research. Although there is some effort to interpret the specific results in this chapter, a more general attempt to deal with them within the context of the theoretical framework will be delayed for the final chapter.

Tests of the Hypotheses

The hypotheses guiding this study are so stated that the actual tests of them may be made by analysis of the correlations derived after appropriate programming and computing by the Control Data 3600 computer used by the Michigan State University Computer Laboratory. Thus, the technique used is the correlation coefficient (r) which, if statistically significant, indicates the existence, degree and direction of the relationship or association between two variables. Since the theoretical framework used in this study allows one to predict the direction of the relationship, a one-tailed test of the significance of the relationship may be applied.¹ The "t" test of significance is used in each case to test the null hypothesis of no relationship between the variables.² The .05 probability level will be

¹The formula for the computation of "r" is that used by the Michigan State University Computer Laboratory in its Control Data 3600 Statistical Program I (Identification code: L1.01M). The correlation is calculated by the equation:

$$r_{xy} = \frac{n \sum xy - \sum x \sum y}{[n \sum (x)^2 - (\sum x)^2][n \sum (y)^2 - (\sum y)^2]}$$

²The formula for the computation of "t" is that suggested by Edwards:

$$t = \left(\frac{r}{\sqrt{1-r^2}} \right) \left(\sqrt{N-2} \right)$$

See Allen L. Edwards, Statistical Methods for the Behavioral Sciences (New York: Rinehart and Co., 1954), p. 303.

the criterion used for the acceptance or rejection of the null hypothesis. Thus, if the size of the "r" is found to be statistically significant, the correlation will be accepted as supporting the hypothesis in question.

In those cases where the hypotheses predict a significant difference between two correlation coefficients, the "z" test for significance of the difference is applied.³ The null hypothesis of no difference between the coefficients is thus tested, again using the .05 probability level as the criterion for acceptance or rejection (one-tailed tests are applied since direction is again predicted in each case). If the size of "z" is found to be statistically significant, it will be accepted as supporting the hypothesis in question.

Implications of Acceptance or Rejection

The theoretical framework of the present study provides general postulates which when stated operationally as general hypotheses are broken down into twenty specific

³The formula for the computation of "z" is that suggested by Edwards:

$$z = \frac{z_1^1 - z_2^1}{\sigma_{z_1^1 - z_2^1}}$$

See Allen L. Edwards, op. cit., pp. 304-307.

hypotheses. The acceptance or rejection of these hypotheses must therefore have implications for either the theoretical framework or the operational framework, or possibly both. In short, if the hypotheses are all supported both the theoretical and the operational frameworks must be accepted as, at least, tentatively valid. If the hypotheses are not supported either one or both of the frameworks must be accepted as, at least, tentatively invalid. Furthermore, if some of the hypotheses are supported and others are not, at least tentative conclusions must be drawn about parts of either the theoretical or the operational framework, or both. These alternative conclusions may be briefly suggested here and discussed further in the final chapter if the results deem it necessary.

If the expected relationship is not obtained in the testing of the first general hypothesis, attention must be focused upon both the total theoretical framework and the total research design and rational decisions made regarding possible weaknesses in each before at least tentatively rejecting either or both. If the expected relationships are not obtained in the testing of any or all of the sub-hypotheses, attention must first be focused upon the facilitation variable in question within, and in relation to, the total research design. Because of the nature of the method utilized for selecting the facilitation variables and due to

certain limitations in the sample, it seems appropriate that only after intensive investigation of the variable and the research design should the theoretical framework be called into question on the basis of the rejection of any or all of the sub-hypotheses.

If the expected relationship is not obtained in the testing of the second general hypothesis, attention must again be focused upon the total theoretical framework and the total research design. On the basis of logical and systematic decisions regarding the conceivable weaknesses in each, either or both must be at least tentatively rejected. If the expected relationships are not obtained in the testing of any or all of the sub-hypotheses, attention must be focused upon the facilitation variable in question, the attitude variable, and the total research design before making decisions in regard to the theoretical framework and its adequacy. As in the case of the sub-hypotheses of Hypothesis 1, it is felt that this sequence of concern and analytical attention is necessitated by: (1) the nature of the method utilized for selecting the facilitation variables, and (2) certain limitations in the sample.

If the expected relationship is not obtained in the testing of the third and final general hypothesis, attention must be focused upon that part of the theoretical framework which contends that degree of facilitation also influences

degree of attitude strength or, in operational terms, that level of occupational aspiration will be influenced in direct relation with the level of facilitation experienced or perceived for the attainment of the object of aspiration (occupation), or means objects (education).⁴ If the relationship does not obtain for a given facilitation variable, however, that variable should first be analyzed in regard to its legitimacy within the research design.

Since the results of analysis will determine, in part, how extensively these alternative conclusions must be discussed, it is not necessary to pursue them further here.

Hypothesis 1

The first general hypothesis of this study is that level of occupational aspiration is positively correlated with level of performance in college for individuals who obtain some degree of positive facilitation from the situation or environment within which they are operating (attitude context). From this general hypothesis six sub-hypotheses are formulated which are tested by controlling the degree of facilitation offered by five selected variables which were isolated in this study as significant facilitation variables, and a general facilitation variable

⁴See Chapter II, pp. 29-32.

constructed by combining the five selected variables.⁵ Testing this general hypothesis and its six sub-hypotheses constitutes the test of Postulate 1 of the theoretical framework.

Hypothesis 1

When individuals differ in their levels of occupational aspiration, and when the facilitation offered by the attitude context (or any one facilitation variable) is greater than zero, their levels of occupational aspiration will be positively correlated with their levels of performance in college.

The test of this general hypothesis was completed by the correlation of just two variables for all cases in the sample: level of occupational aspiration and level of performance in college (grade point average). The correlation coefficient obtained was .161. The null hypothesis of no relationship was tested by application of the "t" test of significance.⁶

$$r = .161 \quad N = 585 \quad t = 3.93 \quad df = 583 \quad P < .01$$

Since the "t" value is statistically significant, the correlation of the two variables is significant and the null

⁵See Appendix E for detailed explanation of how this index was developed.

⁶See footnote 2 p. 92 of this thesis for the statistical formula used in computation.

hypothesis of no relationship may be rejected. As was expected, the size of the correlation is quite low. The expectation of a low correlation, as was indicated earlier, was based upon the minimal control of facilitation offered by the attitude context, that is, facilitation was simply above zero. Theoretically, facilitation is always greater than zero in this study since all instruments used were designed to measure only the degree of positive facilitation.

The support of this hypothesis provides initial evidence to the theoretical position that attitudes are correlated with means behavior. Thus, it tends to support the position that the actor will behave in a consistent manner with regard to both objects toward which he has an attitude and objects viewed as means for promoting the desired behavior toward the object of the attitude. In the case of this operational framework, the actor behaves in an expected manner toward an academic program which is a means to attaining the desired occupational status toward which he aspires.

Sub-hypothesis 1.1

When the mental ability is high, the correlation between occupational aspiration and grade point average will be significantly higher than when mental ability is low.

The test of this hypothesis was performed by dividing the sample into three groups by degree of facilitation on the mental ability variable. Thus, the sample was divided into "High," "Medium," and "Low" facilitation groups with respect

to the mental ability variable.⁷ The "High" and "Low" groups were then compared to determine the significance of the difference between the correlation coefficients of occupational aspiration and grade point average. The null hypothesis that the "High" group would have a correlation coefficient between occupational aspiration and grade point average equal to or smaller than the "Low" group was tested by application of the "z" test for significance of the difference.⁸

High	$r = .168$	$N = 195$	$z' = .1696$		
(Medium	$r = -.058$	$N = 195)$		$Z = 1.01$	$P < .16$
Low	$r = .066$	$N = 194$	$z' = .0661$		

The test of significance indicates that the difference is not statistically significant at the .05 level of probability and thus the null hypothesis that there is no difference cannot be rejected. These data tend, therefore, to reject the hypothesis that the correlation coefficient between level of occupational aspiration and grade point average is significantly higher for high mental ability students than for low ability students.

⁷This was done by dividing the index arbitrarily into three as "numerically equal" parts as was possible. The same procedure of allowing the data to determine the categories is used for the other facilitation variables. See Appendix K for detailed information concerning the empirical basis of these categories.

⁸See footnote 3 p. 93 of this thesis for the statistical formula used in computation.

Nevertheless, several observations in the data are noteworthy. First, the difference is in the expected direction, although it is not statistically significant. Second, the "Medium" mental ability group shows a negative relationship between level of occupational aspiration and grade point average. Theoretically, the relationship would be expected to fall somewhere between the "High" and "Low" groups. Thus, it deviates from the expected pattern. Third, the correlation coefficients for both the "Medium" and "Low" groups are not significantly different from zero and thus the values may be considered spurious variations around the zero point. Finally, the correlation coefficient for the "High" group is statistically significant from zero. These observations will be considered further after testing the remaining sub-hypotheses of Hypothesis 1.

Sub-hypothesis 1.2

When the perceived reference group support is high, the correlation between occupational aspiration and grade point average will be significantly higher than when the perceived reference group support is low.

The null hypothesis that the "High" group would have a correlation coefficient between occupational aspiration and grade point average equal to or smaller than the "Low" group was tested using the same procedures as in sub-hypothesis 1.1.

High	$r = .191$	$N = 227$	$z' = .1934$		
(Medium	$r = .065$	$N = 252)$		$Z = 1.82$	$P < .05$
Low	$r = -.049$	$N = 80$	$z' = -.0490$		

The "z" test of significance indicates that the difference is statistically significant at the .05 level of probability and therefore the null hypothesis can be rejected. Thus, the hypothesis that the correlation coefficient between level of occupational aspiration and grade point average is significantly higher for students with high perceived reference group support than for students with low perceived support may be accepted. Within the theoretical framework utilized here, then, perceived reference group support operates as expected as a facilitation variable.

Sub-hypothesis 1.3

When the socioeconomic status is high, the correlation between occupational aspiration and grade point average will be significantly higher than when the socioeconomic status is low.

The "z" test of significance of difference was applied to the null hypothesis that the "High" socioeconomic status group would have a correlation coefficient between occupational aspiration and grade point average equal to or smaller than the "Low" socioeconomic group.

High	$r = .332$	$N = 171$	$z' = .3451$	
(Medium	$r = .180$	$N = 196)$		$Z = 3.16 \quad P < .001$
Low	$r = .007$	$N = 185$	$z' = .0070$	

The statistic indicates that the null hypothesis may be rejected; which means that the hypothesis is tenable as proposed, that is, that high socioeconomic status students have a significantly higher correlation between their occupational aspirations and grade point averages than do low socioeconomic

status students. Thus, it may be contended that socioeconomic status operates as expected as a facilitation variable in the theoretical framework guiding this research.

Sub-hypothesis 1.4

When the perception of the necessity of college is high, the correlation between occupational aspiration and grade point average will be significantly higher than when the perception of the necessity of college is low.

The test of the null hypothesis that those students with a "High" perception of the necessity of college will have a correlation coefficient between occupational aspiration and grade point average equal to or smaller than students with "Low" perception of the necessity of college was accomplished by use of the "z" value.

High	$r = .160$	$N = 357$	$z' = .1614$		
(Medium	$r = .224$	$N = 135)$		$Z = .606$	$P < .28$
Low	$r = .070$	$N = 84$	$z' = .0701$		

The obtained statistic indicates that the null hypothesis of no difference cannot be rejected. Therefore, the hypothesis that the correlation between level of occupational aspiration and grade point average will be significantly higher for students with a high perception of the necessity of college than for students with a low perception of the necessity of college must be rejected.

Several observations in the data must, however, be noted. First, the difference (although not statistically

significant) is in the expected direction. Second, the group with "Medium" perception of the necessity of college shows a higher positive relationship between level of occupational aspiration and grade point average than the "High" group. Theoretically, the relationship would be expected to fall somewhere between the "High" and "Low" groups. Thus, it deviates from the expected pattern. Third, the correlation coefficients for both the "High" and "Medium" groups are significant from zero. Fourth, the correlation coefficient for the "Low" group is not statistically significant from zero. Finally, a limitation of the sample noted earlier (Chapter III, p. 86) should be emphasized, that is, a severe lack of respondents who were at the low end of the perception of the necessity of college index.⁹ We shall consider these observations further after testing the remaining sub-hypotheses of Hypothesis 1.

Sub-hypothesis 1.5

When the past performance is high, the correlation between occupational aspiration and grade point average will be significantly higher than when the past performance is low.

The "z" test was not applied to the null hypothesis that students with high past performance will have a correlation

⁹It is found, in fact, that less than 2% of the respondents actually perceive the necessity of college for attaining their occupational aspiration as less than "quite important." More than 90% of the respondents perceived it as "very important" or "absolutely necessary."

coefficient between occupational aspiration and grade point average equal to or smaller than students with low past performance because the observed values of "r" show that a significance of difference will not obtain, and that the very slight difference is opposite the prediction.

High	r = .137	N = 206
(Medium	r = .088	N = 192)
Low	r = .145	N = 184

Since it is apparent that the correlation coefficients are not different, the hypothesis must be rejected.

Nevertheless, several possible sources of this rejection may be suggested. First, it was argued in Chapter III that past performance constitutes an indirect self concept of ability measure, since the student tends to use it as a primary objective measure of ability. There is some empirical evidence to support this.¹⁰ If this argument is valid, it is possible and highly probable that the student uses this self concept of ability to adjust his aspirations in a consistent manner or direction, including his occupational aspiration. Thus it may be suggested, on the basis of the obtained statistics and the rationale presented, that the person adjusts his occupational aspiration and self

¹⁰See page 55 of this thesis; also see footnote 26 of Chapter III.

concept of ability consistently, or in like manner. This is also consistent with the notion of "cognitive balance" discussed in Chapter II.¹¹ The student, in order to maintain a cognitive balance and prevent a condition of cognitive stress (dissonance) between aspiration and self concept, must bring his occupational aspiration and self concept of ability into a consistent cognitive co-existence without stress. If this is so, the observed values of "r" are reasonable since differential self-concept of ability would not require significantly different relations between aspiration and grade point average. Second, it is possible that past academic performance as an indirect self concept of ability measure, particularly when it refers to high school performance, undergoes considerable and significant change during the first year of college and thus may be considered as a possible source for the observed rejection of the hypothesis. For example, a considerable number of students who performed satisfactorily or even outstandingly in their high school environment (and thus their community environment) may not do so (or necessarily be expected to do so) under the conditions of the university. For example, it is highly probable that quite different standards of performance,

¹¹See pages 21-23 of this thesis; also see Heider, op. cit.

different referents for comparison and evaluation of performance, and different conditions of and requirements for the performance process prevail for the student in the university environment as compared to his high school environment. Thus, between the time of measurement of this facilitation variable and the consequent behavior variable (approximately two and one-half years), the self concept of ability may undergo drastic changes due to these vast changes in the student's environment, both intra- and extra-personal. If this is so, the past academic performance variable may very well have other than the expected impact as a facilitator upon the relationship between the attitude and behavior variables. Third, another possible although improbable source contributing to the rejection of the hypothesis may be sought in the fact that the reliability of the past academic performance index (the individual's high school grade point average) cannot be adequately determined and the validity can only be estimated by its relationship with the behavioral variable (the individual's college grade point average) in this research. It must, of course, be recognized that this problem is not new or unique; it must be faced whenever grade point average is used as an independent variable index. Thus it is cited here only so that the reader may evaluate the observed rejection with this awareness.

The foregoing discussion cites several possible sources of the rejection of this sub-hypothesis. The validity of any or all of the rationale must, of course, be demonstrated empirically.

Sub-hypothesis 1.6

When general facilitation is high, the correlation between occupational aspiration and grade point average will be significantly higher than when general facilitation is low.

In testing the null hypothesis that the "High" facilitation group would have a correlation coefficient between level of occupational aspiration and grade point average equal to or smaller than the "Low" facilitation group, the following results obtained.

High	$r = .097$	$N = 169$	$z' = .0973$	$Z = 1.74$	$P < .05$
(Medium	$r = .035$	$N = 186$)			
Low	$r = -.095$	$N = 159$	$z' = -.0953$		

The "z" test of significance of difference indicates that the null hypothesis may be rejected. Therefore, the hypothesis that high facilitation students have a significantly higher correlation between their occupational aspirations and grade point averages than do low facilitation students is tenable as proposed. This finding, then, tends to support the fundamental position that the degree to which level of occupational aspiration and grade point average are related varies directly (or consistently) with the degree of facilitation offered. In theoretical terms, it supports the

notion that the degree to which attitudes and behaviors are related varies directly with the degree of facilitation offered by the attitude context.

In spite of the tenability of this sub-hypothesis, the negative correlation which obtained between level of occupational aspiration and grade point average for the "Low" facilitation group is worthy of consideration. Although the correlation for this low group was expected to be zero, or extremely close to zero, the possibility of a negative correlation was not anticipated. An explanation, based in part upon the theoretical framework and in part upon the nature of the sample, may be ventured. It is possible and quite probable that students with generally low facilitation for college attendance and academic performance, but who have relatively high occupational aspirations, experience rather extreme frustrations and cognitive dissonances with some regularity during their stay at college. Thus, their academic performance is hindered, or at least it is not consistent with their relatively high occupational aspirations.¹² On the other hand, students with a degree of general facilitation more consistent with their relatively high

¹²It was noted that even the "Low" group of students on level of occupational aspiration have relatively high degrees of attitude strength, that is, level of occupational aspiration. There were no really low aspirers in the sample (see pages 86-88, also Appendix G).

occupational aspirations are not experiencing the frustrations of the former group, at least not frustrations of the same type or degree of intensity and regularity. Thus, they are not hindered as greatly in their academic performance, or in any event, their academic performance is likely to be more consistent with their occupational aspirations. If this in fact occurs, a negative correlation between level of occupational aspiration and grade point average for the "Low" facilitation group would be expected. This explanation should, of course, be pursued in further research more specifically directed at this problem before it is even tentatively accepted as valid. However, the theoretical and practical implications of such a finding would be significant.

The tests of the foregoing sub-hypotheses do not conclusively confirm the general hypothesis, although the bulk of the evidence tends to support it. Certainly, the evidence is not entirely clear. Two of the individual facilitation variables (1.2 and 1.3) and the general facilitation variable (1.6) supported the general hypothesis by statistically significant differences which were expected. Three of the individual facilitation variables (1.1, 1.4, 1.5) did not show statistically significant differences which were expected in support of the general hypothesis, although two of them (1.1 and 1.4) showed differences in the expected

direction. Thus, the expected significant difference which obtained when the general facilitation variable (an additive combination of the five individual facilitation variables--see Appendix E) was controlled is apparently a function of the two individual variables showing statistically significant differences and the two other individual variables showing non-significant differences in the expected direction.

Two general observations derived from the tests of these sub-hypotheses must be reviewed and their importance evaluated. First, it was noted that in the case of the two facilitation variables where non-statistically significant differences in the expected direction were observed, one (1.1) showed a correlation coefficient statistically significant from zero for only the "High" facilitation group, the other (1.4) for both "High" and "Medium" facilitation groups. Furthermore, if we observe the two facilitation variables where statistically significant differences in the expected direction were observed, we also find that one (1.2) showed a correlation coefficient statistically significant from zero for only the "High" facilitation group, the other (1.3) for both the "High" and "Medium" facilitation groups. These observations suggest that the facilitation variables utilized here vary in respect to the level or threshold at which they tend to have an impact upon the relationship between level of occupational aspiration and grade point

average. In other words, this tends to suggest that facilitation variables vary in respect to the point or points on any index measuring them at which they "make a difference" in the relationship between the attitude and behavior. For example, on a mental ability index the evidence leads one to posit that possibly only variations above or below a certain point make a considerable difference in the relationship; or possibly that variations between two points make little difference but that variations either above or below these points make considerable differences in the relationship. In specific, this suggests that a simple linear relationship does not exist between these variables and, thus, that statistical techniques which assume linearity are inadequate for observing the relationships which do exist. What this implies, then, is that more complex, non-linear relationships may be occurring between these variables which are not made clearly evident from the correlational analysis used here. If this is so, it suggests that a modified multiple cut-off method must be combined with a type of non-linear multiple regression technique to obtain the optimum effect of a combination of facilitation variables upon an attitude-behavior relationship. Further consideration to this problem and its implications for the theoretical framework guiding this study will be given in a later section of this chapter.

Second, the negative correlation observed for the "Low" facilitation group in sub-hypothesis 1.6 and the rationale provided for it are suggestive of another phenomenon with possible theoretical implications. The theoretical framework utilized presently does not lead one to expect a negative relationship between level of occupational aspiration and grade point average, that is, between attitudes and behavior. It is possible, however, that under certain conditions a negative relationship should be expected. For example, a student with a relatively high level of occupational aspiration but who has a low degree of facilitation for college performance (i.e., low mental ability, little reference group support, relatively low socioeconomic status, etc.) probably experiences a degree of cognitive dissonance and, furthermore, severe frustrations in his efforts toward satisfactory college performance. These frustrations and cognitive dissonances may, as separate mediating variables, further hinder his academic performance to the extent that it is negatively correlated with his level of occupational aspiration; at least to the extent that it is not consistently related to either the level of occupational aspiration or the controlled facilitation variables. If this is so, the implications for the theoretical framework are obvious and significant. We shall further consider this problem and its possible theoretical implications in a later section of this chapter.

In summary, it is felt that on the basis of the evidence the general hypothesis from which the six sub-hypotheses were derived is supported. It was found that the test of the general hypothesis was statistically significant in the expected direction. Tests of three of the sub-hypotheses, including the general facilitation variable which constituted an index constructed by utilizing the other five individual facilitation variables, also showed statistical significance in the direction which was expected. Although three of the sub-hypotheses did not show differences which were statistically significant, two of them showed differences in the expected direction. Only one sub-hypothesis did not show an expected difference. In this case, and in the two cases where the null hypotheses could not be rejected, the necessarily tentative rationale (subject, of course, to empirical verification) which was presented for the obtained observations is accepted as adequate. Thus, the general hypothesis and, in turn, Postulate 1 of the theoretical framework, are acceptable as tenable. This decision must, of course, be made tentatively and cautiously. The implications of this decision will be discussed further in a later section of this chapter.

Hypothesis 2

The second general hypothesis of the study is that the degree of facilitation offered by the attitude context is positively correlated with level of performance in college for individuals who have some degree of positive occupational aspiration. Six sub-hypotheses are formulated from this hypothesis which, in turn, are tested by controlling the level of occupational aspiration. The testing of the general hypothesis and the sub-hypotheses constitute the test of Postulate 2 of the theoretical framework.

Hypothesis 2

When individuals differ in the degree of facilitation offered by their attitude contexts (or any one facilitation variable), and when their levels of occupational aspiration are greater than zero, there will be a positive correlation between the facilitation offered by the attitude context (or any one facilitation variable) and their levels of performance in college.

The test of this general hypothesis was completed by correlating each of the selected facilitation variables with level of performance in college (grade point average). A general index of facilitation was also constructed from the five variables and correlated with level of performance in college.¹³ In each case the null hypothesis of no relationship was tested by application of the "t" test of

¹³See Appendix E.

significance.¹⁴

Mental Ability

$r = .542$ $N = 584$ $t = 15.56$ $df = 582$ $P < .01$

Perceived Reference Group Support

$r = .323$ $N = 559$ $t = 8.04$ $df = 557$ $P < .01$

Socioeconomic Status

$r = .062$ $N = 552$ $t = 1.45$ $df = 550$ $P < .05$

Perception of the Necessity of College

$r = .006$ $N = 546$ $t = 0.14$ $df = 544$ $P < 1.00$ (n.s.)

Past Performance

$r = .575$ $N = 582$ $t = 16.91$ $df = 580$ $P < .01$

The "t" value is found to be statistically significant for four of the five selected variables. The perception of the necessity of college was not significant. With the exception of this one variable, then, the null hypothesis of no relationship may be rejected. In the case of each variable, a significant positive correlation between it and performance in college is observed. The discrepancy in the pattern created by the perception of necessity of college variable must lead one to seriously question the index used to measure it. It was noted earlier that very few students had really low perception of the necessity of college. It is felt that this was primarily due to the fact that students

¹⁴See footnote 2, p. 92 of this thesis for the statistical formula used in computation. Since direction is predicted in each case, the one-tailed test is used.

with low scores on the index of perception of the necessity of college simply do not make the decision to come to college in the first place, and thus are automatically eliminated from the sample. It is found, in fact, that less than 2% of the respondents actually perceive the necessity of college for attaining their occupational aspiration as less than "quite important." More than 90% of them perceived it as "very important" or "absolutely necessary." Thus, it may be contended that the index did not discriminate adequately between respondents on this variable, this probably being attributable to the nature of the sample. In spite of this empirical evidence of the weakness of the index, at least for this sample, the legitimacy of the variable for the research design cannot really be evaluated. It is only known that the expected relationship did not obtain, and that this is probably due to the weakness of the index for this sample.

The general facilitation index was additively constructed from the five separate facilitation variables considered individually above.¹⁵ Thus, the null hypothesis of no relationship between general facilitation and performance in college (grade point average) may be tested.

¹⁵See Appendix E for detailed explanation of how this index was developed.

$$r = .534 \quad N = 514 \quad t = 14.30 \quad df = 512 \quad P < .01$$

The "t" value indicates clearly that the null hypothesis may be rejected, that is, one may accept as tenable the hypothesis that there is a positive correlation between the degree of facilitation offered by the attitude context and grade point average for individuals with differential levels of occupational aspiration.

In view of the obtained statistics, it is concluded that the general hypothesis is supported. This evidence tends to give preliminary support to the theoretical position that the facilitation provided by the attitude context, that is the situation within which the individual and his attitude operate, is correlated with the means behavior. It thus supports the position that facilitation within the attitude context is an important variable with which one must deal when attempting to predict differential attitudes. In the case of this operational framework, selected items of facilitation are found to be related in an expected manner (positively correlated) to performance in an academic program which is a means to attaining the occupational status toward which the actor aspires.

The six specific sub-hypotheses are all stated from the basic position that when the level of occupational aspiration is high, the positive correlation between facilitation and grade point average will be significantly higher

than when the level of occupational aspiration is low. Each of the five facilitation variables are used individually and are also used as part of a composite general facilitation index.¹⁶ In the testing of each sub-hypothesis, the sample was divided into three groups of occupational aspiration level: High, Medium and Low categories.¹⁷ The "High" and "Low" groups were then compared to determine the significance of the difference between the correlation coefficients of facilitation and grade point average. The null hypothesis that the "High" group would have a correlation coefficient equal to or smaller than the "Low" group was tested by application of the "z" test for significance of the difference in each case.

Sub-hypothesis 2.1

When the occupational aspiration is high, the correlation between mental ability and grade point average will be significantly higher than when the occupational aspiration is low.

The null hypothesis that the "High" level of occupational aspiration group would have a correlation coefficient between mental ability and grade point average equal to or

¹⁶See Appendix E for detailed explanation of how this index was developed.

¹⁷This was done by dividing the index arbitrarily into three as "numerically equal" parts as was possible. In brief, the data determined the categories. See Appendix K for detailed information concerning the empirical basis of these categories.

smaller than the "Low" group was tested.

High	$r = .596$	$N = 171$	$z' = .6854$	$Z = 2.73$	$P < .005$
(Medium	$r = .535$	$N = 216)$			
Low	$r = .378$	$N = 197$	$z' = .3977$		

The obtained statistic indicates that the null hypothesis may be rejected, and thus the hypothesis is tenable as proposed, that is, that high level of occupational aspiration students show significantly greater correlation between mental ability and grade point average than do low level of occupational aspiration students. Thus it provides initial evidence that occupational aspiration operated as expected as an attitudinal variable in the theoretical framework guiding this research, that is, the degree to which mental ability and grade point average are related varies directly with the level of occupational aspiration. In theoretical terms, the degree to which facilitation and behavior toward an object (or means object) are related varies directly with the strength of the attitude toward the object.

Sub-hypothesis 2.2

When the occupational aspiration is high, the correlation between perceived reference group support and grade point average will be significantly higher than when the occupational aspiration is low.

In testing the null hypothesis that the "High" level of occupational aspiration group would have a correlation coefficient between perceived reference group support and

grade point average equal to or smaller than the "Low" group, the following results obtained.

High	$r = .402$	$N = 166$	$z' = .4248$	$Z = 2.01$	$P < .03$
(Medium	$r = .320$	$N = 206)$			
Low	$r = .208$	$N = 187$	$z' = .2100$		

The statistic shows that the null hypothesis may be rejected and therefore one may accept as tenable the hypothesis that high level of occupational aspiration students show a significantly greater correlation between perceived reference group support and grade point average than do low level of occupational aspiration students. As in sub-hypothesis 2.1, this also provides evidence in support of the theoretical framework.

Sub-hypothesis 2.3

When the occupational aspiration is high, the correlation between socioeconomic status and grade point average will be significantly higher than when the occupational aspiration is low.

The "z" test for significance of difference was applied to the null hypothesis that the "High" level of occupational aspiration group would have a correlation coefficient between socioeconomic status and grade point average equal to or smaller than the "Low" group.

High	$r = .213$	$N = 161$	$z' = .2163$	$Z = 2.88$	$P < .002$
(Medium	$r = .054$	$N = 204)$			
Low	$r = -.096$	$N = 187$	$z' = -.0963$		

The "z" test statistic indicates that the null hypothesis may be rejected. The hypothesis that high level of occupational aspiration students show a significantly higher correlation between socioeconomic status and grade point average than do low level of occupational aspiration students may thus be accepted as tenable. This decision is also consistent with those made in regard to the previous two sub-hypotheses.

Brief consideration should be given here to the observation of a negative correlation between socioeconomic status and grade point average for the "Low" occupational aspiration group. A low or zero correlation was expected for this group, but a negative correlation was not. Of course, since the observed negative correlation coefficient is not statistically significant from zero, it may be considered as simply a spurious variation from the zero point and thus unworthy of serious consideration. However, if it is considered worthy of some concern, an earlier discussion of the socioeconomic status variable may suggest a possible rationale. It was noted in Chapter III (p. 51-52) that one might logically expect high socioeconomic status to either hinder or assist a student in academic performance. From our present observation it may be posited that students with high socioeconomic family status, but with low occupational aspirations, are inclined to perform lower academically than

are students with low socioeconomic family status and also with low aspiration. There are several possible reasons why this is so. One, high socioeconomic background students are more likely to be in college in spite of their low aspirations because there are the economic means readily available to pay the cost. Academic performance for them may be of secondary importance and the object of a minimum of their efforts. On the other hand, the low socioeconomic background student is likely to be in college only because he is attempting to make the most of it, and probably with considerable economic sacrifices. Thus, academic performance for him is likely to be of major importance and the object of most of his efforts, in spite of his relatively low occupational aspiration (which is probably consistent with his cultural background). Two, high socioeconomic background students are more likely to have access to the means (primarily economic affluency) for placing many other concerns and activities above academic performance in his situational (college campus) value hierarchy. Low socioeconomic background students are not likely to have access to these means and thus are more singularly-directed toward favorable academic performance goals. Third, it would seem reasonable to suppose that selected high socioeconomic background students are more likely to have alternative means structures available to them for occupational achievement than low socioeconomic background students. Thus, these

selected students may not be as likely to treat the educational system as the only critical means structure and, if so, their behavioral patterns in the educational system cannot be expected to fit as closely to the theoretically-expected pattern of this study. All or any of these reasons, if valid, would lead one to expect a negative correlation between socioeconomic status and grade point average for the "Low" occupational aspiration group. This could also, in turn, lead one to hypothesize that high socioeconomic status tends to hinder the academic performance of those with low occupational aspiration but may facilitate those with high occupational aspiration (attitude strength). If this is true, it may explain in part the varying results of previous studies regarding the role of socioeconomic status in determining success or failure in college.¹⁸ All of this must, of course, be considered primarily speculation until further empirical evidence is available.

Sub-hypothesis 2.4

When the occupational aspiration is high, the correlation between perception of necessity of college and grade point average will be significantly higher than when the occupational aspiration is low.

The "z" test for significance of difference was not applied to the null hypothesis of no difference because face

¹⁸See Chapter III, pp. 50-51 of this thesis.

observation indicates, first, that the relationship is a negative one and, second, that the negative correlation coefficients are not significantly different in strength. Thus, the null hypothesis is accepted on both counts.

High	$r = -.090$	$N = 160$
(Medium	$r = .087$	$N = 202)$
Low	$r = -.100$	$N = 184$

This result, along with the previous evidence suggested in the testing of Hypothesis 1 and its sub-hypotheses and in the general test of Hypothesis 2 tends to bring rather conclusive data to support the argument that the perception of necessity of college facilitation variable, at least as measured for this sample, is inadequate. It was noted that there were extremely few respondents in this sample at the low end of the index used to measure it.¹⁹ Its general failure to discriminate between respondents (at least in the sample used here) on this variable was also noted.²⁰ Because the one-item instrument used to measure this variable is rather crude, and because it does not discriminate well among the individuals in the sample utilized in this research, and because the correlation coefficients

¹⁹See pp. 86-87 of this thesis; also see Appendix G.

²⁰See sub-hypothesis 1.4 p. 102 of this thesis and Hypothesis 2, pp. 114-116 of this thesis.

which obtain for each of the groups in this sub-hypothesis are not statistically significant from zero, it appears quite appropriate to consider the obtained coefficients as spurious variations around the zero point and thus indicative of no relationship. On the strength of this evidence, it must be concluded that perception of the necessity of college does not function as expected when used as a facilitation variable in this research design. This is concluded, however, not on the basis of known inherent weaknesses in the index, but rather on the basis of the nature of the sample used in this study. The latter is, of course, speculative and remains to be demonstrated by its use with other samples and in other operational settings.

Sub-hypothesis 2.5

When the occupational aspiration is high, the correlation between past performance and grade point average will be significantly higher than when the occupational aspiration is low.

The null hypothesis that the "High" level of occupational aspiration group would have a correlation coefficient between past performance and grade point average equal to or smaller than the "Low" group was tested.

High	$r = .618$	$N = 171$	$z' = .7201$		
(Medium	$r = .495$	$N = 216)$		$Z = 1.53$	$P < .07$
Low	$r = .507$	$N = 195$	$z' = .5587$		

The "z" test of significance indicates that the difference is not statistically significant at the .05 level of

probability and therefore the null hypothesis cannot be rejected. Thus, despite the fact that the statistic is extremely close to significance, the hypothesis that the correlation coefficient between past academic performance and grade point average is significantly higher for students with high occupational aspiration than for students with low occupational aspiration must be rejected.

The seemingly most probable source of this rejection is the same as that suggested as a possible source of rejection for sub-hypothesis 1.5.²¹ This rationale contends that, based upon evidence that past performance constitutes an indirect self concept of ability,²² the individual adjusts his occupational aspiration and self concept of ability in a consistent manner or direction. Consistent with the notion of "cognitive balance" discussed in Chapter II,²³ it is suggested that the student must bring his occupational aspiration and self-concept of ability into a consistent cognitive co-existence without stress in order to maintain a cognitive balance and prevent a condition of cognitive dissonance. If this is so, the observed values of "r" between past performance and grade point average would not be expected to differ significantly for different levels of

²¹See pp. 103-104 of this thesis.

²²See p. 54 of this thesis.

²³See pp. 21-23 of this thesis.

occupational aspiration. As was pointed out earlier, the validity of this rationale remains to be demonstrated. In any event, however, it seems to suggest a potentially fruitful area for future research.

Sub-hypothesis 2.6

When the occupational aspiration is high, the correlation between general facilitation and grade point average will be significantly higher than when the occupational aspiration is low.

In testing the null hypothesis that the "High" level of occupational aspiration group would have a correlation coefficient between general facilitation and grade point average equal to or smaller than the "Low" group, the following results obtained.

High	$r = .626$	$N = 151$	$z' = .7348$	$Z = 2.93$	$P < .002$
(Medium	$r = .541$	$N = 188$)			
Low	$r = .385$	$N = 175$	$z' = .4059$		

The "z" test statistic indicates that the null hypothesis may be rejected. Thus, the hypothesis that high level of occupational aspiration students have a significantly higher correlation coefficient between general facilitation and grade point average than do low level of occupational aspiration students is supported and may be accepted as tenable. These data provide additional evidence, along with that of the preceding sub-hypotheses, for the support of the general hypothesis and that portion of the theoretical framework from which it was obtained.

In regard to the sub-hypotheses, it must be noted that although the differences in correlation coefficients between the "High" and "Low" occupational aspiration groups are considerable and generally significant, the relatively high correlations obtaining for the "Low" group is not entirely consistent with the theoretical framework guiding this study. That is, one would theoretically expect to find a very low or zero correlation between facilitation and behavior for individuals with low attitude strength. The observed correlations here, however, are not entirely unanticipated. It must be stressed, again, that the lack of respondents in the sample at the theoretically low end of the attitude variable, level of occupational aspiration, suggests that even the "Low" group as defined in this thesis have a relatively high degree of attitude strength, that is, it is considerably higher than the theoretical zero point. Simply stated, the "Low" occupational aspiration group as defined in this thesis is not as low in aspiration as the label tends to suggest.

The foregoing tests of the sub-hypotheses tend to give rather substantial support to the tenability of the second general hypothesis. The control of level of occupational aspiration showed statistically significant differences which were expected for three of the individual facilitation variables (2.1, 2.2, and 2.3) and the general

facilitation variable (2.6). For two of the individual facilitation variables (2.4 and 2.5), expected statistically significant differences did not obtain and thus the hypotheses were rejected, although one showed a difference in the expected direction. The validity of the rationale presented regarding the possible sources of the two rejections remains to be demonstrated, however, it appears sound on the face of it and particularly in view of similar rejections experienced in the testing of sub-hypotheses 1.4 and 1.5 which involved the same facilitation variables.

In summary, then, the evidence provided by the foregoing tests of general hypothesis 2 and its six sub-hypotheses is accepted as support for the tenability of them, and of Postulate 2 of the theoretical framework. The implications of this decision will be discussed in a later section of this chapter.

Hypothesis 3

The third general hypothesis of the study is that there will be a positive correlation between the degree of facilitation offered by the attitude context and the level of occupational aspiration of individuals who are differentially facilitated to some degree. Since the present study assumes some degree of positive facilitation for all, this hypothesis may be tested by determining the significance of

the positive correlation which is expected to obtain between each of the controlled facilitation variables and level of occupational aspiration. The general facilitation index, constructed from the five variables, will also be included in the correlational analysis. In each case, the null hypothesis of no relationship will be tested by application of the "t" test of significance.²⁴ The testing of these six sub-hypotheses will constitute the test of the third general hypothesis and Postulate 3 of the theoretical framework.

Sub-hypothesis 3.1

Mental ability will be positively correlated with level of occupational aspiration.

The correlation coefficient obtained between these two variables was .261.

$$r = .261 \quad N = 584 \quad t = 6.54 \quad df = 582 \quad P < .01$$

Since the "t" value is statistically significant, the correlation of the two variables is significant and the null hypothesis of no relationship may be rejected. Thus the hypothesis may be accepted as tenable, that is, mental ability is positively correlated with level of occupational aspiration. This provides initial evidence for the theoretical position that facilitation may have an influence on

²⁴See footnote 2, p. 92 of this thesis for the statistical formula used in computation. Since direction is predicted in each case, the one-tailed test will be used.

attitudes.²⁵ In the present operational framework, it means that mental ability seems to have an influence on level of occupational aspiration.

Sub-hypothesis 3.2

Perceived reference group support will be positively correlated with level of occupational aspiration.

The correlation coefficient obtained between these two variables was .230.

$$r = .230 \quad N = 559 \quad t = 5.57 \quad df = 557 \quad P < .01$$

The obtained statistic permits the rejection of the null hypothesis of no relationship. Thus, the hypothesis that perceived reference group support is positively correlated with level of occupational aspiration is tenable and provides additional support for the general hypothesis.

Sub-hypothesis 3.3

Socioeconomic status will be positively correlated with level of occupational aspiration.

The correlation coefficient which obtains between these two variables is .085.

$$r = .085 \quad N = 552 \quad t = 1.99 \quad df = 550 \quad P < .03$$

The null hypothesis of no relationship is rejected on the basis of the statistically significant "t" value. The

²⁵See pp. 29-32 of this thesis.

hypothesis that socioeconomic status is positively correlated with level of occupational aspiration is supported and thus provides additional evidence for the tenability of the general hypothesis.

Sub-hypothesis 3.4

Perception of necessity of college will be positively correlated with level of occupational aspiration.

The obtained correlation coefficient between these variables is .265.

$$r = .265 \quad N = 546 \quad t = 6.41 \quad df = 544 \quad P < .01$$

The obtained "t" value allows rejection of the null hypothesis of no relationship. Therefore, the hypothesis is accepted as tenable, that is, the perception of necessity of college is positively correlated with level of occupational aspiration. This evidence for the general hypothesis is consistent with that provided by the previous three sub-hypotheses.

Sub-hypothesis 3.5

Past performance will be positively correlated with level of occupational aspiration.

The correlation coefficient between these two variables is .119.

$$r = .119 \quad N = 582 \quad t = 2.89 \quad df = 580 \quad P < .01$$

The null hypothesis of no relationship may be rejected on

the basis of the statistically significant "t" value. The hypothesis that past performance is positively correlated with level of occupational aspiration is thereby supported and may be considered tenable. Again, this finding is considered as additional support, consistent with the previously tested sub-hypotheses, for the general hypothesis.

Sub-hypothesis 3.6

General facilitation will be positively correlated with level of occupational aspiration.

The correlation coefficient which obtains between these two variables is .335.

$$r = .335 \quad N = 514 \quad t = 8.03 \quad df = 512 \quad P < .01$$

The "t" value obtained allows rejection of the null hypothesis of no relationship. Thus, the hypothesis that general facilitation will be positively correlated with level of occupational aspiration is supported and may be accepted as tenable. The acceptance of this final sub-hypothesis tends to give rather conclusive evidence in support of the general hypothesis.

In summary, the foregoing evidence makes tenable the acceptance of general hypothesis 3 which states that there is a positive correlation between the degree of facilitation offered by the attitude context and the level of occupational aspiration for individuals who are differentially facilitated to some degree. This, in turn, constitutes at least

the tentative acceptance of Postulate 3 of the theoretical framework.

Summary of Results

The analysis of data collected for this study provides support for the three general hypotheses of the thesis. On the whole, the predicted direction of correlations and differences in correlations is supported, thus suggesting that the theoretical framework employed in this research is a fruitful one for analysis of the attitude-behavior relationship. The several sub-hypotheses which are not statistically significant in support of the hypotheses do not provide substantial evidence to the contrary since, in each case, certain limitations in the research design and the sample used in this study tend to provide adequate rationale for the observed results.

In view of the present evidence, then, the three postulates offered by the theoretical framework are tentatively accepted. There must, of course, be a great deal of additional evidence before they may be accepted with confidence. In any event, however, the theoretical framework appears to be useful for empirical research. It may also be fruitful in clarifying some aspects of the relationship between attitudes and behaviors not adequately pursued in this preliminary study, although this remains to be demonstrated.

Table 2. Summary of Tests of Hypotheses

General Hypothesis	Variables	"r"	"t"	df	P <
1	Occupational aspiration and performance in college	.161	3.93	583	.01
2	General facilitation and performance in college	.534	14.30	512	.01
	<u>Individual Variables</u>				
	Mental ability	.542	15.56	582	.01
	Reference group support	.323	8.04	557	.01
	Socioeconomic status	.062	1.45	550	.05
	Necessity of college	.006	0.14	544	1.00 (n.s.)
	Past performance	.575	16.91	580	.01
3 ^a	General facilitation and occupational aspiration	.335	8.03	512	.01
	<u>Individual variables^b</u>				
	Mental Ability	.261	6.54	582	.01
	Reference group support	.230	5.57	557	.01
	Socioeconomic status	.085	1.99	550	.03
	Necessity of college	.265	6.41	544	.01
	Past Performance	.119	2.89	580	.01
Sub-Hypothesis	Variables	Controlled Variable	"r"	"Z"	P <
1.1	Occupational asp. and performance in college	Mental ability	Hi .168 Me -.058 Lo .066	1.01	.16 (n.s.)
1.2	Occupational asp. and performance in college	Reference group	Hi .191 Me .065 Lo -.049	1.82	.05
1.3	Occupational asp. and performance in college	Socio-economic status	Hi .332 Me .180 Lo .007	3.16	.001

^aThis also constitutes sub-hypothesis 3.6.

^bThese individual variables also constitute sub-hypotheses 3.1 to 3.5.

Several specific observations which were isolated during the analysis of the foregoing data are suggestive of problems which must be discussed here since they tend to have significant implications for further development of the theoretical framework guiding this study and for future research designs and analysis techniques.

First, the analysis of the data for purposes of testing the sub-hypotheses of general hypothesis 1 suggested that the facilitation variables may vary with respect to the level or threshold at which they tend to have an appreciable impact upon the relationship between level of occupational aspiration and college performance. The data thus tend to suggest and support the notion that facilitation variables vary in respect to the point or points on any index measuring them at which they "make a difference" in the relationship between the attitude and behavior, or the attitude and means behavior. Furthermore, the testing of the sub-hypotheses also suggests that certain facilitation variables have a greater impact upon the relationship between level of occupational aspiration and college performance than others. In short, the data tend to suggest and support the notion that facilitation variables have differential impacts upon the attitude-behavior relationship, that is, the importance of each facilitation variable in respect to the others may vary considerably.

The above observations, particularly when viewed together, tend to have important implications. Specifically, these observations suggest that a simple linear relationship does not exist between (1) facilitation variables, and (2) facilitation variables and attitude variables for optimum predictive efficiency of behavior. Thus, if this is so, statistical techniques which assume linearity are inadequate for observing the specific nature of (1) the relationship between facilitation variables and (2) the relationship between facilitation variables and the attitude variable for optimum predictive efficiency of behavior. This then implies that a more complex non-linear relationship may be occurring both between facilitation variables, and between facilitation variables and the attitude variable. If this is so, the correlational analysis used here, with its assumption of linearity, does not make clearly evident the relationships which do exist. Assuming that the above observations are correct, future research designs should attempt to develop and utilize appropriate non-linear statistical techniques for data analysis. Hopefully, the use of these techniques should provide new insights into the specific nature of the relationships between these variables and, in turn, into the nature of the attitude-behavior relationship. If this would in fact occur, the theoretical framework could be expanded to include notions regarding the more complex

nature of the interrelationships between these variables. It would then be more specific in suggesting how the variables are to be appropriately combined for optimum predictive efficiency of behavior. These implications for future research and theory will also be discussed further in the final chapter of this thesis.

Second, the observation of a negative correlation in the analysis of sub-hypothesis 1.6 leads the writer to suggest a rather speculative theoretical venture which might well serve as the object of more intensive research in the future. Since it is extremely speculative at this point, it is discussed here only from the standpoint of its possible theoretical implications if it obtained empirical support, and in the hope that it may stimulate the necessary empirical research efforts. Although the theoretical framework guiding this study does not now lead one to expect a negative relationship between attitudes and behavior, it is possible to speculate that under certain conditions of relatively high attitude strength and relatively low facilitation for enacting the attitude in overt behavior, the actor may experience severe frustrations in his efforts to carry the attitude into overt behavior and serious cognitive dissonances as he perceives and becomes aware of this lack of necessary facilitation. Thus, the frustrations and cognitive dissonances become a separate mediating variable producing even an additional hindrance to appropriate overt

behavior, which may result in a negative relationship between the attitude and the overt behavior. That is, the stronger the attitude (under conditions of low facilitation) the more serious becomes the hindrance from this mediating variable (more serious frustrations and dissonances), and thus the behavior with regard to the object of the attitude tends to become increasingly inconsistent with it. Thus, under this condition of extreme disparity between attitude strength and degree of facilitation for enacting the attitude in overt behavior, the possibility of a negative relationship between the attitude and behavior would exist. If empirical research efforts were directed at these conditions of disparity, and if the results of such research would support the argument presented above, the theoretical framework guiding the study could be expanded to account for and be predictive of the conditions under which these negative relationships would be expected to occur. The speculative nature of this argument must again be emphasized, since the data of this study do not actively and directly support it. In the cases of several other observed negative correlations in the present study, they seemed to be spurious variations from the zero point and thus indicative of no relationship between the variables. This possibility cannot be entirely ignored for the case upon which the above speculative argument is based.

In summary, then, in spite of the several limitations of this study, the data appear to be adequate and demonstrate generally that the predicted relationships between attitudes and behaviors, particularly means behaviors, do exist. Furthermore, the correlational analysis of the data provides at least tentative support for hypothesizing that statistical techniques which assume linear relationships are inadequate for providing specific and detailed information regarding the nature of the attitude-behavior relationship. This, of course, remains to be demonstrated empirically. If so, however, the theoretical framework guiding this study could be profitably expanded to include these notions regarding the non-linear interrelationship of the variables for optimum predictive efficiency of human behavior.

Summary of Behavioral Consequences

Since the hypotheses of this thesis have been accepted as tenable on the basis of the foregoing evidence, it should be possible to demonstrate that differential behaviors in the expected direction occur from (1) differential degrees of attitude strength and (2) differential facilitation for carrying the attitude into appropriate means behavior. Within the operational framework of this thesis, it should be possible to demonstrate that differential grade point averages and rates of dropout in the expected direction occur

from differential level of occupational aspiration and differential degree of facilitation from the attitude context. If this can in fact be empirically demonstrated, the utility of the variables for the prediction of academic behavior will be substantiated. If so, the variables employed in this operational framework could be utilized in the further pursuit of a multivariate non-linear statistical model (which was suggested by testing the hypotheses of this thesis) for optimum predictive efficiency of human behavior.

To demonstrate the utility of the attitudinal and facilitational variables in predicting differential academic behavior, we shall use (1) the mean level of performance in college (as measured by grade point average) and (2) the persistence in college for students in the several different categories of the sample by strength of attitude (occupational aspiration) and degree of facilitation.

If the hypotheses are tenable, then, it is possible to make the predictive statement that students with low occupational aspiration and low facilitation will display significantly lower levels of performance in college than will those students with high occupational aspiration and high facilitation. More generally, it may be predicted that the level of performance in college will vary directly with the combined level of occupational aspiration and degree of facilitation. Table 3 shows the data obtained which are

Table 3. Mean Level of Performance for Major Combined Categories of Occupational Aspiration and General Facilitation.

	Mean*	SD	No. of Cases	"t"	P <
High OA and GF	2.789	.641	80	5.02	.001
Medium OA and GF	2.285	.625	81	3.66	.001
Low OA and GF	1.899	.691	77		

* Mean Grade Point average based on grading system used at Michigan State University (A = 4.00, B = 3.00, C = 2.00, D = 1.00).

consistent with the prediction. It is noted, for example, that the average college performance for the "High" group is 2.789 (grade point average) while it is only 1.899 for the "Low" group. Thus, the "Low" group on the average performs unsatisfactorily in college. To determine the significance of the differences shown in Table 3, the difference of means test may be applied to the null hypothesis that no differences exist between the means of the different levels.²⁶ Application of the test to the difference between

²⁶The formula for the computation of "t" for purposes of the difference-of-means test is that suggested by Blalock:

$$t = \frac{(\bar{X}_1 - \bar{X}_2) - (u_1 - u_2)}{\hat{\sigma}_{\bar{X}_1 - \bar{X}_2}}$$

See Hubert M. Blalock, Jr., Social Statistics (New York: McGraw-Hill, 1960), p. 173.

the "High" and "Medium" categories shows a "t" value of 5.02 with 159 degrees of freedom which indicates that the null hypothesis may be rejected at the .001 level of probability. Similarly, when the test is applied to the difference between the "Medium" and "Low" categories a "t" value of 3.66 with 156 degrees of freedom is obtained indicating that the null hypothesis of no difference may be rejected at the .001 level of probability. Thus, it is observed that the expected relationship of

$$LOA_h F_h > LOA_m F_m > LOA_l F_l$$

is statistically significant at the .001 level of probability. The realization of this expected relationship tends to substantiate the utility of the variables used in this thesis.

In regard to persistence in college, assuming the hypotheses of this thesis are tenable, one may make the predictive statement that students with low occupational aspiration and low facilitation will drop out of college more frequently than will students with high occupational aspiration and high facilitation. More generally, it may be predicted that the rate of dropout will vary inversely with the combined level of occupational aspiration and degree of facilitation; or conversely, that the rate of persistence in college will vary directly with the combined level of occupational aspiration and degree of facilitation. Table 4 shows

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Table 4. Percent of Dropout and Non-Dropout for Major Combined Categories of Occupational Aspiration and General Facilitation

Dropout Status	Low OA and GF	Medium OA and GF	High OA and GF
Non Dropout	42.9%	67.9%	81.2%
Dropout	57.1%	32.1%	18.8%
Number of cases	77	81	80

$$\chi^2 = 25.92 \quad df = 2 \quad P < .001$$

the data obtained which are also consistent with this prediction. Note, for example, that only 18.8% of the "High" group dropped out of college while 57.1% of the "Low" group dropped out. The significance of the differences shown in Table 4 was determined by application of the Chi-square (χ^2) test.²⁷ A test of the null hypothesis of no difference was completed which allows rejection at the .001 level of probability. Thus, it is observed that the expected relationship with regard to persistence in college is also statistically significant. It also, therefore, lends support to the utility of the variables used in this thesis.

²⁷The formula for the computation of Chi-square is that presented by Blalock:

$$\chi^2 = \sum \frac{(f_o - f_e)^2}{f_e}$$

See Hubert M. Blalock, Jr., op. cit., p. 213.

The behavioral consequences of other combinations of degrees of occupational aspiration and facilitation may be observed in Appendix I. Except in two instances, all empirical behavioral differences tend to be in the direction expected. In the two instances cited, however, the variations from the expected are not statistically significant. In one instance, that of the "Medium" facilitation group, where the mean grade point average would be expected to vary directly with the level of occupational aspiration, it is found that the mean grade point average is highest for the "Medium" rather than for the "High" occupational aspiration group. Since the differences are extremely small, the probability of this occurring by chance appears to be relatively high, and thus the variation is considered to be spurious. The other instance of variation from the expected direction, although not statistically significant, may be more seriously considered. In the case of the "Low" facilitation group, the mean grade point average varies inversely with the level of occupational aspiration rather than directly as would be expected theoretically. Two explanations for this variation may be ventured. First, since it does not approach statistical significance, the possibility of a spurious variation must be considered. Second, it may be proposed that when occupational aspiration is relatively high but facilitation is low, goal-frustrations and dissonance-producing experiences are

both frequent and intense and thus operate as major deterrents to high level of college performance as well as enhance the rate of withdrawal from the situation (dropout rate). Since persons with low levels of occupational aspiration would not have these experiences, at least not with the frequency and intensity of the medium and high aspiration persons, their levels of performance are likely to be equal to or higher, and their rate of withdrawal equal to or lower than the higher aspiration individuals. Thus, it is found that the mean grade point average for the higher aspiration but low facilitation group is in fact somewhat lower than for the low aspiration and low facilitation group. Likewise, it is found that the rate of dropout for the high aspiration but low facilitation group is slightly higher (61.3%) than for the low aspiration and low facilitation group (57.1%). The feasibility of this latter explanation should of course be pursued in further research, since the theoretical implications are both obvious and significant. (It should be noted that these data and the accompanying argument are similar to, consistent with, and supportive of the proposed rationale for the negative correlation coefficient which obtained in sub-hypothesis 1.6--see pp. 108-112 of this thesis.)

In summary, the analysis of behavioral consequences demonstrates empirically the expected differential behavior which may logically be predicted from the variables utilized

in testing the hypotheses of this research. In brief, the expected differential behaviors did obtain from the appropriate differential levels of occupational aspiration and degrees of facilitation. Thus, the variables employed in the operational framework of this thesis should also have continued utility in the further pursuit of a multivariate non-linear statistical model (which was suggested by testing the hypotheses of this thesis) for the optimum prediction of differential human behavior from differential attitudes and facilitation.

CHAPTER V

SUMMARY AND CONCLUSIONS

This chapter of the thesis summarizes the observations of this research within the theoretical framework upon which the problem is based. It will include a general summary and evaluation of the empirical findings, some limitations of the study and suggestions for future research. Finally, some probable or at least tentative theoretical contributions and practical implications will conclude the chapter and the present study.

Summary

This thesis began with a theoretical framework from which three basic postulates regarding the relationship between attitudes and behavior were obtained and stated (Chapter II). Three general and testable hypotheses were derived from the postulates to be tested within the operational framework and research design of this study (Chapter III). These general hypotheses were then expanded to include several more specific sub-hypotheses dealing with very specific variables. Tests of the hypotheses thus constituted preliminary tests of the adequacy of the postulates.

The hypotheses and sub-hypotheses were tested against data collected from 585 new first-time freshmen students at Michigan State University in the fall of 1960. Additional data about these students were subsequently collected in the winter term of 1963. By the use of several specific instruments designed to elicit appropriate information from each student, and with access to official University records for obtaining other necessary information, insights into the nature of the relationship between level of occupational aspiration and level of performance in college were pursued.

In brief restatement, it was theoretically posited that an attitude may result in behavior toward an object and that it may also, in turn, result in behavior toward means of fulfilling specific object behavior. For a specific example, level of occupational aspiration (attitude) would be expected to result in occupational achievement (behavior) with respect to the occupational prestige hierarchy (object); and it also would be expected to result in educational achievement (means behavior) in the educational structure (means structure essential for placement in the occupational hierarchy). Because the behavioral consequences of an attitude always occur in situations, attitudes are differentially facilitated in their expression in behavior by the context of the attitude. Again, for a specific example, level of

occupational aspiration (attitude) is differentially facilitated in expression in educational behavior (means) by contextual factors such as perceived reference group support, mental ability, self-concept and the like. The postulates of the theoretical framework are, therefore, structured around three types of variables: attitudinal, facilitational, and behavioral. They predict certain interrelationships between these variables. The postulates are:

1. When individuals differ in their attitudes toward an object, and when the facilitation offered by the attitude context (or any one facilitation variable) is greater than zero, their attitudes will be positively correlated with their behavior with respect to the object and with respect to objects viewed as means for promoting their desired behavior toward the object of the attitude.
 - a. When the degree of facilitation offered by the attitude context (or any one facilitation variable) is high, the positive correlation will be significantly higher than when the degree of facilitation offered by the attitude context (or any one facilitation variable) is low.
2. When individuals differ in the degree to which their attitude contexts facilitate the expression of an attitude in behavior, and when their attitude strengths are greater than zero, there will be a positive correlation between the facilitation offered by the attitude context (or any one facilitation variable) and their behavior with respect to the object, and with the respect to objects viewed as means for promoting their desired behavior toward the object of the attitude.
 - a. When the attitude strength is high, the positive correlation will be significantly higher than when the attitude strength is low.
3. When the degree of facilitation offered by the attitude context (or any one facilitation variable) varies among individuals, there will be a positive correlation between the degree of facilitation offered by the attitude context (or any one facilitation variable) and the attitude strength.

The empirical findings of the present study appear, on the whole, to substantiate the adequacy of the postulates. The three general hypotheses, derived from the postulates, were found to be tenable as stated and thus constitute a test of the adequacy of the postulates.

The data show that Hypothesis 1 is tenable, and it has been tentatively accepted. These data indicate that level of occupational aspiration is positively correlated with level of performance in college for individuals who in some degree are positively facilitated by the environment within which they operate physically, socially and psychologically. The evidence from the tests of the sub-hypotheses is not entirely clear and conclusive; however, the bulk of the evidence tends to support them. The tenability of the sub-hypotheses tends to suggest that the degree to which level of occupational aspiration and level of performance in college are correlated varies directly with the degree of facilitation obtained. In theoretical terms, then, the data indicate that attitudes are positively correlated with means behavior and that the degree of correlation tends to be directly related to the degree of facilitation provided by the physical, social and psychological environment of the individual and his attitude. This observation provides direct support for Postulate 1 and constitutes a test of its adequacy. It must, of course, be emphasized that these data can only partially

test the adequacy of the postulate because the present research design deals with means behavior, and presumes a similar relationship of attitude with object behavior. Although there is substantial evidence to suggest that this presumed relationship does exist, empirical data are necessary to substantiate it and to complete the test of adequacy of the postulate. Obviously, if the expected relationship of attitude and object behavior does not obtain empirically, the present theoretical framework must be thrown into serious question.

Hypothesis 2 is similar to the first hypothesis but is focused upon the relationship of facilitation and behavior. The data again indicate that it is tenable, and it has been tentatively accepted. The data show that the degree of facilitation is positively correlated with level of performance in college for individuals who have some degree of positive occupational aspiration. Furthermore, the general support of the sub-hypotheses indicates that the degree to which these variables are correlated varies directly with the level of occupational aspiration. In theoretical terms, the data indicate that means behavior is positively correlated with facilitation and that the degree of correlation tends to be directly related to the strength of the attitude toward the object. This finding supports directly Postulate 2 and constitutes a test of its adequacy. For the same reasons as

indicated in Hypothesis 1 above, however, these data constitute in fact only a partial test of the adequacy of the postulate.

The third hypothesis, focusing upon the relationship of facilitation and attitude, was also found to be tenable by the present data and is accepted on that basis. The data indicate that a positive correlation between degree of facilitation and level of occupational aspiration does exist for individuals who are differentially facilitated to some degree. In theoretical terms, facilitation is positively correlated with attitude strength for individuals with some degree of facilitation. This observation provides direct support for Postulate 3 and constitutes a test of its adequacy. As in the previous hypotheses, this constitutes in fact only a partial test of the postulate since our present research design deals only with means behavior, and theoretically assumes that a direct ends-means relationship does exist between the occupational prestige (or socioeconomic) hierarchy and the formal educational structure in our society. The latter assumption is made, of course, in light of considerable and substantial evidence in support of it. But empirical data in direct support of it are still needed.

The present study, in its support of the above postulates through establishing the tenability of the derived hypotheses, substantiates the theoretical position that there

is considerable interaction and interrelationship between the three types of variables essential to it. The observations of this study provide empirical support for the existence of these interrelationships and preliminary insights into the more specific nature of them. Obviously, a considerable amount of additional research is needed to further clarify some aspects of these interrelationships, and thus eventually raise the optimum predictability of human behavior in this framework.

The relatively low correlation coefficients observed in this study may require discussion. There are several reasons why high correlation coefficients were not to be anticipated. The first reason was pointed out in some detail in an earlier section of the thesis.²⁸ It may be briefly stated as a limitation of the sample evidenced by a relatively limited range of variability on several critical independent variables. The nature of the sample, a college group, was such that this limited range of variability could be logically expected, and thus also the lower correlation coefficients than might be expected from a sample with a broad range of variability.²⁹ It was also to this limitation of the sample

²⁸See Chapter III, "Limitations of the Sample," pp. 85-90 of this thesis.

²⁹See Blalock, op. cit., pp. 290-291.

that several statistically non-significant results were attributed.

Second, the fact that the research design used in this study utilizes a means behavior variable rather than the object variable makes it only logical to expect somewhat lower correlation coefficients than if the latter had been used. The logic of this expectation must of course be found in the imperfections of the means-ends relationship between educational achievement and occupational achievement. Even though this means-ends relationship in our society is extremely rigid and tenacious, there is obviously some degree of freedom within the means-and object-structure relationship for selected individuals. Thus, the necessarily imperfect nature of the means-ends relationship probably tends to deflate the correlation coefficients obtained.

Third, the lapse of time between measurement of the attitude variable (level of occupational aspiration) and the behavioral variable (grade point average) was considerable (about two and one-half years), thus allowing for considerable change or adjustment both in the attitude and in the conditions of facilitation. An almost infinite number of reasonable examples of this type of change could be cited. A few may suffice. A student quite conceivably may change some of his reference groups while in college, or at least additional ones are added, or their hierarchy of importance

in his perception may be restructured. High school peers, teachers, and counselors probably become less important while college groups and associations become more important as reference groups and individuals. Also, the first term or several terms of academic performance may change the student's self concept of ability; a change in conditions of facilitation which may have an effect upon the attitude, that is, the level of occupational aspiration. Furthermore, new associations and new exposures to information about the occupational world provided on the college campus may cause changes and adjustments in the previously measured attitude. In any event, it is obvious from these few examples that changes in attitude and conditions of facilitation must function to reduce the size of the correlation coefficients obtained.

Fourth, there is an almost infinite number of possible facilitation variables which may be operative and functional. Only several of these were measured and controlled in this study. The failure to measure the full set of facilitators probably also tends to deflate the correlation coefficients. For the above reasons, then, it would have been logically unrealistic to expect high correlation coefficients in this study.

Finally, in addition, the tests of the sub-hypotheses of Hypothesis 1 in the present study have presented some evidence to at least tentatively suggest that statistical

techniques which assume linear relationships (thus including the correlation coefficient) between the variables are probably not adequate to observe the relationships which do in fact exist between them. Of course, if this is so, it would constitute another reason for low correlations to obtain between the variables when utilizing this theoretical framework.

From the theoretical position of this study, it would be contended that except for differentially facilitating factors in the attitude context, an attitude will always be carried into behavior. The critical role of the attitude context, and thus the facilitation variables, in the present theoretical framework is then obvious. The data of this study tend to suggest that the optimum control of facilitation is necessary if the attitude-behavior relationship is to be scientifically pursued and eventually understood more clearly. The optimum control of facilitation, however, appears to be a most difficult and complex task in the design of research. We may briefly evaluate the present study in this regard and possibly gain some insight into the problem.

The facilitation variables used in this study were selected on the basis of their hypothesized relevance as differential facilitators to behavior in respect to the means structure of the object of the attitude. In specific, they were selected on the basis of their hypothesized relevance

for differentially facilitating level of performance in college. Unfortunately, the logical basis of such hypotheses is unclear. We generally select such variables on the basis of "sociological experience." We do not have a set of general rules for selecting all possibly relevant facilitation variables worthy of consideration in any given problem. The primary reason this is so appears to be the fact that facilitation variables relevant for one action variable are not necessarily relevant for another. Thus, the best method now known seems to be the selection of facilitation variables on the basis of their logical relevance to the object of the attitude or its means structure, depending upon the specific problem.

The "logical relevance" method for the selection of facilitation variables was relatively successful in the present study. Empirically it was found that four of the five selected facilitation variables were worthy of consideration in the operational framework used in this study. The perception of the necessity of college variable was found to be inadequate for two reasons. First, the apparent homogeneity of the sample in regard to its perception of the necessity of college caused all respondents to score high on the instrument used to measure this variable. Second, and probably a result of the first reason, failure of the instrument to empirically discriminate between the respondents of

the sample gave this variable minimal utility. The other four facilitation variables--socioeconomic status, mental ability, past academic performance (self concept of ability), and the perception of reference group support--tended to behave predictably as differential facilitators in the attitude context and should be considered in future research with a similar operational framework. However, several problems in regard to the attitude context must be resolved if future research is to make continued profitable inroads into the better understanding of the attitude-behavior relationship. These may be discussed both as limitations of the present study and as suggestions for future research.

Limitations of the Study and Suggestions For Future Research

A number of limitations of the present study and possibilities for future research have already suggested themselves or have been mentioned previously in the study. However, several specific suggestions arising out of these limitations may be discussed briefly. These constitute logical extensions of the present study.

First, the present study leads one to contend that the attitude context must be more rigidly controlled in future experimental designs. It seems extremely necessary that we place much more rigid controls on the attitude context so that it becomes much more feasible to isolate all or

most of (1) the relevant facilitation variables and (2) the factors possibly effecting change in the attitude variable prior to measurement of the behavioral variable. This is a difficult task. In the present study, one may contend that countless other possible facilitation variables could have, and possibly should have, been controlled. It is obviously true that many others could have been operative, even though not logically relevant and thus difficult to isolate and deem worthy of control when structuring the research design. Similarly, one may contend that the present study allowed for many factors of change in both facilitation and attitude to be operative between the time of attitude measurement and behavior measurement. This also is obviously true, even though we have no empirical measure of this kind of change and what effect it may have had upon the results. In any event, both of these contentions reflect less control of the attitude context than would have been desirable. A more parsimonious research design allowing for more rigid control of the attitude context should contribute additional insights into the nature of the attitude-behavior relationship.

Second, once the facilitation variables worthy of consideration in a specific research design are selected and isolated, a more complete analysis of the nature of the relationship between them is required so that a more satisfactory means of combining the effects of each in a prediction equation may be developed. The present study utilized a simple

additive combination of these variables in the development of a general facilitation index. Although this is a satisfactory preliminary technique, there are at least two reasons why it lacks the potential of producing optimum predictive efficiency. One, there is good reason to believe that not all facilitation variables have equal importance as facilitators of a given attitude toward its appropriate behavioral response. In fact, some minimum degree of facilitation from a given variable may be absolutely necessary if the appropriate behavioral response is to occur.³⁰ Two, the present study suggests that facilitation variables may vary in respect to the level or threshold at which they "make a difference" in the relationship between the attitude and behavior.³¹ Thus, linear relationships probably do not exist between facilitation variables, or between their

³⁰For example, mental ability may be crucial for academic or occupational performance; without a certain amount of it, persons could not be able to perform; but, beyond a certain point, additional increments of mental ability may not be associated with similar increments in performance. If this is so, a multiple cut-off method similar to that used for occupational norms on test batteries by the U.S. Employment Service should be used. A minimum or critical score is established on each significant aptitude. See Donald L. Grant (ed.), "Validity Information Exchange," Personnel Psychology, 1955, Vol. 8, p. 105.

³¹For example, on a mental ability index probably only variations above or below a certain point make a considerable difference in the occupational aspiration-performance in college relationship; or possibly variations between two points make little difference but variations either above or below these points make considerable differences in this relationship.

combined effects and the attitude. The simple additive combination of facilitation variables into a general index takes neither of these facts into account and thus may lose much precision in the act of combining. However, on the other hand, there are also at least three reasons to suggest that a simple multiple regression technique for combining facilitation variables is not satisfactory in this framework. One, multiple regression yields a composite index based on a combination of several variables and consequently also throws away much information by reducing several facilitation dimensions to one.³² Two, multiple regression weights permit a high degree of one facilitation variable to compensate for a low degree of another possibly more critical facilitation variable. Three, the multiple regression method assumes linearity and takes no account of the possible optimum level of each of the variables. An equation utilizing the multiple cut-off method,³³ or a modification thereof, in combination with a non-linear multiple regression technique should be developed in an attempt to maximize the impact or effect of facilitators upon the attitude-behavior relationship. A computer program

³²See Eugene L. Gaier and Marilyn C. Lee, "Pattern Analysis: The Configural Approach to Predictive Measurement," Psychological Bulletin, 1953, Vol. 50, pp. 140-148.

³³Beatrice J. Dvorak, "Advantages of the Multiple Cut-Off Method," Personnel Psychology, Vol. 9, 1956, pp. 45-47.

could conceivably be developed to do this, but it should do more than this. One additional task should be incorporated. In addition, the computer program should be so developed that a predictive equation in which the optimum predictive efficiency of behavior on the basis of some combination of attitude and facilitation is obtained. Presently one would expect this latter combination to be accomplished by some type of non-linear correlation technique. In summary, then, a computer program should be developed to simultaneously (1) determine scale points or scale areas on the index measuring each controlled facilitation variable at which it has optimum impact upon the relationship between the attitude (independent variable) and the behavior (dependent variable), (2) determine the relative importance of each of the controlled facilitation variables as opposed to the others and assign appropriate weights to each for optimum combined impact of the facilitators upon the relationship between the attitude and the behavior, and (3) relate the attitude variable and the combined facilitators to obtain the optimum predictive efficiency of behavior. The development of such a computer program and its subsequent utilization could contribute many new insights into our present problem. Thus it would also contribute much to our present knowledge of the nature of the attitude-behavior relationship.

Finally, measurement techniques must continually be improved so that the sophistication of the data analysis may be enhanced. This must be the objective of the researcher in this field, and of social psychologists generally, if valid contributions to knowledge are desired. In our present state of knowledge, limitations of measurement must always be considered in evaluating data analysis. The present study has utilized several rather crude measurement devices, particularly in the measurement of facilitation variables, which should be considered in the evaluation of the results of this study and be improved by future researchers utilizing these or similar variables. This problem of measurement, of course, is not unique to this study. Since measurement lies at the very heart of social psychology, continued improvement in measurement techniques is imperative.

In spite of the several limitations of this study, it is felt that it has demonstrated generally that the predicted relationships between attitudes and behaviors, particularly means behaviors, do exist and that the theoretical framework guiding this research is worthy of continued consideration in the development of further empirical pursuits and theoretical schemas. Although a considerable amount of additional research is needed to clarify some of the aspects of the relationships observed, it is felt that this initial study has a number of contributions and implications for social

psychologists, and behavioral scientists generally, who are concerned with the analysis and understanding of this relationship between attitudes and behaviors.

Theoretical Contributions

It is felt that there are several theoretical contributions made by the present study. These contributions are, of course, tentative insofar as much additional evidence is necessary. But it can be legitimately posited, again emphasizing that the findings of this study must be interpreted with particular caution, that the following contributions hold potential validity for the eventual development of a more comprehensive theory of differential behavior.

The most general theoretical contribution is that the present study appears to provide empirical evidence for the theoretical framework upon which it is based. Thus, the major part of Chapter II of this thesis constitutes a considerable contribution. However, more specific contributions to this general theoretical framework can be isolated on the basis of the data obtained and analyzed in the study.

First, the present study emphasizes and apparently substantiates the very critical role which the attitude context plays in the fundamental attitude-behavior relationship. The evidence presented in this research suggests that the facilitation variables operative within the attitude context

are major factors to be considered when explaining why attitudes are not always consistent with overt action behavior. It thus suggests that systematic concern with the attitude context is essential if new insights into the nature of the attitude-behavior relationship are to be obtained and if significant strides toward the development of a valid theory of differential action are to be made. This systematic concern with the attitude in relation to the context in which it is enacted in overt behavior should also provide additional knowledge which could change some past as well as current conceptions and theories regarding attitudes generally.³⁴ This, in turn, would have considerable impact upon present sociological and social psychological thinking.

Second, the present study provides some tentative suggestions regarding how the two key types of variables (attitudinal and facilitational) of the theoretical framework may be combined for optimum prediction of differential behavior. Although future research must determine the utility of it, the present study tends to suggest a general "formula" for combination of attitudinal and facilitational variables for optimum predictive efficiency of overt behavior. The general "formula" may be stated as follows:

³⁴ For a review of some of these, see De Fleur and Westie, 1963, op. cit.

$$B = (f)A[F_1w_1 + F_2w_2 + F_3w_3 \dots F_nw_n]$$

where

B = overt behavior toward the object or means object of the attitude

A = attitude toward the object

F = each facilitation variable "optimally scaled" in respect to its impact on the attitude-behavior relationship

w = the "weighted importance" of each facilitation variable in comparison with others in respect to the impact it has upon the attitude-behavior relationship

and where each F is optimally scaled. Hopefully, the exact nature of the "formula" should be better determined on the basis of future research utilizing a computer program similar to that suggested and discussed earlier. Fundamentally, however, the general "formula" hypothesizes non-linear relationships between the variables, and thus implies that non-linear statistical techniques, rather than the more traditional linear techniques, must be developed and utilized in empirical research if theoretical advances of significant consequence are to be accomplished.

Third, this research provides empirical support, although tentative, for the existence of the means-ends relationship of various objects in respect to given attitudes. The data suggest that there is a means-ends relationship between educational achievement and occupational achievement in American society on the basis of the observation that differential academic performance may be generally predicted from

level of occupational aspiration (attitude toward the occupational hierarchy) used together with facilitation variables. This, in turn, supports the notion that the educational and occupational structures in American society stand in a means-ends relationship in which persons' positions in one structure differentially determine or allocate their positions in the other. Theoretically, then, these data tentatively posit that where a means-ends relationship does exist between two or more objects, overt action behavior toward any one may be differentially predicted on the basis of attitudes (used together with facilitation variables) regarding any one.

Finally, the data of this study validate the notion that there is a considerable amount of interaction between the three types of variables basic to the theoretical framework: attitudinal, facilitational, and behavioral. Although the present study only begins to describe the nature of these interrelationships, it seems to establish the fact that they do exist and that a great deal more must be learned about them if the theoretical framework is to provide maximum utility in future empirical and theoretical pursuits. Particularly in this regard, the observations of the present study should be hypothesis-producing for future studies.

Practical Implications

The theoretical observations of the present study suggest several practical implications which may be briefly mentioned here. The data utilized in this study relate directly to such practical concerns as student guidance, counseling and selection for college. Thus, the practical implications are oriented in the direction of these facets of the American educational system.

The present study lends support to the recent interest in the predictive value of "non-intellectual" factors in academic achievement, particularly at the college level.³⁵ The apparent role of occupational aspiration in determining differential academic performance, portrayed in this study, is evidence of one such factor. Furthermore, the significant role of the perception of reference group support as a facilitating variable in this study further suggests the relative importance of sociopsychological factors as differential determinants of academic performance. The continued use of these types of factors in research should enhance our

³⁵See Donald R. Brown, "Personality, College Environment, and Academic Productivity," (Chapter 16) and Joshua A. Fishman, "Some Social-Psychological Theory for Selecting and Guiding College Students," (Chapter 20) in The American College, (edited by Nevitt Sanford), op. cit.

present ability to predict success or failure in college and eventually lead to more practical application of this knowledge in college and university selection practices and procedures as well as in junior high school and high school counseling and guidance programs.

Selection practices in most colleges and universities today consist of the consideration of some combination of intellectual factors (aptitude scores, achievement scores, and high school rank and grades) and personal assessments or appraisals (recommendations, personality factor ratings, and personal interviews) by several persons (high school principal, high school counselor, admissions officers, etc.) who are supposedly knowledgeable about either the student or some clinical methods of appraisal. It is interesting to note that these methods, although varying from time to time and from one institution to another, have changed basically not at all over the past half-century. Furthermore, literally thousands of studies (mostly under the rubric of "predictive" studies) have been completed using these variables, particularly the intellectual variables. Again, it is interesting to note that the extent of the relationship between these variables and college performance has remained essentially the same for all institutions for the past 50 years (correlations generally between .45 and .60). In this light, then, it is not astounding to note that large numbers

of freshmen who enter colleges and universities with the intention of graduating do not graduate--somewhere around 50 per cent for the entire nation. Irrespective of the multiple reasons given for this, the fact remains that this attrition rate represents a considerable loss of human resources and a far from optimum efficiency in the functioning of colleges and universities. From a practical perspective, then, the development of instruments and other techniques for the evaluation of these "non-intellectual" and primarily social psychological factors, which are currently proving themselves more worthy of consideration in predictive efforts, should be actively sought.

Furthermore, since most of these factors are social psychological in nature, it would seem logical that much could also be done to instill the desirable aspects of each of these isolated factors in adolescents during the socialization process; particularly during the junior high school and high school years. For example, the use of the Occupational Aspiration Scale as an attitude measure in this study suggests that much more must be learned about how occupational aspiration develops as an attitude in the individual and what can be done to engineer that development. Again, the means-ends relationship which apparently exists between the educational and occupational structures in American society, which relationship is substantiated in the present study,

suggests that if we could learn how to change levels of aspiration and levels of facilitation through various counseling and guidance techniques we could deliberately determine to some extent a youngster's relative success in either the means or ends structure, that is, in either educational or occupational achievement. Obviously, behavioral scientists and educators have only begun to empirically develop these areas of concern and thus the practical applications will not be immediate--but the little evidence which does exist looks promising. In any event, the practical implications of this study, and many other studies dealing with similar variables, for the applied fields of counseling and guidance are both numerous and obvious. Thus, the applied researcher may also derive from the present study some practical hypotheses for further testing.

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APPENDIX A

OCCUPATIONAL ASPIRATION SCALE AND CODE

Scoring Instructions

Occupational Aspiration Scale

All eight questions are scored the same.

There are ten alternatives for each question, and only one alternative may be checked.

The scores for each alternative are as follows:

<u>Alternative</u>	<u>Score</u>
1	7
2	4
3	8
4	2
5	9
6	0
7	6
8	3
9	5
10	1

The total score is the sum of the scores for each of the eight questions.

COCUPATIONAL ASPIRATION SCALE

Copyright 1957
By Archie C. Haller

Form X

YOUR NAME: _____ Your Student Number: _____

INSTRUCTIONS: This set of eight questions concerns your feelings about different kinds of jobs. Each one asks you to choose ONE job out of ten presented. This is not a test. There are no right or wrong answers except what is right or wrong for YOU.

Indicate your choice by marking an ☒ in the square next to the job.

Read each question CAREFULLY. They are all DIFFERENT.

Answer each one the best you can. DO NOT OMIT ANY.

Be sure your name is on the top of this page.

QUESTION 1: Of the jobs listed in this question, which is the BEST ONE you are REALLY SURE YOU CAN GET when your SCHOOLING IS OVER?

- 1.1 ☐ Lawyer
- 1.2 ☐ Welfare worker for a city government
- 1.3 ☐ United States representative in Congress
- 1.4 ☐ Corporal in the Army
- 1.5 ☐ United States Supreme Court Justice
- 1.6 ☐ Night watchman
- 1.7 ☐ Sociologist
- 1.8 ☐ Policeman
- 1.9 ☐ County agricultural agent
- 1.10 ☐ Filling station attendant

QUESTION 2: Of the jobs listed in this question, which ONE would you choose if you were **FREE TO CHOOSE ANY** of them you wished when your **SCHOOLING IS OVER?**

- 2.1 ☐ Member of the board of directors of a large corporation
- 2.2 ☐ Undertaker
- 2.3 ☐ Banker
- 2.4 ☐ Machine operator in a factory
- 2.5 ☐ Physician (doctor)
- 2.6 ☐ Clothes presser in a laundry
- 2.7 ☐ Accountant for a large business
- 2.8 ☐ Railroad conductor
- 2.9 ☐ Railroad engineer
- 2.10 ☐ Singer in a night club

QUESTION 3: Of the jobs listed in this question which is the **BEST ONE** you are **REALLY SURE YOU CAN GET** when your **SCHOOLING IS OVER?**

- 3.1 ☐ Nuclear physicist
- 3.2 ☐ Reporter for a daily newspaper
- 3.3 ☐ County judge
- 3.4 ☐ Barber
- 3.5 ☐ State governor
- 3.6 ☐ Soda fountain clerk
- 3.7 ☐ Biologist
- 3.8 ☐ Mail carrier
- 3.9 ☐ Official of an international labor union
- 3.10 ☐ Farm Hand

QUESTIONS TO BE ANSWERED	YES	NO
1. Do you have any other children living with you?	☐	☐
2. Do you have any other children living with you?	☐	☐
3. Do you have any other children living with you?	☐	☐
4. Do you have any other children living with you?	☐	☐
5. Do you have any other children living with you?	☐	☐
6. Do you have any other children living with you?	☐	☐
7. Do you have any other children living with you?	☐	☐
8. Do you have any other children living with you?	☐	☐
9. Do you have any other children living with you?	☐	☐
10. Do you have any other children living with you?	☐	☐

QUESTIONS TO BE ANSWERED	YES	NO
1. Do you have any other children living with you?	☐	☐
2. Do you have any other children living with you?	☐	☐
3. Do you have any other children living with you?	☐	☐
4. Do you have any other children living with you?	☐	☐
5. Do you have any other children living with you?	☐	☐
6. Do you have any other children living with you?	☐	☐
7. Do you have any other children living with you?	☐	☐
8. Do you have any other children living with you?	☐	☐
9. Do you have any other children living with you?	☐	☐
10. Do you have any other children living with you?	☐	☐

QUESTION 4: Of the jobs listed in this question, which ONE would you choose if you were FREE TO CHOOSE ANY of them you wished when your SCHOOLING IS OVER?

- 4.1 ☐ Psychologist
- 4.2 ☐ Manager of a small store in a city
- 4.3 ☐ Head of a department in state government
- 4.4 ☐ Clerk in a store
- 4.5 ☐ Cabinet member in the federal government
- 4.6 ☐ Janitor
- 4.7 ☐ Musician in a symphony orchestra
- 4.8 ☐ Carpenter
- 4.9 ☐ Radio announcer
- 4.10 ☐ Coal miner

QUESTION 5: Of the jobs listed in this question, which is the BEST ONE you are REALLY SURE YOU CAN HAVE by the time you are 30 YEARS OLD?

- 5.1 ☐ Civil engineer
- 5.2 ☐ Bookkeeper
- 5.3 ☐ Minister or Priest
- 5.4 ☐ Streetcar motorman or city bus driver
- 5.5 ☐ Diplomat in the United States Foreign Service
- 5.6 ☐ Share cropper (One who owns no livestock or farm machinery, and does not manage the farm)
- 5.7 ☐ Author of novels
- 5.8 ☐ Plumber
- 5.9 ☐ Newspaper columnist
- 5.10 ☐ Taxi driver

QUESTION 6: Of the jobs listed in this question, which ONE would you choose to have when you are 30 YEARS OLD, if you were FREE TO HAVE ANY of them you wished?

- 6.1 ☐ Airline pilot
- 6.2 ☐ Insurance agent
- 6.3 ☐ Architect
- 6.4 ☐ Milk route man
- 6.5 ☐ Mayor of a large city
- 6.6 ☐ Garbage collector
- 6.7 ☐ Captain in the army
- 6.8 ☐ Garage mechanic
- 6.9 ☐ Owner-operator of a printing shop
- 6.10 ☐ Railroad section hand

QUESTION 7: Of the jobs listed in this question, which is the BEST ONE you are REALLY SURE YOU CAN HAVE by the time you are 30 YEARS OLD?

- 7.1 ☐ Artist who paints pictures that are exhibited in galleries
- 7.2 ☐ Traveling salesman for a wholesale concern
- 7.3 ☐ Chemist
- 7.4 ☐ Truck driver
- 7.5 ☐ College professor
- 7.6 ☐ Street sweeper
- 7.7 ☐ Building contractor
- 7.8 ☐ Local official of a labor union
- 7.9 ☐ Electrician
- 7.10 ☐ Restaurant waiter

1. The first part of the report is a general introduction to the subject of the study. It discusses the importance of the study and the objectives of the research.

2. The second part of the report is a detailed description of the methodology used in the study. It includes information about the sample size, the data collection methods, and the statistical analysis techniques.

3. The third part of the report is a discussion of the results of the study. It presents the findings of the research and compares them with the previous studies in the field. It also discusses the limitations of the study and the implications of the findings.

4. The fourth part of the report is a conclusion. It summarizes the main findings of the study and provides recommendations for future research.

5. The fifth part of the report is a list of references. It includes all the sources used in the study, such as books, articles, and websites.

QUESTION 8: Of the jobs listed in this question, which CNE would you choose to have when you are 30 YEARS OLD, if you were FREE TO HAVE ANY of them you wished?

8.1 ☐ Owner of a factory that employs about 100 people

8.2 ☐ Playground director

8.3 ☐ Dentist

8.4 ☐ Lumberjack

8.5 ☐ Scientist

8.6 ☐ Shoeshiner

8.7 ☐ Public school teacher

8.8 ☐ Owner-operator of a lunch stand

8.9 ☐ Trained machinist

8.10 ☐ Dock worker

DO NOT WRITE BELOW THIS LINE

R-ES = 1 + 3 (A)

ES = _____ (A + B)

I - ES = 2 + 4 (B)

30 = _____ (C + D)

R - 30 = 5 + 7 (C)

R = _____ (A + C)

I - 30 = 6 + 8 (D)

I = _____ (B + D)

TOTAL CAS SCORE = _____ (R + I)

There is a 100% increase in the number of
 cases of the disease in the last 10 years.
 The number of cases is 1000 in 1990 and
 2000 in 2000.

Assume that the number of cases is 1000 in 1990 and

2000 in 2000.

Let x be the number of cases in 1990.

Then the number of cases in 2000 is $2x$.

Let y be the number of cases in 1990.

Then the number of cases in 2000 is $2y$.

Let z be the number of cases in 1990.

Then the number of cases in 2000 is $2z$.

Let w be the number of cases in 1990.

Then the number of cases in 2000 is $2w$.

Let

x be the number of cases in 1990 and y be the number of cases in 2000.

Then the number of cases in 1990 is x and the number of cases in 2000 is y .

Let x be the number of cases in 1990 and y be the number of cases in 2000.

Then the number of cases in 1990 is x and the number of cases in 2000 is y .

Let x be the number of cases in 1990 and y be the number of cases in 2000.

Then the number of cases in 1990 is x and the number of cases in 2000 is y .

APPENDIX B

DATA CARD FORMAT AND CODE

Card LayoutColumn

1	
2	
3	Student number
4	
5	
6	
7	Age
8	Marital status
9	Hometown address
10	Stated occupational aspiration (s-e)
11	
12	Socioeconomic index of stated OA
13	
14	Blank
15	Academic program
16	Father's occupational status (s-e)
17	
18	Socioeconomic index of father's OS
19	
20	Perception of difficulty of means behavior
21	Father's education
22	Mother's occupational status (s-e)
23	
24	Socioeconomic index of mother's OS
25	Mother's education
26	High school class rank
27	H.S. principal prediction of success
28	
29	MSU GPA at end of last term of 1st year
30	
31	MSU GPA at end of last term, 1st year (category)
32	
33	MSU GPA at end of second year
34	

Column

35 MSU GPA at end of second year (category)
 36 OAS realistic choice level total score
 37
 38 OAS idealistic choice level total score
 39
 40 OAS level of aspiration (total)
 41
 42 Parental support (encouragement)
 43 Parental expectations (not encouragement)
 44 High school counselor support
 45 High school teacher support
 46 High school peer support
 47 Greatest source of support
 48 Personal reason for going to college
 49 Peer support (active)
 50 Perception of college as essential means
 51 Female aspirations
 52 Persistence in college
 53 Significance of parents
 54 reference groups peers
 55 in college decision counselor
 56 teacher
 57
 58 High school GPA
 59
 60 Dropout status (1st year)
 61 Dropout status (2nd year)
 62 Reason given for dropout
 63
 64 College Qualification Test raw score
 65
 66 CQT percentile score
 67
 68 CQT percentile category
 69
 70 MSU Reading test raw score

Column

71	MSU Reading test percentile score
72	
73	MSU English Placement test raw score
74	
75	MSU English Placement test percentile score
76	
77	Sex
78	Combined reference group support
79	Combined facilitation index score
80	

CODING KEY

ENTERING FRESHMEN AT MICHIGAN STATE UNIVERSITY, FALL 1960

Card 1

Column No.

- 1-6 Person identification (student number)
- 7 Age at college entrance
- 0 - under 16 years of age
 - 1 - 16 years
 - 2 - 17 years
 - 3 - 18 years
 - 4 - 19 years
 - 5 - 20 years
 - 6 - 21 years
 - 7 - over 21 years
 - Y - no answer
- 8 Marital status at college entrance
- 0 - single
 - 1 - married
 - Y - no answer
- 9 Hometown address (geographical area)
- 0 - within 100 miles from MSU
 - 1 - Michigan (other than 100 miles radius)
 - 2 - Midwest (other than Michigan)
 - 3 - South
 - 4 - East
 - 5 - West
 - 6 - Foreign
 - Y - no answer
- 10 Stated occupational aspiration (socioeconomic)
- 0 - professionals, technical, and kindred workers
 - 1 - farmers and farm managers
 - 2 - managers, officials and proprietors
 - 3 - clerical and kindred workers
 - 4 - sales workers
 - 5 - craftsmen, formen, and kindred workers
 - 6 - operatives and kindred workers

Column No.

- 7 - private household workers
- 8 - service workers, except (7) above
- 9 - farm laborers and foremen
- Y - no answer

11-12 Socioeconomic index of stated occupational aspiration

- 00 - lowest possible index
- :
- 96 - highest possible index
- YY - no answer

13-14 Blank

15 Academic program

- 0 - no preference
- 1 - College of Business and Public Service
- 2 - College of Science and Arts
- 3 - College of Education
- 4 - College of Agriculture
- 5 - College of Veterinary Medicine
- 6 - College of Communication Arts
- 7 - College of Engineering
- 8 - College of Home Economics
- Y - no answer

16 Father's occupational status (socioeconomic)

- 0 - professionals, technical, and kindred workers
- 1 - farmers and farm managers
- 2 - managers, officials and proprietors
- 3 - clerical and kindred workers
- 4 - sales workers
- 5 - craftsmen, foremen, and kindred workers
- 6 - operatives and kindred workers
- 7 - private household workers
- 8 - service workers, except (8) above
- 9 - farm laborers and foremen
- Y - no answer

17-18 Socioeconomic index of father's occupational status (socioeconomic)

- 00 - lowest possible index
- :
- 96 - highest possible index
- YY - no answer

Column No.

19-20 Perception of difficulty of Means Behavior

- 0 - zero points (low difficulty)
- :
- 31 - thirty-one points (high difficulty)
- X - negative figures

21 Father's education

- 0 - less than grade school (8 grades)
- 1 - grade school completion (8 grades)
- 2 - partial high school (9-11 grades)
- 3 - high school completion (12 grades)
- 4 - one year college
- 5 - two years college
- 6 - three years college
- 7 - college graduate
- 8 - beyond four years college (graduate work, law school, etc.)
- Y - no answer

22 Mother's occupational status (socioeconomic)

- 0 - professionals, technical and kindred workers
- 1 - farmers, and farm managers
- 2 - managers, officials, and proprietors
- 3 - clerical and kindred workers
- 4 - sales workers
- 5 - craftsmen, foremen, and kindred workers
- 6 - operatives and kindred workers
- 7 - private household workers
- 8 - service workers, except (7) above
- 9 - farm laborers and foremen
- Y - no answer

23-24 Socioeconomic index of mother's occupational status (socioeconomic)

- 00 - lowest possible index
- :
- 96 - highest possible index
- YY - no answer

Column No.

25 Mother's education

- 0 - less than grade school (8 grades)
- 1 - grade school completion (8 grades)
- 2 - partial high school (9-11 grades)
- 3 - high school completion (12 grades)
- 4 - one year college
- 5 - two years college
- 6 - three years college
- 7 - college graduate
- 8 - beyond four years college (graduate work,
law school, etc.)
- Y - no answer

26 High school class rank

- 0 - bottom 50%
- 1 - upper 5%
- 2 - upper 5-15%
- 3 - upper 16-25%
- 4 - upper 26-50%
- Y - no answer

27 High school principal (knowledgeable) prediction of success

- 0 - not recommended (will be unsuccessful)
- 1 - will have difficulty
- 2 - will be average student
- 3 - will be superior student
- Y - no answer

28-30 Michigan State University GPA at end of last term of first year

- 000 - lowest GPA
- :
- 400 - highest GPA
- YYY - no answer

31 Michigan State University GPA category at end of last term of first year

- 0 - below 1.00
- 1 - 1.01 to 1.99
- 2 - 2.00 to 2.50
- 3 - 2.51 to 2.99
- 4 - 3.00 to 3.50
- 5 - 3.51 to 4.00
- Y - no answer

Column No.

32-34 Michigan State University GPA at end of second year
(Jr. standing)

000 - lowest GPA

:

400 - highest GPA

YYY - no answer

35 Michigan State University GPA category at end of
second year (Jr. standing)

0 - below 1.00

1 - 1.01 to 1.99

2 - 2.00 to 2.50

3 - 2.51 to 2.99

4 - 3.00 to 3.50

5 - 3.51 to 4.00

Y - no answer

36-37 OAS realistic choice level total score

00 - zero points

01 - one point

:

36 - thirty-six points

YY - no answer

38-39 OAS idealistic choice level total scores

00 - zero points

01 - one point

:

36 - thirty-six points

YY - no answer

40-41 OAS level of occupational aspiration (realistic and
idealistic)

00 - zero points

01 - one point

:

72 - seventy-two points

YY - no answer

Column No.

42 Parental support (encouragement)

- 0 - high degree of support
- 1 - moderate degree of support
- 2 - no support
- Y - no answer

43 Parental expectations (not encouragement)

- 0 - high degree of expectation
- 1 - moderate degree of expectation
- 2 - no expectations
- Y - no answer

44 High school counselor support

- 0 - high degree of support
- 1 - moderate degree of support
- 2 - no support
- Y - no answer

45 High school teacher support

- 0 - high degree of support
- 1 - moderate degree of support
- 2 - no support
- Y - no answer

46 High school peer support

- 0 - high degree of support
- 1 - moderate degree of support
- 2 - no support
- Y - no answer

47 Greatest source of support

- 0 - parents
- 1 - peers
- 2 - counselor
- 3 - teacher
- Y - no answer

Column No.

48 Personal reason for going to college

- 0 - occupational
- 1 - world understanding
- 2 - scholar
- 3 - good time
- 4 - work avoidance
- 5 - other
- Y - no answer

49 Peer support (active)

- 0 - support (going to college)
- 1 - no support (going to work)
- 2 - no support (going to service)
- 3 - no support (other)
- Y - no answer

50 Perception of "college" as essential means to desired "job"

- 0 - absolutely necessary
- 1 - very important
- 2 - quite important
- 3 - of little importance
- 4 - not important at all
- Y - no answer

51 Female aspirations

- 0 - housewife (means behavior non-significant)
- 1 - career woman (means behavior significant)
- 2 - both of above
- 3 - male respondent
- Y - no answer

52 Persistence in college

- Blank - did not dropout
- 1 - number of terms before dropout
- :
- 9 - number of terms before dropout

Column No.

53-56 Significance of reference groups (or individuals) in college decision

(53) parents (54) peers (55) H.S. counselor
(56) H.S. teacher

0 - most significant
1 - quite significant
2 - little significance
3 - least significant
Y - no answer

57-59 High School GPA

000 - lowest GPA
:
400 - highest GPA
YYY - no answer

60 Dropout status (first year)

0 - did not drop out
1 - did drop out

61 Dropout status (second year)

0 - did not drop out
1 - did drop out
2 - dropped out first year and remained out
3 - dropped out first year but returned and now in school

62 Reason given for dropout

0 - did not drop out
1 - financial
2 - military service
3 - marriage
4 - transfer to another college
5 - academic suspension
6 - disciplinary suspension
7 - poor academic progress
8 - personal (and other)
9 - temporary withdrawal - has returned to MSU
Y - no answer

Column No.

63-65 College qualification test raw score

000 - lowest possible score
:
200 - highest possible score
YYY - no answer

66-67 College qualification test percentile score

00 - no score (lowest)
:
99 - ninety-nine (highest)
YY - no answer

68 College qualification test percentile categories

0 - below 20th percentile
1 - 20th to 39th percentile
2 - 40th to 59th percentile
3 - 60th to 79th percentile
4 - 80th to 89th percentile
5 - 90th to 94th percentile
6 - 95th to 99th percentile
Y - no answer

69-70 MSU reading test raw score

00 - lowest possible score
:
42 - highest possible score
YY - no answer

71-72 MSU reading test percentile score

00 - no score (lowest)
:
99 - ninety-nine (highest)
YY - no answer

73-74 MSU English placement test raw score

00 - lowest possible score
:
35 - highest possible score
YY - no answer

75-76 MSU English placement test percentile score

00 - no score (lowest)
:
99 - ninety-nine (highest)
YY - no answer

77 Sex

0 - male
1 - female

78 Combined perceived reference group support

0 - high
1 - quite high
2 - high moderate
3 - low moderate
4 - quite low
5 - low
Y - no answer

79-80 Combined facilitation index score

05 - lowest possible score (high facilitation)
:
20 - highest possible score (low facilitation)
YY - no answer

APPENDIX C

ABOUT MY COLLEGE PLANS QUESTIONNAIRE

ABOUT MY COLLEGE PLANS

1. In regard to my plans to attend college, my PARENTS
 - ☐ strongly encouraged me to go to college.
 - ☐ gave me some encouragement to go to college.
 - ☐ gave me no encouragement to go to college.
2. In regard to my plans to attend college, my PARENTS
 - ☐ definitely expected me to go to college.
 - ☐ sort of expected me to go to college.
 - ☐ did not expect me to go to college.
3. In regard to my plans to attend college, my COUNSELOR (if any) thought that I should
 - ☐ definitely go to college.
 - ☐ go to college if I could possibly make it.
 - ☐ not go to college.
4. In regard to my plans to attend college, the TEACHER(S) whose opinion(s) I respect the most thought I should
 - ☐ definitely go to college.
 - ☐ go to college if I could possibly make it.
 - ☐ not go to college.
5. The GROUP of kids I knew the best in high school thought that kids like themselves should
 - ☐ definitely go to college.
 - ☐ go to college if they could possibly make it.
 - ☐ go to work (or get married).
6. The greatest encouragement to attend college actually came from
 - ☐ my parents.
 - ☐ my group of best friends.
 - ☐ my high school counselor (if any)
 - ☐ my high school teachers.

7. In my own thinking, the thing that helped me most in making my decision to go to college was a
- ☐ desire to get a good job later in life.
 - ☐ desire to learn more about the world in which I live.
 - ☐ desire to be a scholar.
 - ☐ desire to have a good time.
 - ☐ feeling that it would be better than going to work.
 - ☐ other (specify)_____.
8. My BEST FRIENDS, generally, are
- ☐ going to college.
 - ☐ going to work.
 - ☐ joining a branch of the military service.
 - ☐ other (specify)_____.
9. To obtain the kind of job I wish to have in later life, a college education is
- ☐ absolutely necessary.
 - ☐ very important.
 - ☐ quite important.
 - ☐ of little importance.
 - ☐ not important at all.
10. (For girls only) My long-range plan is
- ☐ to become a full-time wife and homemaker.
 - ☐ to be a career woman.
 - ☐ both of the above.
11. Please rank the following in the order of their importance to you in INFLUENCING YOUR DECISION to attend college. (1--most important, 4--least important, etc.) Be sure to rank each one.
- ☐ your parents.
 - ☐ your group of best friends.
 - ☐ your high school counselor (if any).
 - ☐ your high school teachers.

APPENDIX D

CORRELATION MATRIX OF ATTITUDE, FACILITATION AND BEHAVIOR VARIABLES

CORRELATION MATRIX OF ATTITUDE, FACILITATION, AND BEHAVIOR VARIABLES

	(1) OAS	(2) SES	(3) GPAh	(4) RGS	(a) PR	(b) CR	(c) TR	(d) PeR	(5) MA	(6) PNC	(7) GPAC
Occupational aspiration (1)	---	.085	.119	.230	.179	.153	.140	.143	.261	.265	.161
S-E status (2)		---	-.103	.227	.223	.089	.079	.172	.069	.035	.062
Past performance (3)			---	.237	.080	.334	.222	.058	.338	.103	.575
Perceived reference group support (4)				---	.640	.723	.687	.636	.332	.162	.323
Parents (a)					---	.252	.207	.128	.256	.107	.169
Counselor (b)						---	.596	.228	.295	.096	.272
Teacher (c)							---	.244	.251	.002	.231
Peer (d)								---	.112	.145	.212
Mental ability (5)									---	.082	.542
Perception of necessity of college (6)										---	.006
College performance (7)											---

(1) Attitude variable; (2) to (6) facilitation variables; (a) to (d) subtypes of (4); (7) behavior variable.

Correlation coefficients of .088 or above are statistically significant at the .05 level of probability for a two-tailed test of significance. All correlations are positive unless indicated.

APPENDIX E

GENERAL FACILITATION INDEX

The general facilitation index was developed from the five selected facilitation variables used in this research. Those variables with a high number of alternative scale positions were reduced to the scale of the variable with the lowest number of alternative positions (4); which was the perception of necessity of college variable. Medians and sub-medians were used to establish the categories for the broad scale variables. Thus the following additive scoring system was established:

Perception of Necessity of College

0 - High	1
1 - Med High	2
2 - Med Low	3
3 - Low	4

Perceived Reference Group Support

0 - High	1
1 - Med High	2
2 - Med Low	3
3-5 - Low	4

Socioeconomic Status

71-96 - High	1
52-70 - Med High	2
32-51 - Med Low	3
0-31 - Low	4

Mental Ability

149-200 - High	1
131-149 - Med High	2
112-130 - Med Low	3
0-111 - Low	4

Past Performance

331-400 - High	1
281-330 - Med High	2
240-280 - Med Low	3
0-239 - Low	4

The general facilitation index thus has theoretical limits of 5 and 20; 5 is highest degree of facilitation and 20 is lowest degree of facilitation. Those cases in the sample not having responses to each of the five selected facilitation variables were excluded from the general facilitation index. This made up a "no answer" category of 71 on this general scale.

On the basis of the above, the general facilitation index distribution is as follows:

5 -	13
6 -	20
7 -	29
8 -	46
9 -	61
10 -	70
11 -	55
12 -	61
13 -	50
14 -	44
15 -	23
16 -	29
17 -	11
18 -	2
19 -	0
20 -	0

This distribution constitutes the index used when computing correlation coefficients with other variables. It is divided into the following categories when controlling for the degree of general facilitation.

5- 9 - High	169
10-12 - Med	186
13-20 - Low	159

APPENDIX F

GENERAL PERCEIVED REFERENCE GROUP SUPPORT INDEX

The general perceived reference group support index was developed from the 4 separate perceived reference group support items in the About My College Plans questionnaire; that is, the perceived support of parents, teachers, peers, and counselor.

The following simple additive scoring system was used:

High = 0

Med = 1

Low = 2

These scores were added for each of the four items to establish a general scale with theoretical limits from 0 to 8; 0 being the highest degree of support and 8 being the lowest degree of support.

Empirically, the following distribution resulted:

0 -	227
1 -	168
2 -	84
3 -	48
4 -	25
5 -	7
6 -	0
7 -	0
8 -	0

which was used as follows when controlling for degree of perceived reference group support:

0 =	High
1,2 =	Med
3-5 =	Low

and as follows when used in construction of the general facilitation index (see Appendix E):

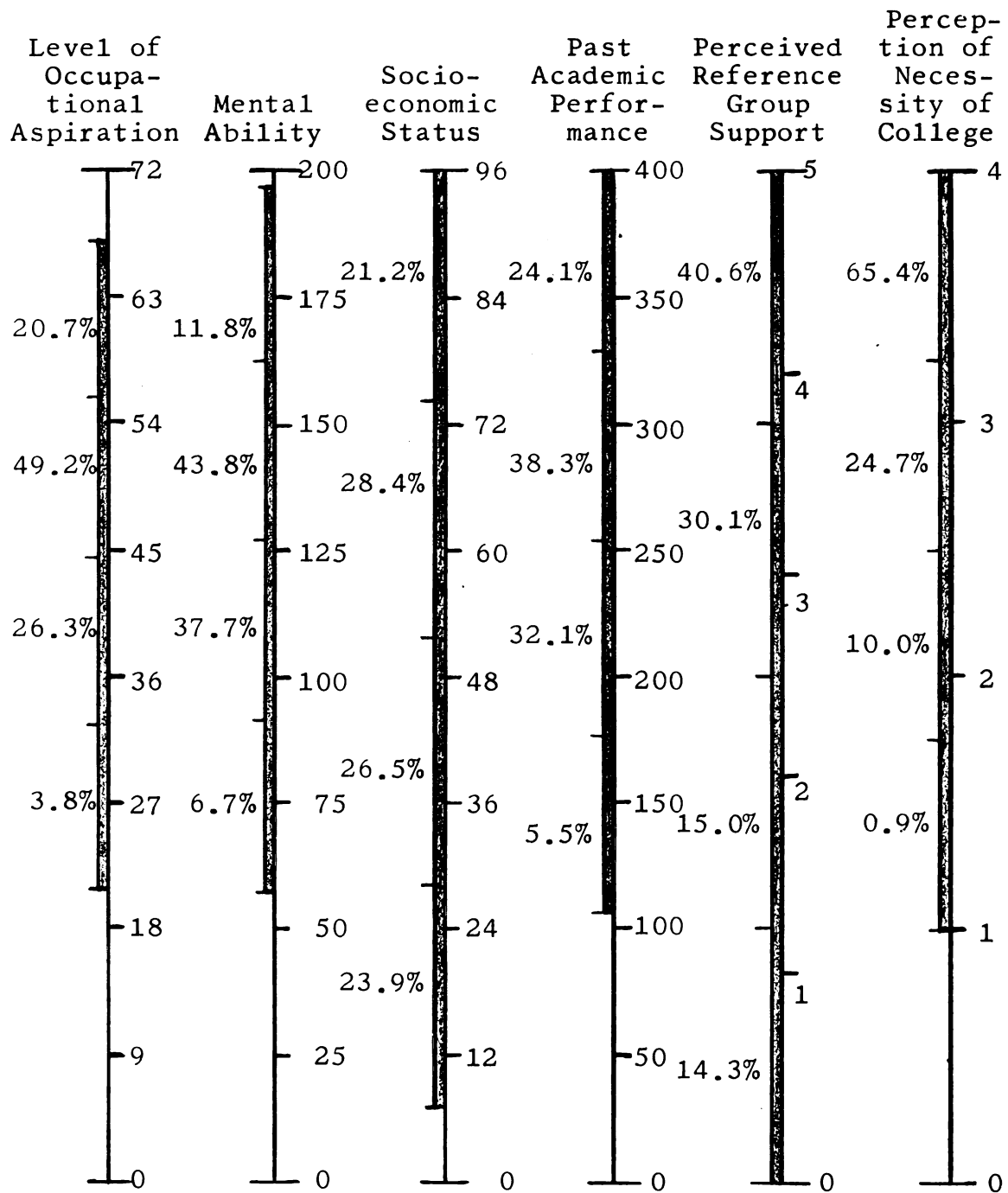
0 = High
1 = Med High
2 = Med Low
3-5 = Low

Those cases in the sample not having responses to each of the four separate items making up the general scale were excluded from the general perceived reference group support index.

APPENDIX G

DISTRIBUTION OF SAMPLE ON ATTITUDE AND FACILITATION VARIABLES

Appendix G is a graphic presentation of the nature of the sample in regard to the attitude and facilitation variables utilized. The scale points for each variable are indicated to the right of the scale line. Both the high and low theoretical limits of each scale utilized are indicated. The red line designates the observed distribution limits of the sample on each of the scales. To the left of the scale line for each variable is indicated the observed percentage of the sample in each quarter of the observed distribution limits. The graph thus provides a composite picture of the theoretical limits of each variable, the observed distribution of the sample with respect to the theoretical limits, and the percentage of the sample falling in each quarter of the observed distribution limits.



KEY:  observed distribution limits

Figures to left of scale line = percentage of sample in each quarter of the observed distribution.

Figures to right of scale line = scale points.

Observed distributions on the variables divided into
quarter categories:

Level of Occupational
Aspiration

56-67	121	(20.7%)
44-55	288	(49.2%)
32-43	154	(26.3%)
20-31	22	(3.8%)

Mental Ability (CQT)

162-197	69	(11.8%)
127-161	256	(43.8%)
92-126	220	(37.7%)
56- 91	39	(6.7%)

Socioeconomic Status

75-96	117	(21.2%)
53-74	157	(28.4%)
30-52	146	(26.5%)
7-29	132	(23.9%)

Past Academic Performance

334-400	140	(24.1%)
257-333	223	(38.3%)
180-256	187	(32.1%)
103-179	32	(5.5%)

Perceived Reference Group
Support

5	227	(40.6%)
4	168	(30.1%)
3	84	(15.0%)
0-2	80	(14.3%)

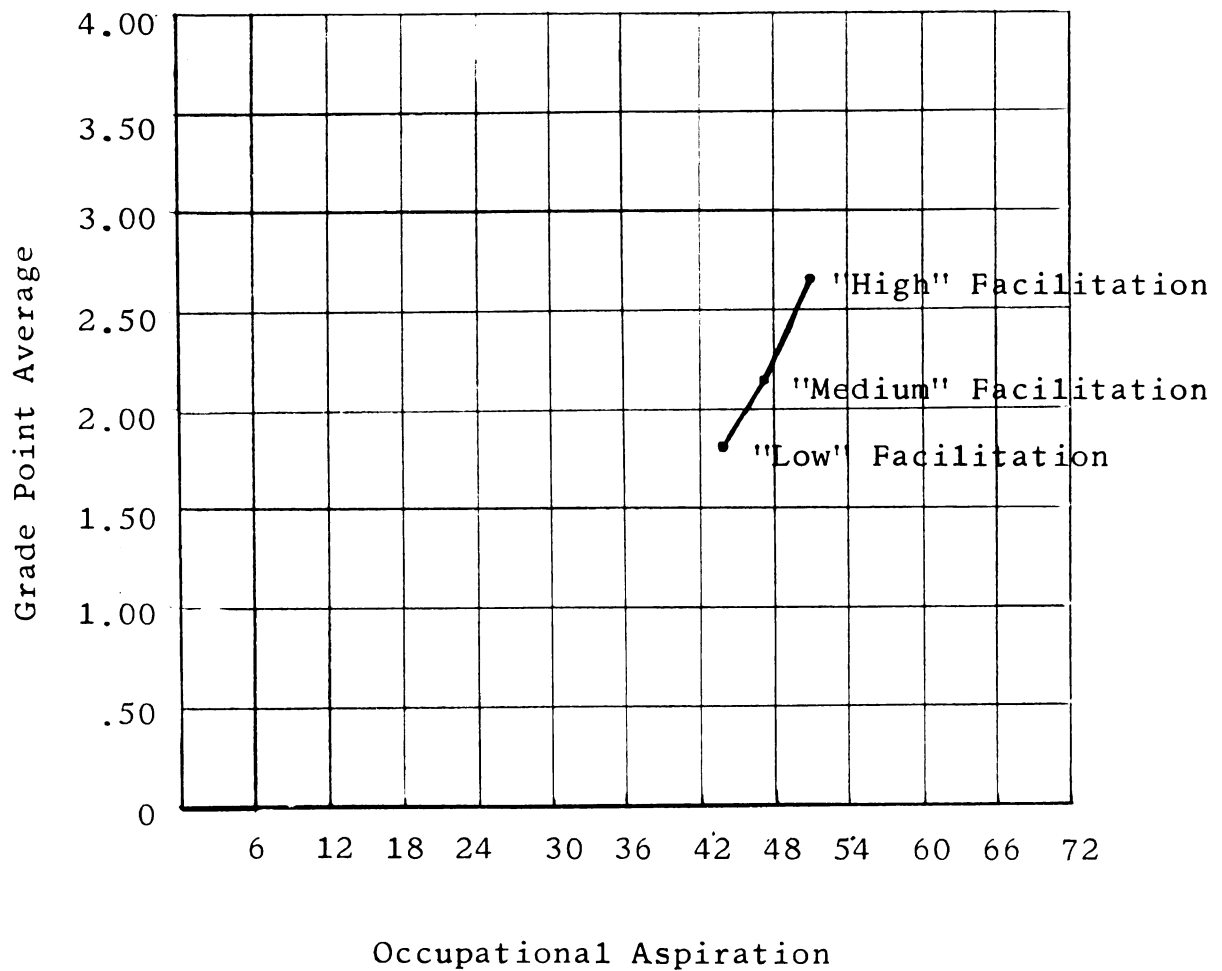
Perception of Necessity
of College

4	357	(65.4%)
3	135	(24.7%)
2	49	(10.0%)
1	5	(0.9%)

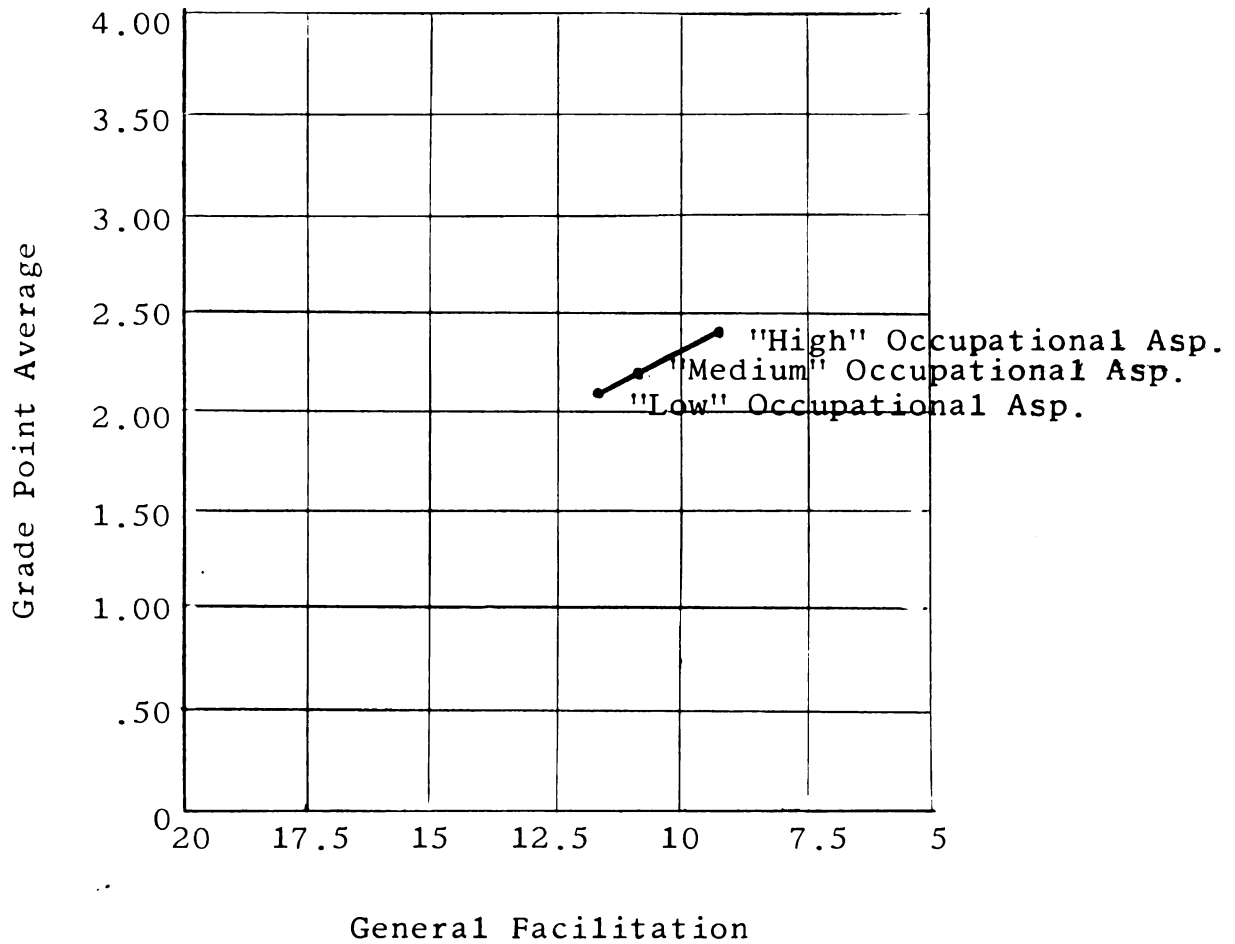
APPENDIX H

MEAN RELATIONSHIPS OF ATTITUDE, FACILITATION AND BEHAVIOR VARIABLES

MEAN RELATIONSHIP OF GRADE POINT AVERAGE AND OCCUPATIONAL
ASPIRATION BY LEVEL OF GENERAL FACILITATION



MEAN RELATIONSHIP OF GRADE POINT AVERAGE AND GENERAL
FACILITATION BY LEVELS OF OCCUPATIONAL ASPIRATION



Note: The general facilitation index is so constructed that the high numerical scores designate low facilitation and the low numerical scores designate high facilitation.

APPENDIX I

BEHAVIORAL CONSEQUENCES OF COMBINATIONS OF
DEGREES OF OCCUPATIONAL ASPIRATION
AND GENERAL FACILITATION

MEAN GRADE POINT AVERAGES FOR COMBINATIONS OF DEGREES OF
OCCUPATIONAL ASPIRATION AND GENERAL FACILITATION

Facilitation	Occupational Aspiration		
	Low	Medium	High
High	2.563 (33)	2.634 (56)	2.789 (80)
Medium	2.151 (65)	2.285 (81)	2.187 (40)
Low	1.899 (77)	1.844 (51)	1.685 (31)

() = number of cases.

PERSISTENCE IN COLLEGE RATES FOR COMBINATIONS OF DEGREES OF
OCCUPATIONAL ASPIRATION AND GENERAL FACILITATION

Facilitation	Occupational Aspiration		
	Low	Medium	High
High	78.8% (26)	80.4% (45)	81.2% (65)
Medium	50.8% (33)	67.9% (55)	65.0% (26)
Low	42.9% (33)	52.9% (27)	38.7% (12)

() = number of non-dropouts.

Appendix I--continued

	Mean GPA	Standard Deviation	Dropouts		Non-Dropouts		Number of Cases
			No.	%	No.	%	
Hi OA, Hi GF	2.789	.641	15	18.8	65	81.2	80
Med OA, Med GF	2.285	.625	26	32.1	55	67.9	81
Low OA, Low GF	1.899	.691	44	57.1	33	42.9	77
Hi OA, Med GF	2.187	.531	14	35.0	26	65.0	40
Hi OA, Low GF	1.685	.812	19	61.3	12	38.7	31
Med OA, Hi GF	2.634	.595	11	19.6	45	80.4	56
Med OA, Low GF	1.844	.597	24	47.1	27	52.9	51
Low OA, Hi GF	2.563	.676	7	21.2	26	78.8	33
Low OA, Med GF	2.151	.694	32	49.2	33	50.8	65

APPENDIX J

SELECTED CHI-SQUARE TESTS

PARENTAL EXPECTATION BY SOCIOECONOMIC STATUS

Parental Expectation	Socioeconomic Status			No. of Cases
	High	Medium	Low	
High	78.4%	63.8%	56.7%	364
Low	19.3%	30.1%	38.4%	163
No answer	2.3%	6.1%	4.9%	25
No. of cases	171	196	185	552

$$\chi^2 = 17.94 \quad P < .001$$

The "No answer" category was excluded from the chi-square computation leaving 2 degrees of freedom.

PARENTAL ENCOURAGEMENT BY SOCIOECONOMIC STATUS

Parental Encouragement	Socioeconomic Status			No. of Cases
	High	Medium	Low	
High	86.5%	65.3%	75.1%	415
Low	11.1%	28.6%	20.0%	112
No answer	2.4%	6.1%	4.9%	25
No. of cases	171	196	185	552

$$\chi^2 = 19.11 \quad P < .001$$

The "No answer" category was excluded from the chi-square computation leaving 2 degrees of freedom.

The tables show that although a considerably higher percentage of high socioeconomic status students have high rather than low parental expectation and encouragement, this pattern of difference is not true for low socioeconomic status students. In the case of the latter, only a slightly higher percentage have high rather than low parental expectation but a considerable difference is observed with regard to parental encouragement. This suggests that parents of low socioeconomic status students often manifestly or verbally encourage their children to attend college but do not as often actually expect them to do so.

APPENDIX K

CUTTING POINTS FOR ATTITUDE AND FACILITATION VARIABLES

CUTTING POINTS FOR ATTITUDE AND FACILITATION VARIABLES

	Occupational Aspiration	General Facilita- tion	Mental Ability	Socio- economic Status	Past Perfor- mance	Reference Group Support	Perception of Necessity of College
High	54-72 (171)	5-9 (169)	142-200 (195)	67-96 (171)	311-400 (206)	0 (227)	0 (357)
Medium	45-53 (217)	10-12 (186)	118-141 (195)	41-66 (196)	250-310 (192)	1-2 (252)	1 (135)
Low	0-44 (197)	13-20 (159)	0-117 (194)	1-40 (185)	0-249 (184)	3-5 (80)	2-3 (54)

No Answer or Rejected Cases	(0)	(71)	(1)	(33)	(3)	(26)	(39)