Current and Future Characterizations of Self; A Theoretical Model for Analyzing the Sources and Functions of Self-Conceptions

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CURRENT AND FUTURE CHARACTERIZATIONS OF SELF:
A THEORETICAL MODEL FOR ANALYZING
THE SOURCES AND FUNCTIONS OF SELF-CONCEPTIONS

by

Robert Bilby

A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment
of the
Degree of Doctor of Philosophy

Western Michigan University
August 1972

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CHAPTER I

PROBLEM STATEMENT AND THEORETICAL DEVELOPMENT

Introduction

The focus of this study is on the development and testing of a theoretical model of the sources and functions of students' conceptions of 1) their academic competency, 2) the instrumental costs and rewards they view as accruing to themselves given certain academic attainments, and 3) the intrinsic worth they attach to themselves as students. These student self-conceptions are viewed as antecedent to plans which students make about their future educational attainments. In addition, parental variables are assessed as conditions which are antecedent to student self-conceptions.

Overview of the Problem and Objectives

The choice of the school as an arena in which to conduct research concerned with the functions of self-conceptions, is usually justified by pragmatic considerations concerning the relative ease of carrying out research in schools and for purposes of aiding youth in their life in school. Yet, beyond this justification, lies a consideration of considerable importance for expanding knowledge of human conduct. The literature in the sociology of education recognizes at least two major functions fulfilled by the educational institution in modern industrial society (Parsons, 1959).
One major function is the process whereby schools aid in the "assigning" of individuals to positions in society and is referred to as the allocation function. Stated briefly, schools discover aptitudes, pique interests, and develop skills in the young which lead to their eventual occupational, economic and social positions in the larger society.

Analytically distinct from this allocation function is the socialization function of the school. There is an historical trend in which the socialization function of the educational system is taking on an increasing responsibility for ingraining normative belief systems and value patterns in the youth of industrial societies (Parsons, 1959). More and more the aims of schools include the helping of the young to attain the means for "getting along" in the society morally as well as instrumentally.

In light of this trend, it is not surprising that there are similarities between a person's life in school and in the other institutions of the society. Indeed, it seems reasonable that the greater the similarity in aims between school and the wider society, the greater the effectiveness of the educational system in preparing youth for later life. A number of educators and social analysts have, in fact, pointed with alarm to the manner in which the educational institution is becoming the epitome of life in contemporary society. Others disagree. One's point of view in this matter may depend on his perspective concerning the relationship between society and its educational institution and upon the kind of society valued.
Sociologists have also been concerned with the reciprocal relationship between schools and society. Taking varying positions, some sociologists have viewed the school as an instrument of the larger social system which essentially reflects the values of that system. For example, well known critics of education such as Goodman (1956; 1962), Friedenberg (1967), and Farber (1969) have paid particular attention to the manner in which schools not only reflect certain patterns of power relations the belief systems, but also reinforce and strengthen these patterns. From another perspective there are sociologists who view education as playing a major role in social change. However, regardless of the position, sociologists who are concerned with the educational system tend to be ultimately concerned with the individuals toward whom this system directs its energies; the students. At an even more basic level, there is often an implied or explicit concern among sociologists of education with those conditions influencing the way people conceive of themselves. Implicit in such concern is the assumption that there is a relationship between the ways individuals characterize themselves and their attitudes and behaviors. Perhaps this is why the self-conceptions of students have been studied so much.

Indeed, a vast literature exists much of which is concerned with precisely the development and function of students' self-conceptions. Yet, concerning this self-concept literature, Diggory (1966: 62) writes:

In 1961 Ruth Wylie published a critical review of the research literature on the "self-concept" . . . The
review included over four hundred titles and Wylie's critical acumen has performed a momentous service in revealing the utter bankruptcy of it all.

While some may contend that Diggory overstates his case, the methodological and theoretical problems exhibited in the literature are undeniable. These problems have occasioned many scholars to be confused about the theoretical efficacy of self-concept as a construct. Much of this confusion may be traced to the many differing theoretical traditions from which research concerned with self is derived. These many traditions have produced many definitions of self (Brookover, 1970). For example, Hamachek (1971: 8) points out that self as a theoretical notion has come to carry at least two very general meanings: self-as-object and self-as-process. Similar to this lack of conceptual consensus is the theoretical disparity between such notions as "unitary self" (Mead, 1934; Goffman, 1959; and others) and "multiple self" (James, 1892; Brookover, et. al., 1962). In addition, many different types of research methods have been utilized in studying the self (Brookover, 1970). Virtually, all of the social science research methodologies have been brought to bear on the problem, including experimental designs (Diggory, 1960; Brookover, et. al., 1965), in-depth case studies (Maslow, 1954), clinical research and information gained from counseling (Rogers, 1961), participant-observation (Becker, 1961), and longitudinal survey techniques (Brookover, et. al., 1967).

Concomitant with this lack of agreement as to how to theoretically conceptualize self, there are competing theoretical positions.
concerning the development of self in the human being. Schools of thought range from an emphasis upon the unfolding of a basic constitutional make up (Maslow, 1954) to various notions of a learned, experientially developed self (Rogers, 1959; Cooley, 1902; and others). Some theorists with a behavioristic orientation place great emphasis upon the instrumental rewards and costs associated with certain acts as being highly influential in the development of a person's characterizations or definitions of self (Skinner, 1953; Homans, 1961). Others, often grouped in a "humanistic" tradition, see self as a result of a dynamic interplay of both external and internal forces in the human and social conditions of man's existence which are often known only intuitively (Combs and Snygg, 1959).

It is apparent that there is a considerable lack of consensus among scholars about the efficacy and definition of self and self-concept as fruitful theoretical constructs. The aim of this study is to present and test a theoretical model of the sources and functions of self-conceptions. In this endeavor, the author has been greatly influenced by the previous work of Kinch (1963), Brookover (1967), and Erickson. Erickson and Brookover (1969) enumerated in general terms the major components of the model of self-conceptualization utilized here. In developing the present study, the author has also worked in close collaboration with Erickson and Brookover. The result has been the elaboration of a theoretical model for explaining the development and functions of self-characterizations, for which hypotheses have been formulated and are tested in this
investigation. This model is structured with regard to: 1) sources of self-characterization; 2) three analytic categories of self-characterizations; and 3) the empirical functions of these analytic categories of self-conceptions in relation to the plans of students. In addition, analytic constructs aimed at describing the processual aspects of human self-conceptions are employed.

Before providing the details of the theoretical notions and structure of the model used in this study, a discussion is presented dealing with the major theoretical tradition within which the model is embedded. That tradition is "symbolic interactionism."

Toward a Theoretical Model of Self-Conceptions: Theoretical Background and Related Literature

One reason for beginning with a discussion of the theoretical tradition is that the meaning of a construct is often dependent upon the theoretical system within which it is embedded. Becker (1970) has provided a particularly germane discussion of the way notions of self are bound up in larger theoretical frameworks.

Everyone knows what the self is. . . . When a social scientist speaks of the self we feel, with some relief, that for a change we know what he is talking about.

He is talking, of course, about the essential core of the individual, the part that calls itself "I", the part that feels, thinks and originates action. Or is he? For despite the seeming clarity of the concept, people do not seem to agree on what they mean by it. This should not be surprising because, in fact, no concept can be defined in isolation. Any concept is, explicitly or implicitly, part of a theoretical system and derives its true meaning from its place in that system, from its relation to the other concepts of which the system is constructed. So the self means one thing
in a sociologist's theory and another in a psychologist's, one thing (even among sociological theories) in a structural-functional theory and another in a theory based on symbolic interactionism. When we accept the term intuitively, we gloss over the differences it hides, differences due to the differing theoretical systems in which it has been embedded (Becker, 1970: 289-290).

Symbolic interactionism, self, and planning

"Symbolic interactionism", a term used to refer to the major tradition upon which this study is based, is an outgrowth of the scholarship of John Dewey, Charles Horton Cooley, and particularly George Herbert Mead. Mead (1934) applied to the study of human behavior the evolutionary principles of "behavior as an adaptation to environment and, in part, the correlative idea that organism and environment are mutually determinative" (Meltzer, 1964: 8). Mead coupled these ideas from evolutionary thought with a recognition of what he viewed to be a qualitatively different form of cooperation found among humans but not found among lower animals. In the absence of successful biological explanations of many instances of human cooperation, Mead developed a line of reasoning attempting to answer questions like: "How is it possible for collective human action to occur? How many people come together in lines of action that mesh with one another in something we can call a collective act?" (Becker, 1970: 290-291).

Central to Mead's answer to these questions is the concept of "the symbolic completion of the act." Individuals imaginatively forecast their existence; they constantly are planning on the
occurrence of a state of existence for themselves. One primary concern of this study is to explain and predict the occurrence of students' educational plans for self.

Some of the other constructs which Mead used to describe how people adapt their behavior to others are: "Intentions", "significant symbol", "meaning", and "self". Before briefly reviewing these constructs, it should be noted that Mead saw many parallels between man's evolutionary development as a species and the individual organism's development as a human being. The following discussion will shift between these two levels of analysis, as Mead saw similarities between the two.

According to Mead, human cooperation, as exhibited in collective behavior, can only be possible when individuals ascertain the intentions of others. In order for one individual to become aware of the intentions of others within the context of collective action, communication must occur. Communication in humans involves more than just the genetically determined use of signs.\(^1\) Humans utilize significant symbols (language systems providing primary examples) to characterize or assign meaning to themselves and their world. These meanings indicate what objects of attention have done, are doing, and will do. In other words, the imaginative or cognitive completion of the act is also what Mead calls assigning meaning. The meaning of an object or event is a definition for comprehending

\(^1\)For a discussion of human and non-human communication and the use of signs and symbols, see White (1949: Chapter II).
its function in relationship to other phenomena. To assign meaning to self, is to characterize self (past, present, or future) in relation to a recognized environment. In this study, the concern is with students' characterizations of self in terms of academic competencies and values accruing to self in relation to their educational plans.

Mead suggests that in regard to human communication, there must be some minimal similarity between the meaning assigned to a gesture or symbol by the individual making the gesture and the individual toward whom the gesture is directed. When an individual is capable of responding to his own behavior in this fashion, he possesses a self. A basic property of self is consciousness; individuals can see themselves as objects in the environment. An actor can characterize his own behavior just as he can characterize the other's characterizations of the actor. Thus, according to Mead, there evolved in _homo sapiens_ interacting one with another the ability to call out in covert awareness the response that one's behavior indicates to others.

Concomitant with the emergence of self arose the ability to control one's own responses in terms of the expressed intentions of others. Language, as an advanced form of communication present in man, is the condition which enables man to gain this awareness; according to Mead, self evolutionarily emerged simultaneously with language.

For purposes of this study, there need be no assumption that
language accounts for total awareness, only that language and other shared symbol systems among socialized persons are the primary vehicles for the expression of awareness. This study is interested in organizing and explaining expressions of consciousness. Restated, this study does not take the position that man's awareness or consciousness can in every circumstance be described or communicated by using a socially shared symbol system. For example, language may not be adequate for the expression of one's awareness of love for another; but to the extent that one has learned one or more systems of symbols (e.g., languages in addition to the native tongue, artistic techniques exemplified by poetry, painting, or sculpture, etc.), the capability of expressing various sorts of awareness is increased.¹

In the theoretical model developed by Erickson and Brookover (1969) and elaborated and tested in this study, the concern is with accounting for volitional behavior.²

¹Obviously, the relations between conditions in the history of human social existence and the development of specific systems of symbols (especially languages) are complex. These issues are beyond the scope and intent of the present work.

²Lindesmith and Strauss (1968) provide a discussion of how volitional behavior has historically been dealt with as involving "will power" or "free will". Based on considerable experimental research, they conclude that will power need not be conceived as a psychic and independent force, but rather as a:

complexly interrelated central process deriving from . . . language and speech . . . . Self-control and voluntary behavior are thus conceived as products of external influences emanating from the cultural environment, rather than as the unfolding of vague, disembodied innate propensities of the organism (Lindesmith and Strauss, 1968: 205-208).
Volitional behavior, from the perspective of symbolic interactionism, is typified by the actor's constant characterization and re-characterization of his environment, his self, and the relationship between environment and self (cf. Blumer, 1969: 1-21). In other words, there is a constant assignment of meaning to the world (including self in that world) in which the individual carries out his existence. The individual generally organizes his action by using learned symbol systems to designate or interpret (assign meaning to) those events and occurrences in the environment to which he is attending. Consistent with this emphasis upon expressed future programs of action for self, the empirical tests of the model reported in the following chapters deal with the plans of students in reference to future educational attainments as a type of volitional behavior.\(^1\)

To a symbolic interactionist, planning, which is defined as a part of volitional behavior, involves a process wherein the self and other objects and events in the social world are designated as having certain properties or function in a future circumstance. It is theoretically assumed that plans for self are designations of

\(^1\)There seems to be no overriding definitional (denotative) differences between voluntary or volitional behavior as that term is employed here and the Skinnerian notion of operant behavior. That is, while the explanatory concepts utilized in this study in accounting for non-reflexive behavior might be different from the explanatory notions of behavioral psychology, the definitions of non-reflexive behavior are basically similar. However, there may be some adjunct or connotative differences that have developed within the social scientific controversies which surround Skinnerian psychology. Therefore, the term volitional behavior is employed in this study.
conditions of self in future situations of existence. This theoretical definition assumes that plans generally take the form of linguistic expressions utilizing the standard language system.

Another assumption commonly made is that external expressions reflect an internal state of affairs. Internal self-conceptions (i.e., characterizations of self which are not made public) are viewed as hypothetical constructs, whereas expressed self-defining linguistic outputs are viewed as capable of public assessment. When taking into account the linguistic act of any person in any setting, some degree of correspondence is usually assumed between these acts and private intentions. It would seem that the idea of truth-telling and lying are contingent upon such constructs as external and internal linguistic behaviors.1

This study, however, does not attempt to measure or assess these

1Of course, concern for overt behavior is not unique to this study. Teachers pass or fail students on the basis of students' over linguistic communications. Punishment or reinforcement is meted out within the family, the school, and many occupational settings on the assumption that the linguistic outputs of role occupants reflect what it is they "know". Indeed, knowledge itself, the goal of all science and the basis of human adaptation to various environs, is first and foremost a hypothetical construct. Even an oral defense of research is seemingly based on the notion that the researcher's verbal communications in writing and speech reflect some degree of internally held familiarity with a body of literature, with certain concepts and theories, in short, some sort of professional competence. And based on these expressions, decisions are often made as to the worth of the research and the advisability of approving it as being of professional quality. In other words, the assumption of a correspondence between private and public expressions of consciousness pervades human affairs to the extent that the burden of proof lies upon those suggesting that there might be a widespread lack of such correspondence between public and private meanings.
internal or private hypothetical constructs. Rather, the concern is with explicating the associations between public characterizations of self and expressed plans for future action. This research is no more concerned with the direct measurement of hypothetical constructs than are physicists interested in directly measuring the force of gravity or the weighing of sub-atomic particles. Publicly expressed self-conceptions are overt actions of people and as such, are subject to empirical study. One task of this investigation is to provide a test of a strategy attempting to increase the empirical validity of constructs purporting to predict the occurrences of various publicly made plans.

Another assumption relevant to this study is that the measurement of expressions of the way people characterize themselves is not of necessity any more invalid or unreliable than the measurement of other beliefs which individuals express. It is noted, however, that important questions about the validity of measurements of expressed self-conceptions are not ignored in this research. In this study the predictive validity and theoretical utility of overt expressions in accounting for plans are of prime concern, rather than the issue of a correspondence between internal and external states. Before discussing the details of the theory and methods employed in this study, a number of other issues and assumptions concerning self-conceptions require elaboration.

In the assumptions sketched above, self-concept is viewed as a theoretical category for grouping certain linguistic acts of indi-
viduals which occur in various situations and over time, rather than as a static property of the organism, such as a trait like height or hair color. Like one's conceptions of his environment in various settings, one's conceptions of self vary. Self-conceptions are linguistic behaviors; they are self-defining acts of individuals.

This way of viewing self-concept is found implicitly in the writings of David Hume (1739), and explicitly in the work of William James (1892). James' famous dictum that "a man has as many social selves as there are individuals who recognize him" (James, 1892: 294) is another way of describing what is called in this study role-specific or task-specific self-conceptions. The majority of past studies refer to self-concept as if it were unitary and trait-like events which had an existence apart from behavior. Brookover and his associates state that self-conception can be profitably viewed as those characterizations about one's self which a person makes as he carries out various social roles or tasks (Brookover, et. al., 1967; Brookover and Erickson, 1969). For example, an individual may conceive of himself as performing poorly in his occupational role, but rather well in his role as lover to his wife. Implied is that for any given general role, various sub-roles may also carry with them differing conceptions of self for an individual; e.g., a student may characterize himself as an outstanding student of the sciences but as being inept at interpreting poetry or presenting a formal speech.

Some authors have contended that certain combinations of self-defining linguistic outputs which an individual makes in actual or
anticipated role performance constitute a "self-concept structure" (Brookover and Erickson, 1969: 101). One purpose of this study is to elaborate one theoretical model of the self-concept structure.¹

The model advanced in this study is consistent with assumptions that self-conceptions are variable characteristics of the human individual rather than constant traits like height or eye color. While this view pictures self-conceptions as variable rather than primarily constant phenomena, no contention is made that all self-conceptions fluctuate like mercury in a thermometer. Self-conceptions are probably as variable and as stable as other types of behaviors. For example, certain self-conceptions are likely to be repeated given common stimuli. It may also be noted that some self-conceptions of individuals, as linguistic behaviors, are difficult to change or modify while others appear to drop rather easily from one's behavioral repertoire.

Before the formal model guiding this study is presented, it should be noted that there have been very few explicit attempts to construct a formal model for viewing self-conceptualization, in spite of the large amount of theoretical concern and empirical study that has been directed to this topic. One of the few and certainly the best known formal model was recently offered by Kinch (1963), who utilized self as a variable intervening between the perceived

¹The reader may note that the construct of self-concept as used by Brookover and his associates is similar to what Combs refers to as "self-report". However, Combs does not view self-report as a real self-concept. See Snygg and Combs (1959: pp. 16-37).
behavior of others and the behavior of the individual.

Since the model from which hypotheses are drawn and tested in this study is also concerned with the sources and functions of self-conceptions, Kinch's model is presented as a point of departure. Kinch states: "The individual's conception of himself emerges from social interaction and, in turn, guides or influences the behavior of that individual" (Kinch, 1963: 481). More formally, Kinch's model is as follows:

The actual responses of others to the individual will be important in determining how the individual will perceive himself; this perception will influence his self-conception which, in turn, will guide his behavior (Kinch, 1963: 482).

Kinch's model appears schematically as:

\[ A \rightarrow P \rightarrow S \rightarrow B \]

where:
- \( A \) = actual expectations (i.e., behavior of others)
- \( P \) = perceived expectation
- \( S \) = self-conception
- \( B \) = behavior

\( \rightarrow \) = "leads to" (Kinch, 1963: 482)

Several contrasts and comparisons can be drawn between Kinch's model and the following model upon which this study is based. By discussing these differences and similarities, the model presented in Figure 1.1 (page 17) which guides the present research, can be introduced to the reader.

Kinch's model, as does the model employed in this study, assumes a necessary distinction between the actual behavior of others and the way people process the information they gain about the actual behaviors of others. Assumptions cannot be made to the effect that
FIGURE 1.1

SCHEMATIC REPRESENTATION OF THE MODEL
OF SOURCES AND FUNCTIONS OF SELF-CONCEPTIONS

<table>
<thead>
<tr>
<th>Behavior of Significant Others</th>
<th>Monitoring</th>
<th>Self-Concept Structure</th>
<th>Plans</th>
<th>Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual Evaluations of Ability in Role</td>
<td>Monitored Evaluations</td>
<td>Self-Concept of Ability in Role</td>
<td>Specific Plan About Self in Future</td>
<td>Volitional Action</td>
</tr>
<tr>
<td>Actual Normative Expectations: Dispensation of Rewards and Punishments</td>
<td>Monitored Normative Demands; Monitored Reinforcement Schedule</td>
<td>Self-Concept of Instrumental Value of Role</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actual Communicated Values; Dispensation of Rewards and Punishments</td>
<td>Monitored Values; Monitored Reinforcement Schedule</td>
<td>Self-Concept of Intrinsic Value of Role</td>
<td>Other Plans About Self in Related Role</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitored Prior Self-Concept Structure</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

(where X represents other sets of unspecified variables which contribute to human action, e.g., heredity factors, nutritional variables, environmental conditions, etc.)
the behavior of others directly influences an individual's behavior of observation, i.e., part of self-conceptualizing. Monitoring of self in the past is viewed as distinct from current self-conceptualizing acts (or, rather, as one possible part of a current self-conceptualizing act). The analytical distinction is made even though when an individual is monitoring past states of self, he may be simultaneously making assessments of his current condition. The distinction is valuable in that it theoretically allows for taking into account the reciprocal effects of remembered conditions of self, regardless of accuracy, and current conceptions of self.

Another point of contrast between Kinch's model and the model used here is that Kinch views self-conception as a global or unitary construct. As noted earlier, this study adopts a multiple self orientation and hypothesizes that a greater efficiency in predicting behavior will be achieved by using three selected types or categories of conceptions of self, rather than using only one global characterization of self. The model employed here utilizes three categories of role-specific characterizations of self.

Another difference between the two models is that Kinch's model omits any specific reference to the shaping of people's plans which this study is attempting to explain. Kinch's model could be said to allow for decision making, i.e., specific interpretations with implications for the future of the individual, only to the extent that such decision making is viewed as implicitly included in self-conceptions -- and this implication is not obvious. In other words,
the link between self-concept and behavior is not made explicit by Kinch. The model utilized here asserts that certain behavior — "volitional behavior" — is partially the consequence of the plans of people which in turn are the consequences of individuals' characterizations about their current existence. Stated more succinctly, people anticipate their future on the basis of what they think they are.

The model employed in this study (shown on p. 17) indicates that one's monitoring of others and self influences his characterizations of his current existence. One's self-concept behavior in turn, influences planning behavior, which in turn influences other operant actions undertaken by the individual. This model depicts a constant flow of decisions and plans as being a predominant aspect of human life. Rather than a decision or plan being mechanically followed by overt behavior, plans bring about the initiation of certain behavior coupled with the continued monitoring of objects in the environment. On the basis of this monitoring, further plans are made which influence the continuation, modification, or termination of that course of action.

An important distinction implicit in this picture of volitional linguistic behavior, is the distinction between aspirations and plans. Considerable evidence exists supporting the notion that anticipations of the future and desires for the future are empirically distinct phenomena (Bennett and Gist, 1964; Holloway and Berreman, 1959; Brookover, et. al., 1967a; Weiner and Murray, 1965;
and others). In addition, empirical support has been found for the proposition that people organize their behavior around plans to a greater extent than aspirations (Bryan and Erickson, 1970). Bryan and Erickson (1970: 4) have formulated the following propositions regarding these constructs:

(1) Voluntary decision making behavior is a function of perceived probable outcomes of social acts.

(2) The perceived probable outcomes of social acts are factors that are separate from desired outcomes. Although aspirations and plans may at times be similar for an individual, these constructs are substantively different in content and in their functions as related to human behavior.

(3) If voluntary behavior is a function of aspirations, these aspirations function within one's anticipations of the future.

Aspirations are concerned with desired future states; plans are anticipated future states. Plans constitute one result of the process depicted in the model presented on page 17, and as such are treated as the major dependent variable in this study. The empirical investigation reported herein is concerned specifically with the educational attainment plans of elementary students.

When using plans as a dependent variable contingent upon self-conceptions, a more than tangential issue often called the "rationalization problem" is encountered. This issue refers to the question of the ordering of the variables in the model. That is, do the plans people make influence their self-conceptions in an after-the-fact, self-deluding manner, or do self-conceptions influence the plans that people make? Many scholars, most notably Freud, have
drawn attention to the extensive powers of reationalization displayed by humans. A closer look at the theoretical position suggested in this study shows that this issue can be taken into account.

Focusing upon those portions of the model which are relevant to this problem of the interaction between the self-concept structure and plans about behavior (e.g., plans), the following is found:

\[ \rightarrow S \rightarrow P \rightarrow \]

The rationalization problem is represented by:

\[ \rightarrow P \rightarrow S \rightarrow \]

This latter schema, however, is a misrepresentation of the behavioristic perspective employed in this study. The model of self-conceptualization does not suggest that plans never influence self-conceptions, or more accurately, that planning behavior does not have any effect upon self-conceptualizing behavior. In fact, both figures fail to display consideration of the time sequence involved in behavior. From the perspective offered here, a more accurate picture of the process would appear as any sequential ordering of events. Behavior at time one could be said to influence behavior at time two and so forth. Similarly, self-conceptions at time one can be said to be linked to self-conceptions at a later time. Decisions at time one may be linked to later self-conceptions. The point is that from the perspective of Erickson and Brookover which has been adopted in this study, the assumptions required to ask which event or behavior occurs first usually involve grouping occurrences which take place over time; that is, falsely assume one
event where two or more contingent events have occurred.

The model, in so far as it has been presented, is in apparent disagreement with certain assumptions of cognitive dissonance theory with respect to this "rationalization problem." Dissonance theory holds that individuals' beliefs about self and reported decisions are often re-constructed after certain "dissonance producing" behaviors are carried out. Considerable discussion can be engendered, concerning this issue which is central to both cognitive dissonance theory and self-concept theory; indeed, the preceding passage concerning the phenomenon of rationalization is obviously germane to this issue. However, further discussion is delayed concerning this issue until the last chapter when relevant data and findings have been presented.

The model utilized in this research has been presented schematically (see p. 17) and compared in general terms with the earlier model of Kinch. At this point, it is appropriate to discuss in more detail the formal theoretical model of the sources and functions of self-conceptions.

The Theoretical Model of Self-Conceptions

The model presented on page 17 assumes that individuals monitor the actual behavior of others and define themselves linguistically. Self-defining linguistic outputs (self-conceptions) at any given point in time influence the plans people make, which in turn to some extent, influence their operant behavior. The model, utilizing
a multiple self-orientation, allows for numerous self-defining linguistic behaviors to be operating in the emergence of any particular plan. Brookover and Erickson (1969) use the term "self-concept structure" to denote all those statements which people make about themselves in any given role. Within the model, the self-concept structure is analytically viewed in terms of three components, or three generic categories of self-conceptions. These three categories of self-conceptions represent a way of organizing certain of the various ways a role occupant conceives of himself in that role; or more precisely, how the individual sees himself as he carries out the tasks which make up that role.

The analytic categories making up the self-concept structure are postulated to be:

1) Self-conceptions of the ability to carry out role requirements (SCA);

2) Self-conceptions of the instrumental value (rewards and costs) of role performance (SCR); and

3) Self-conceptions of the intrinsic value of role performance (SCINT).

It is assumed in this schema that individuals have learned the normative, or moral, boundaries of the role in which they are engaged. While role expectations or prescriptions for self can perhaps be viewed as one category of self-conceptions, it is assumed for the purposes of this research that the broad moral limitations placed on any role define the boundaries within which the other components of the self-concept structure operate. Even though an individual learns what he thinks are the appropriate
behaviors for him in each of his roles, such "appropriateness" is usually defined in terms of more or less broad boundaries. It is within these role defining boundaries that the model of self-conceptions theoretically operates to predict voluntary behavior.

These three aspects or categories of self-conceptions are constructs which are analytically mutually distinct concepts. It is generally hypothesized that a knowledge of these three sorts of self-conceptions will aid in the efficient prediction of plans. There is no intention to reify theoretical constructs by implying that individuals necessarily arrange their conceptions of self in the manner suggested by the model. Rather the model is a proposed guide for organizing the collection of data to be used in predicting that linguistic behavior referred to as plans for self.

As noted before, the interactive, as well as the additive and independent influence of self-conceptions is a central aspect of this model. It is the interactions among these three components of the self-concept structure which are hypothesized as being important in accounting for plans which individuals make in the roles they carry out.

Self-conceptions of ability

Many researchers have conducted reliability and validity studies of what Brookover and his associates have referred to as self-concept of ability (Brookover, et. al., 1962; Brookover, et. al., 1965; Brookover, et. al., 1967). This construct refers to an...
individual's characterizations of his capability to carry out role
tasks. The ideas of Atkinson (1965) and Rotter (1966) in the area
of expectancy theory are independently developed notions which are
similar to the construct of self-concept of ability. Self-concept
of ability is also conceptually similar to the theoretical construct
of powerlessness often utilized in theories of alienation.

As a theoretical construct, self-concept of ability (SCA) is
viewed by Brookover as a functionally limiting variable in relation
to decisions an individual makes about role tasks. That is, self-
concept of ability acts as a threshold variable, a condition of
some minimal level before it has an impact. Before an individual
will decide to pursue a certain course of action, it is assumed he
must believe there is some possibility of completing the action.
There is no contention that self-concept of ability, in and of it-
self, is an antecedent condition sufficient to bring about any
behavior. Unless individuals conceive that there is reasonable prob-
ability of their being successful at a task, they are not likely to
decide to attempt that task. It should also be noted that Brookover
and his associates assume that even if an individual conceives of
himself as having a high probability of successfully completing some
task, this does not mean that he will decide to attempt that task.
The theoretical relationship between SCA and performance is not
linear; self-concept of ability is theorized to be a necessary, but
not sufficient condition for the emergence of decisions or plans to
pursue activity.
It should be clear that when the notion of self-concept of ability is described in terms like "conceptions of a reasonable probability of successfully completing a role task", reference is being made to the important notion of the imaginative completion of the act. This research is concerned with people as they examine some task and make a decision about their ability to carry out that task. In considering how self-conceptions of ability develop in individuals, the factors influencing how people draw conclusions about their competencies are under study. In this regard, Brookover and his associates, and many others, have studied the linkages among the evaluations which others make of an individual's ability, the individual's perceptions of those evaluations, and self-conceptions of ability. In a paradigm similar in form to that proposed by Kinch, Brookover suggests that in evaluating his own abilities an individual utilizes the judgments others are perceived to make of him. Using the conceptual modifications employed in this study, the individual monitors the way he is evaluated by others, and uses these monitored evaluations or judgments in reaching conclusions about his own attributes, capabilities and behaviors. Theoretically, it is through this process that one formulated self-conceptions of ability in carrying out role tasks.

Exactly which "others" are important in self-concept development of the individual, is assumed to vary from role to role. Three categories of others, or role-partners, are usually considered to be significant to students. The impact of the peer group upon students'
values and behaviors has been given considerable attention (Coleman, 1961; Herriott, 1963). In addition, the importance of teacher expectations have been the subject of prominent research and journalistic writing (Rosenthal and Jacobson, 1968; Kozol, 1967). However, parental influence has been concluded to be of prime importance in developing self-conceptions of academic ability (Brookover, et. al., 1965; Brookover, et. al., 1967). The model used in this research organizes the expectations and evaluations impinging on students from their social milieu in terms of influence of parents, teachers, and friends.

The bulk of the empirical research that has been carried out with regard to self-concept of ability has been concerned with the student role. The self-concept of academic ability, as it has been specifically referred to in these researches, theoretically functions to set limits on what students decide or plan to do. That is, a student's decision to enroll in a course of one degree of difficulty rather than another, to strive for good grades, to study rather than go to a movie, or his plans as to whether to go to college, are functionally limited by his or her self-conceptions of academic ability.

Brookover, et. al., (1962) developed and validated an instrument designed to measure self-concept of academic ability (see Appendix A). Subsequent research has focused on the relationships between self-concept of ability and certain academic behaviors in addition to certain types of decisions made by students. The self-concept of
FIGURE 1.2

ANTECEDENT CONDITIONS INFLUENCING SELF-CONCEPT OF ABILITY (SCA)

<table>
<thead>
<tr>
<th>Actual Behavior of Significant Others and Environmental Conditions</th>
<th>Monitored Behavior and Conditions</th>
<th>Characterization of Self</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Evaluations of Student Role → 1. Monitored Evaluations by Others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. from Parents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. from Teachers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. from Friends</td>
<td>2. Monitored Criteria Provided by Others</td>
<td></td>
</tr>
<tr>
<td>D. from Others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Criteria to be Utilized by Student in Evaluating his own Performance → 4. Prior Self-Concept Structure of Ability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. from Parents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. from Teachers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. from Friends</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. from Others</td>
<td>3. Monitored Prior Behavior of Self in Similar Roles</td>
<td></td>
</tr>
<tr>
<td>3. Other Environmental Conditions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Resources Available for Role Performance X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(where X represents other sets of unspecified variables which contribute to human action, e.g., hereditary factors, nutritional variables, environmental conditions, etc.)
academic ability has been shown to predict academic achievement at higher levels than either measured intelligence or socio-economic status level (Brookover, et. al., 1967). In addition, Bilby (1970) found that self-concept of ability was a more efficient predictor of educational attainment aspiration than either socio-economic status level or measured intelligence. Bryan (1969) found that "students who have a high self-concept of ability were much more likely to have high educational plans than were those who received a low self-concept of ability score". In this study, therefore, a measurement of self-concept of ability is utilized as an aid, in conjunction with the other two components of the self-concept structure, in the prediction of plans made by students.

Self-conceptions of instrumental value

The second analytic component of the model of the self-concept structure is concerned with the individual's assessments of the rewards and costs associated with his carrying out a given role. Self-conceptions of the instrumental value of role tasks \( \text{SC}_{RC} \) viewed as conceptions the individual makes of himself in a role while treating the performance of that role as a means to certain

\[ \text{Because of the similarity in abbreviations in the terms "instrumental" and "intrinsic", the notation } \text{SC}_{RE} \text{ is employed throughout this report to represent self-concept of the instrumental value of the role. The } \text{RC} \text{ subscript is in reference of "rewards and costs".} \]
other consequences. These consequences can be viewed by the individual in weighing what he believes from his monitoring of the situation to be the rewards and costs for him which would follow from his carrying out a given act or set of acts. This analytic classification of self-conceptions is assumed to interact with the other two components of the self-concept structure to provide antecedent conditions for the emergence of plans about what course of action to pursue.

In precisely the same form as theoretically developed here, "self-conceptions of the instrumental value of the role" as a construct has not been subject to prior empirical research. Yet based on research in the area of operant conditioning and related fields, it would seem reasonable to anticipate theoretically important factors which might lead to an individual's definitions of reward and costs for self. Three such reasonable theoretically antecedent conditions are: 1) what individuals have been rewarded or punished for in the past; 2) (similar to, yet not synonymous with #1) the sanctions which accompany the normative demands of significant others; and 3) the extent to which significant others have access to information about what individuals do or plan to do.

Figure 1.3 incorporates these three antecedent conditions — i.e., reinforcement schedule, normative sanctions, and surveillance by

1The inclusion of this construct into the model follows acknowledgement of the fruitfulness of reinforcement notions employed by Skinner (1953), Homans (1961), and others.
significant others -- into a schematic representation of the sources of self-conceptions of the instrumental value of the student role.

In considering operational specifications intended to measure an individual's attachment of instrumental value to educational attainments, it is virtually impossible to divorce monitoring of the situation from self-conceptions. Every question one might ask which might tap the instrumental value to self of future attainments implicitly asks the respondent to imaginatively complete an act of future role performance, i.e., monitor the situation in which he might find himself. This obviously reflects certain descriptive deficiencies in the theoretical model. That is, certain logical and theoretical components of the model are not reflected in the empirical world. However, not all of the value of these analytic and rational distinctions are found in their descriptive power; rather, the value of these constructs lies in their contributions to the construction of a theory which is an aid in the prediction of future occurrences. Unlike the measure of self-conceptions of ability, attempts to empirically approximate the theoretical meaning of self-conceptions of the instrumental value of the role unavoidably tap both monitoring of the situation and self-conceptions. While it is thus apparently impossible to empirically assess instrumental values to self of the role apart from the monitoring process, explanatory power could be lost if this variable is excluded from the study. While it may be difficult to measure this construct in a theoretically pure sense, the measurement procedures employed here
**FIGURE 1.3**

**ANTECEDENT CONDITIONS INFLUENCING SELF-CONCEPT OF INSTRUMENTAL VALUE OF ROLE (SC<sub>RC</sub>)**

<table>
<thead>
<tr>
<th>Actual Behavior of Significant Others and Environmental Conditions</th>
<th>Monitored Behavior and Conditions</th>
<th>Characterization of Self</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Normative Sanctions which Significant Others Attach to Expectations</td>
<td>1. Monitored Normative Sanctions</td>
<td></td>
</tr>
<tr>
<td>A. by Parents</td>
<td>B. by Teachers</td>
<td>C. by Friends</td>
</tr>
<tr>
<td>2. Reinforcement Schedule</td>
<td>2. Monitored Reinforcement Schedule</td>
<td>Self-Concept of Instrumental Value of Role</td>
</tr>
<tr>
<td>A. by Parents</td>
<td>B. by Teachers</td>
<td>C. by Friends</td>
</tr>
</tbody>
</table>

(where X represents other sets of unspecified variables which contribute to human action, e.g., hereditary factors, nutritional variables, environmental conditions, etc.)
do not greatly detract from the theoretical model.

Since self-conceptions of instrumental value and self-conceptions of ability are both based on the notion of the "completion of the act", and both are dimensional constructs with a "high" and "low" value as measured at any given time, an empirical association between the two might be anticipated. In other words, individuals who conceive of themselves as capable of successfully accomplishing a certain task might very well also conceive of themselves as being rewarded upon the completion of that task. Yet this is an impressionistic hypothesis which fails to take into account the analytic nature of the constructs and the deductive (and therefore, predictive) nature of the theory of which these constructs are a part. The two constructs are analytically distinct and should be viewed as theoretically having an orthogonal relationship. That is, these two components of the self-concept structure theoretically can be associated positively, negatively, or not at all. The major concern here is with the way these various configurations of self-conceptions are associated with the plans of students.

Self-conceptions of intrinsic value

The individual's conceptions of self-worth in a role are referred to as the intrinsic value to self of the role (SC\textsubscript{INT}). With this component of the model, an attempt is being made to incor-

\textsuperscript{1}This component of the model reflects the work of humanistic social psychologists like Maslow (1954), Rogers (1961), and others.
porate the idea of the internalized importance of the role, i.e.,
the definition of self, or identity, which each role carries with it.
When discussing self-conceptions of the instrumental value, the role
is specifically viewed as a means to other ends classified as either
rewards or costs. Self-conceptions of the intrinsic value of the
role as a construct, however, treats the role as an end in itself;
it refers to the way people place high value upon, are neutral about,
or reject certain role identities. More specifically, the notion of
intrinsic values of self implies that some children like seeing
themselves as students, others see being in the student role re­
pulsive, and others see themselves somewhere in between. Theoretical­
ly, knowledge of these self-conceptions of the intrinsic value of
the student role, in conjunction with knowledge of the other analytic
components of students' self-concept structures, is an aid in
predicting the plans which students make concerning how far they
will go in their formal schooling.

As with instrumental values to self, the theoretical notion of
self-conceptions of the intrinsic value of the role has not been
previously investigated in precisely the theoretical form developed
here. In contemplating what conditions antecedent to intrinsic
values to self might be, contemporary structural-functional theory
would suggest that the values of significant others are important.
Yet, the mechanism generally assumed to be employed by significant
others in influencing individuals to learn certain values is the
sanction, or reinforcement schedule. While these considerations are
reflected in Table 1.4 which suggests some determinants of intrinsic values to self, this discussion remains within the sphere of speculation and requires considerable exploratory empirical study.

Intrinsic value to self of the role is analytically distinct at any given time from instrumental rewards and costs associated with role performance. Viewed developmentally, the instrumental consequences following from any given behavior, plan, or self-conception can bring about a change in that behavior, plan or conception of self. Indeed, evaluation, viewed earlier as antecedent conditions related to self-conceptions of ability, can be viewed by behavioral psychologists as merely reinforcers (i.e., those contingencies which reinforce and therefore modify behavior). Likewise, instrumental consequences can bring about changes over time in the other two components of the self-concept structure. At any given point in time, however, these three components are analytically distinct, and constitute important variables in any investigation of volitional behavior.

Research Objectives

A large number of specific research objectives can be developed from the theoretical model of the sources and functions of self-conceptions. In this initial empirical test of the model, four research objectives are investigated. In summary, these objectives are:

1. To assess the validity of self-conceptions as predictors of student plans when self-conceptions are
organized in terms of the model of the self-concept structure;

(2) To discover which of a number of parental behaviors are associated with each of the three categories of self-conceptions;

(3) To find out if self-conceptions intervene between parental variables and student plans; and

(4) To assess the full theoretical model (i.e., parental variables plus self-conceptions) as predictors of student plans.

A brief discussion of these objectives is in order. The first objective, that of empirically assessing the utility of using the three categories of self-conceptions as predictors of student plans, entails the consideration of interactive effects among self-conceptions as well as the independent and additive effects. This investigation of interaction effects follows from the theoretical view of human self-conceptualization as a dynamic process, yet a process made up of concrete and discrete instances of the individual making himself the object of observation within, and in relation to, an environment.

The second objective concerns the relationships among the behaviors of various others and a student's self-conceptions. The general theoretical statement maintains that the actual behavior of significant others is monitored by individuals and influences the individual's self-conceptions. Considerable research has consistently shown parents to be extremely influential in determining many of their children's values and behavior patterns (Herriott, 1963; Brookover, et al., 1965). Thus, parents are chosen to be
studied as significant others to their children as students. The selection of parents as the focus of this part of the study is based on the assumption that parents are in a position to control the majority of the contingencies associated with their child's performance in the student role. This second part of the empirical analysis, then, is concerned with associations between reported parental behaviors and beliefs, and student self-conceptions. Specifically, the major questions addressed in this section of the study are:

(1) What parental variables are most highly associated with self-conceptions of academic ability of students?

(2) What parental variables are most highly associated with self-conceptions of the instrumental value of the student role?

(3) What parental variables are most highly associated with self-conceptions of the intrinsic value of the student role?

The third research objective is to see if student self-conceptions intervene between parental variables and student plans. In carrying out this objective, the findings from the first two objectives are taken into account. In investigating the first objective, precisely which components of the model of the self-concept structure are in aid in predicting plans will be ascertained. In exploring the second objective, those components of the self-concept structure which have measured utility in predicting student plans are viewed in association with theoretically relevant parental variables. The specific parental variables which the data show to be associated to each of the three categories of self-conceptions are isolated in
this fashion. The third research objective then utilizes the information gained from the first two portions of the analysis and, by a standard procedure to be discussed in Chapter II, tests to see if the categories of self-conceptions intervene between the parental variables with which they are associated and student plans.

The fourth and final research objective involves the predictive utility of the entire model of the sources and functions of self-conceptions. While traditional non-recursive modeling techniques are not appropriate for assessing a dynamic model such as the one elaborated here, it is desirable to have some way of comparing this model with other similar theoretical notions. Therefore, the final research objective entails predicting student plans from knowledge of the empirically relevant parental variables (ascertained from the second objective) plus the three categories of self-conceptions.
CHAPTER II

METHODS

This chapter consists of three parts. First, the population studied, sampling procedures, and sites of the research are discussed. The instruments used in measuring the variables under study are presented in the second section. The third section presents the analytic techniques utilized in answering the research questions outlined in the first chapter.

Population Under Study and Sampling Procedure

As part of the Michigan State Assessment of School Programs, the Michigan Department of Education had collected data on socio-economic status level, racial composition, and achievement level from every elementary school in Michigan. In conjunction with larger research, several elementary schools were selected for study. Schools were paired with regard to similarities in socio-economic status level and racial composition, and variability with regard to mean achievement level. Sixteen of these schools were included in the present study, resulting in the administration of questionnaires to over 2,000 fourth-, fifth-, and sixth-grade students.

In addition, under the sponsorship of the Michigan State Assessment Program, Michigan Department of Education and in collaboration with Dr. Wilber B. Brookover, Michigan State University and Edsel L. Erickson, Western Michigan University, four school communities were
selected to study student and parent beliefs about themselves, others in their lives, and their schools. As part of this second larger study, additional data for the present investigation were obtained. From the group of schools in which students were administered questionnaires, four communities were selected which were located close enough to Western Michigan University such that the logistical problems inherent in an interview study could be overcome. From the total number of students from each of the four schools who had completed questionnaires, four samples of thirty each were randomly selected for parental interviews. With the assistance of school authorities, the addresses of the parents were located from school records. Interviews were then conducted with 120 parents of students who had previously completed questionnaires. This entire sampling and data collection procedure was completed during Spring, 1971 for both student and parental data.

Elementary students are not usually chosen as subjects in research concerned with educational attainment plans. Yet, it is entirely consistent with the aims of the present study to assess the development and functions of self-conceptions of elementary students in relation to their educational plans. It is safe to assume for the purposes of this study that elementary age students experience less press to comply with norms demanding high achievement and demonstrations of academic ability than do older students. While this is not to say that such norms are not operating, it does suggest that the lack of proximity to the human action about which
plans are made (i.e., educational attainment) reduces the salience of these student plans in the eyes of those significant others who are concerned with the academic life of students. In a sense, the plans of elementary students can be viewed as being "more volitional", and "less compliant" (cf. Kelman, 1961), than the plans of older students. Thus, the choice of elementary students as subjects in this research reflects a desire to eliminate via sampling procedures the confounding effects of various types of "institutional press" which, while certainly not absent at the elementary level, are undoubtedly less prominent than would be the case with older students.¹

Instrumentation

Data were collected from students on the following variables: Educational attainment plans; self-concept of academic ability; self-concept of instrumental value of the student role; and self-concept of intrinsic value of the student role.

Self-concept of academic ability (SCA)

As noted earlier, Brookover and his associates (Brookover, et.

¹The notion of institutional press has been utilized in one form or another in Western literature ever since the early philosophical work of Locke. Most recently, the theoretical and empirical work of Friedenberg (1967) with regard to the concept of ressentiment has reflected a concern in this area. Friedenberg's finding most germane to the present study, was that in all nine high schools which he studied, considerable "institutional press" i.e., implicit and explicit normative demands counter to individual desires, was present in the lives of students.
al., 1962) had developed an instrument with known indices of reliability and validity for the measurement of self-concept of academic ability. Patterson (1966) reports a reliability and validity study of the self-concept of ability scale. Using grade-point-average as the criterion (dependent) variable, SCA scores were correlated positively (.57) when predicting grades from a previous year's SCA scores; a positive and significant correlation maintained under conditions of known negative associations between measured intelligence and grade achievement. The results of cross-validation, internal consistency reliability tests, cluster analysis, factor analysis, logical analysis, and individual item analysis all suggest that the SCA scale is homogeneous with respect to content, reliable over time,¹ and a valid predictive instrument of theoretically-derived criterion variables.² This instrument, modified for administration to elementary students, is made up of the following eight items:

1. Think of your friends. Do you think you can do school work better, the same, or poorer than your friends?
   1. Better
   2. The same
   3. Poorer

2. Think of the students in your class. Do you think you

¹To the extent that self-conceptions of ability change in individuals, total stability of SCA scores would not be expected. Thus, the reliability of SCA scores becomes difficult to assess when the researcher cannot assume the absence of change induced by other than experimental intervention.

²For another reliability and validity studies of this instrument, see Joiner (1966).
can do school work better, the same, or poorer than the students in your class?
1. Better
2. The same
3. Poorer

3. When you finish high school, do you think you will be one of the best students, about the same as most of the students, or below most of the students?
1. One of the best
2. About the same as most of the students
3. Below most of the students

4. Do you think you could finish college?
1. Yes, with no difficulty at all
2. Yes, as long as I work hard
3. Yes, but I will probably have a lot of difficulty
4. No, it will be too difficult

5. If you went to college, do you think you would be one of the best students, about the same as most of the students, or below most of the students?
1. One of the best
2. About the same as most of the students
3. Below most of the students

6. If you want to be a doctor or a teacher, you need more than four years of college. Do you think you could do that?
1. Yes, with no difficulty at all
2. Yes, as long as I work hard
3. Yes, but I will probably have a lot of difficulty
4. No, it would be too difficult

7. Forget how your teachers mark your work. How good do you think your own work is?
1. Excellent
2. Good
3. About the same as most of the students
4. Below most of the students
5. Poor

8. What marks do you think you really can get if you try?
1. Mostly A's
2. Mostly B's
3. Mostly C's
4. Mostly D's
5. Mostly E's

The responses of these items are summated to form the self-concept.
of academic ability score.

**Self-concept of instrumental value of role (SCRC)**

As measures of self-conceptions of the instrumental value of the student role, the children in the sample were asked the following questions:

1. When I do a good job on my school work, I am more popular with other students.
   1. No
   2. Doesn't matter
   3. Yes

2. If I do well in school, it will be easier for me to get the job I want when I graduate.
   1. No
   2. Doesn't matter
   3. Yes

3. My parents allow me greater freedom when I do well in school.
   1. No
   2. Doesn't matter
   3. Yes

4. If you came home with a good report card, what would your parents most likely do?
   1. Nothing in particular
   2. Praise me
   3. Give me special privileges
   4. Give me money or some special reward
   5. Other _____________________________________________
   (no responses were recorded for the fifth response category)

5. If you came home with a poor report card, what would your parents most likely do?
   1. Nothing in particular
   2. Scold me
   3. Take away privileges
   4. Punish me severely in some way
   5. Other _____________________________________________
   (responses to the fifth response category were coded in the following manner)
   5. Talk to me about it
   6. Encourage me to do better

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The data gathered from students responding to these five items were analyzed using techniques described below. From these analyses, a rationale became apparent which supported the following procedure. When assessing the predictive utility of self-conceptions of the instrumental value of the student role, all five items tapping SCRC are used as a group. In testing the research hypotheses which call for a single indicator or SCRC, item #2 is used, i.e., "If I do well in school, it will be easier for me to get the job I want when I graduate." The following discussion presents the rationale supporting this procedure.

Of the five items employed to measure instrumental values to self of being a student, the last two call for responses which are nominal categories. Thus, in attempting to formulate a scale of self-conceptions of the instrumental value of the student role, different statistical techniques are used with these latter two items than with the first three items which are in the form of ordinal measurement. First, the treatment of these ordinal items, i.e., items #1, 2, and 3, will be discussed.

To see if the first three of these items share a common variance, i.e., might be measuring a unidimensional phenomenon, an intercorrelation matrix was calculated. This matrix appears in Table 2.1. The three items do not display sufficient empirical redundancy to allow the assumption that they are tapping similar self-conceptions. Evidently, the student role is made up of a
variety of activities or sub-roles such that "general rewards and
costs" is not a salient notion. Different rewards and costs might
enter into a student's life as contingencies depending on which of
several sub-roles a student considers in carrying out various tasks.
Yet, measurements of student monitoring of self in relation to these
contingencies need not display high associations with one another.

TABLE 2.1

INTERCORRELATIONS AMONG THE THREE ORDINAL MEASURES OF
SELF-CONCEPTIONS OF INSTRUMENTAL VALUE OF THE STUDENT ROLE

<table>
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<tbody>
<tr>
<td>#1 (popularity)</td>
<td>----</td>
<td>.12</td>
<td>.26</td>
</tr>
<tr>
<td>#2 (good job)</td>
<td>----</td>
<td>----</td>
<td>.14</td>
</tr>
<tr>
<td>#3 (freedom)</td>
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For present purposes, however, the theoretically most relevant
items of the three ordinal items is item number two. An examination
of the content of the items indicates that the first and third items
tap short-range types of rewards, i.e., popularity with peers, and
lack of parental restraint. The second item is an indicator of a
long-range consideration about one's later life. Since the major
dependent variable, educational attainment plans, represents a
decision which is also future oriented, this item takes on primary
importance as an indicator of instrumental value to self of student.
Since the fourth and fifth items contain nominal response categories, the responses to these items cannot be statistically manipulated in the same way as ordinal data; that is, responses in ordinal form cannot be summated with nominal response categories. However, techniques are available which allow choices to be made as to which of these nominal categories are most helpful in predicting any given dependent variable. That is, by using predictive efficiency as a criterion upon which to base judgments, certain of these nominal categories may be grouped into a dichotomous variable, thus providing considerable easier interpretability. The statistical technique used in this process is a computer program called Automatic Interaction Detection (AID). Automatic Interaction Detection allows its user to select the combinations of responses which are most strongly associated with the selected dependent variable. For each predictor variable, the response categories can be collapsed into a dichotomized variable with response categories grouped in the most highly predictive fashion for that variable within that particular

---

1Consideration of the temporal characteristics of these items also might account for the higher correlation between the first and third items which are basically oriented to the present or short-range future activity.

2This process is based on a series of significance tests of one-way analysis of variance. When this program is carried out, a dependent variable is analyzed with a given set of predictor variables. The total sample is split into two groups based on the predictor which will minimize the within-group sum of squared deviations for the dependent variable. Further references may be found in Sonnquist (1970).
set of data.

Since this program can provide information about dichotomizing both qualitative (nominal) or quantitative (ordinal, interval, ratio) data, it is precisely the tool needed in this research to analyze certain of the data gained from students. That is, by re-formulating a multi-category set of responses into a dichotomous variable, there is then a possibility of constructing a scale of self-conceptions of the instrumental value of the student role. The possibility for constructing such a scale is contingent upon the degree to which the constructed dichotomous variables share their variance with (are evidently measuring the same phenomena as) the previously selected measure of self-conceptions of the instrumental value of the student role.

By carrying out the AID program using the fourth and fifth items as predictors of educational attainment plans, information is provided concerning which categories to collapse together in order to maximize the prediction of educational attainment plans. The following are the results of this AID analysis.

Item #4

If you came home with a good report card, what would your parents most likely do?
1. Nothing in particular
2. Praise me
3. Give me special privileges
4. Give me money or a special reward

The dichotomization which maximizes the prediction of educational attainment plans with this item is between response #3 and
responses #1, 2, and 4. These responses, then, were converted to a dichotomous variable by setting response of #3 equal to 1, and responses #1, 2, and 4 equal to 0.1

Item #5

If you came home with a poor report card, what would you parents most likely do?
1. Nothing in particular
2. Scold me
3. Take away privileges
4. Punish me severely in some way
*5. Talk to me about it
*6. Encourage me to do better
*7. Help me with my work
*8. Make me work harder

*Categories resulting from open-ended responses

The split among these responses which maximizes the prediction of educational attainment plans is between responses #1, 2, 3, and 4, and responses #5, 6, 7, and 8. Thus responses #1-4 were re-coded as 1, and responses #5-8 were re-coded as 0.

Having constructed these two dichotomous variable from nominal categories by using predictive efficiency as a criterion upon which to base judgments, intercorrelations can now be calculated to see if these two dichotomous variables share any variance with the previously chosen indicator of self-conceptions of the instrumental

1The re-assignment of numerical values (0 or 1) to these dichotomous categories is an arbitrary matter. While the direction of correlations (positive or negative) between a dichotomous variable and another variable will be affected by the way the dichotomous categories are assigned numbers, the strength of the measured associations, and therefore the statistical significance of the findings, are not altered.
value of the student role (i.e., item number two listed earlier in this section). The intercorrelations among these three variables is shown in Table 2.2.

### TABLE 2.2

INTERCORRELATIONS AMONG TWO CONSTRUCTED DICHOTOMOUS VARIABLES AND PREVIOUSLY CHOSEN MEASURE OF SELF-CONCEPTIONS OF THE INSTRUMENTAL VALUE OF THE STUDENT ROLE

<table>
<thead>
<tr>
<th></th>
<th>#2 (good job)</th>
<th>#4</th>
<th>#5</th>
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<tbody>
<tr>
<td>#2</td>
<td>----</td>
<td>-.03</td>
<td>-.04</td>
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<tr>
<td>#4</td>
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<td>#5</td>
<td>(.09)</td>
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It can be seen from Table 2.2 that the two variables constructed as a result of AID analysis are not measuring precisely the same phenomenon as is the previously chosen indicator of $SC_{RC}$. A decision therefore was made concerning how the various measurements of self-conceptions of the instrumental value of the student role will be utilized in this study. Based on the interpretation that 1) there are a variety of rewards and costs which enter into a student's life, and that 2) measurements of student assessments of these instrumental rewards and costs for self need not be highly
associated with one another, this research will assess as a group all five measures of self-conceptions of the instrumental value of the student role. In those cases when the empirical tests of the theoretical model of self-conceptions call for the use of a single measure of $SC_{RC}$ (such as when $SC_{RC}$ is treated as a dependent variable), the one most theoretically relevant measure will be used. This single measurement, with the highest degree of face validity, is "If I do well in school, it will be easier for me to get the job I want when I graduate."

**Self-concept of intrinsic value of the student role ($SC_{INT}$)**

As a measure of the intrinsic value to self of the student role, students were asked:

- **How important is it to you to be a good student?**
  - 1. It's not very important
  - 2. It's important, but other things are more important
  - 3. It's important, but other things are just as important
  - 4. It's the most important thing I can do

In order to minimize the possibility of tapping the influence of instrumental effects upon self stemming from role partners, this item makes no reference to significant others in the academic lives of students. Emphasis is placed on approximating the theoretical meaning of "intrinsic value to self", without assessing the influences which have gone into the development of these values. That is, items were avoided which might tap student assessments of the contingencies which others place on student role performance.
Educational attainment plans

Educational attainment plans is the major dependent variable in this research. To tap this variable, students were asked:

1. Sometimes what you want to happen is not what you think will happen. How far do you think you will go in school?
   1. Finish grade school
   2. Go to high school for a while
   3. Finish high school
   4. Go to college for a while
   5. Finish college

Parental variables

Data were collected from parents on the following variables:
Evaluations of child's student role performance; normative expectations for child's educational attainment; normative expectations for child's educational achievement; importance which parents attach to child's getting "B's or better"; parental surveillance of child in student role; parental value orientation toward education; reactions to good and bad report cards; educational attainment plans for child; and educational attainment aspirations for child. These are the parental variables that will be assessed in relation to the three categories of self-conceptions in the exploratory portion of this study. That is, these parental variables will be utilized as predictors of self-conceptions of ability, and self-conceptions of the instrumental and intrinsic values of the student role.

Parental evaluations of ability -- previous research has successfully utilized the following items as indicators of parental
evaluations of their child's academic ability (Brookover, et. al., 1965):

1. Do you think your child can do school work better, the same, or poorer than his (or her) friends?
   1. Poorer
   2. The same
   3. Better

2. Do you think your child will be with the best, average, or below average students when he (or she) graduates from high school?
   1. Best
   2. Average
   3. Below average

3. Do you think your child could graduate from college?
   1. No
   2. Maybe
   3. Yes

4. Remember, a person needs more than four years of college to be a doctor or a college professor. Do you think your child could do this?
   1. No
   2. Maybe
   3. Yes

5. What grades do you think your child can get?
   1. D's and E's
   2. B's and C's
   3. A's and B's

These items were developed in slightly altered form for administration to students in order to measure perceived significant others' evaluation of academic ability. In that form, this scale was subject to several reliability and validity studies; these studies dealt with unimpaired, visually impaired, and hearing impaired students (Vonk, 1969; Joiner, 1966; Brookover, et. al., 1965). In all cases, the perceived evaluations scale was shown to be internally consistent, reproducible, stabile, as well as
having content and predictive validity. The present data show that these five items display quite high intercorrelations, as shown in Table 2.4. Therefore, responses to these five items are summed, resulting in a scale of parental evaluations ranging from 5 to 15.

### TABLE 2.3

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Educational attainment expectations -- the normative expectations which parents hold for their child with regard to educational attainment was measured by asking parents:

How far in school do you think your child should go?
1. I think he should finish the eighth grade (or less)?
2. I think he should go to high school for a while.
3. I think he should graduate from high school.
4. I think he should go to business or technical school.
5. I think he should go to college for a while.
6. I think he should graduate from college.
7. I think he should do graduate work beyond college.

Educational achievement expectations -- the normative expecta-
tions which parents hold for their child with regard to educational achievement was measured by asking parents:

What grades do you think your child should get?
1. Mostly E's
2. Mostly D's
3. Mostly C's
4. Mostly B's
5. Mostly A's

Importance attached to grades -- another variable reflecting the held norms of parents -- is the degree to which parents attach importance to their child's getting good grades in school. To tap this variable, parents were asked:

How important to you is it that your child gets mostly B's or better?
1. Getting B's or better is not important at all
2. Some other things are more important
3. Getting B's or better is among the important things in school
4. Getting B's or better is the most important thing in school

Surveillance -- the degree to which parents were aware of the performance of their child in the student role was measured by asking parents two questions:

1. Could you tell us what stories or reading book your child has been studying at school?
2. Do you know what your child has been working on in arithmetic class lately?

Parents' answers to these questions were classified into the following three categories:

0 - Does not know
1 - Can give a general answer
2 - Can give a specific answer

These responses were then summated, resulting in a scale of
surveillance ranging from 0 to 4.

Value orientations toward education -- to tap the manner in which parents valued formal education for their child, parents were asked:

What do you think is the most important thing for your child to get out of school?

This item was open-ended in nature. The interviewers were able to categorize parents' responses into one of the following classifications:

1. Intrinsic value of education (learning for learning's sake, education as good in and of itself);
2. Pragmatic value of education (education is seen as a means of gaining specific goals, such as a good job, more income);
3. Social adjustment (education is seen as a preparation for getting along in society and with other people);
4. Personality development (education is seen as a way to help students "actualize" themselves, to develop into "all they can be").

These responses are obviously nominal categories. However, there is a theoretical justification for collapsing these categories into dichotomous form. Response number one is concerned with education as an end in itself; responses number two, three, and four are all concerned with education as a means to other ends. Thus, a dichotomous variable may be formed by setting responses number 2, 3, and 4 equal to 0, and leaving the first response category coded as a 1.

Coded in this fashion, this variable, indicates whether parents value education instrumentally or intrinsically, and affords the researcher a variable which is readily interpretable.

Reactions to report cards -- parents reported the way they...
placed contingencies upon their child's student role performance by answering the following questions:

1. When your child comes home with a good report card, what do you do?
   1. I give him (or her) more privileges
   2. I give him (or her) money
   3. I praise him (or her)
   4. I don't do anything out of the ordinary

2. When your child comes home with a poor report card, what do you do?
   1. I take away privileges
   2. I physically punish him (or her)
   3. I don't do anything out of the ordinary
   4. I ask him (or her) to explain why he did poorly
   5. I offer to help him (or her) with school work
   6. I encourage him (or her) to do better

The responses to these two questions are nominal categories. Automatic Interaction Detection (see p. 2-8 ff) was used to provide information as to which of these categories are most highly predictive of the major dependent variable, the educational attainment plans of students. Thus, a dichotomous variable representing parental reactions to report cards was constructed.

AID analysis of the first item indicated that collapsing responses number 1, 2 and 4 together maximized the prediction of student plans. Thus, the data gained from this "reaction to good report card" item were re-coded with response #3 equal to 1, and responses #1, 2, and 4 equal to 0. This categorization of the responses suggests that the major difference among parents in this sample in the way they react to good school work on the part of their children is that some parents provide emotional or affective support for their children, while others ignore good school work or react by
giving material rewards to their children. Findings germane to this variable will be interpreted in terms of this distinction.

When the item tapping parental reactions to poor report cards was analyzed with the AID program, it was found that the best dichotomous variable would be formed by re-coding responses #1, 2, and 4 as 0 and responses #5 and 6 as 1 (there was no observations of response number 3 in the sample). In the case of parental reactions to poor report cards, then, it appears that parents can be classified as either "supportive" of their child's academic shortcomings or problems, or react with overt reprimands. Again, this distinction which is grounded in the data will be used in interpreting these findings with respect to this variable.

Educational attainment aspirations and plans -- parental attainment aspirations and plans for child were measured by asking the following questions:

1. If your child could go as far in school as you wanted him (or her) to go, how far would that be?

Responses to this open-ended question were coded as follows:

1. Quit school as soon as possible
2. Go to high school for a while
3. Finish high school
4. Go to college for a while
5. Finish a two-year college (business, trade, or technical school)
6. Finish college
7. Do graduate work beyond college

2. There are times when what we want to see happen in the future is not the same as what we really think will happen. How far in school do you really think your child will go?

Responses to this "plans for child" items were coded the same as the
Analysis

This section enumerates the specific techniques employed in reaching the four general research objectives presented in Chapter I. These objectives may be briefly re-stated in the form of empirical questions.

1. What is the predictive efficiency of self-conceptualizations organized in terms of the model of the self-concept structure?

2. What parental variables are associated with the three categories of self-conceptions?

3. Do measured self-conceptions intervene between parental variables and student plans?

4. What is the predictive efficiency of the entire theoretical formulation of volitional behavior? That is, what is the predictive efficiency calculated when using empirically relevant parental variables plus student self-conceptions to predict student plans?

Objective I: self-conceptions as predictors of student plans

To assess the efficiency of the model of the self-concept structure in the prediction of students' educational attainment plans, multiple linear regression analysis is used (Kelley, et. al., 1969). Multiple regression analysis is a correlational procedure allowing the use of more than one predictor, or independent variable. This statistical technique provides the researcher with the coefficient of multiple determination, or multiple R, which allows the calculation of the explained variance in the dependent variable which
the data show to be accounted for by the predictor variables. In addition, beta coefficients, or beta weights, are calculated which represent the association between the particular independent variable for which each beta weight is computed and the dependent variable, with the effects of all other independent variable controlled.

In determining whether the components of the theoretical model have predictive utility, the multiple R's calculated from a series of regression equations will be compared. That is, comparisons will be made between the multiple R found from a given regression equation with the multiple R calculated from a regression equation including one or more "new" independent variables. Melichar (1965) provides a formula for an "F test" of the significance of an increase in the explained variance obtained from two regression equations.

To assess the predictive utility of the components of the model, then, the association between self-concept of academic ability (SCA), an educational attainment plans (EdPl) will be calculated. Because of the considerable research that has already utilized SCA as a predictor of various aspects of student overt and covert behavior, that variable is selected to constitute the initial "restricted model" (i.e., the initial predictor variable against which the other components of the model will be compared). The other components of the model will then be systematically added to regression equations with the obtained explained variances being compared to see if those "newer" constructs provide increased predictive efficiency.
Thus, the following regression equations will be calculated, with the multiple R's being compared after each new equation. The following includes the research hypotheses which will be tested to answer the first research question.

Equation #1

\[ X_{1b_1} + e = Y' \]

with \( X_1 = SCA \)
\( e = \text{error in prediction} \)
\( Y' = \text{predicted EdPl} \)

Equation #2

\[ X_{1b_1} + X_{2b_2} + e = Y' \]

with \( X_1 = SCA \)
\( X_2 = SCA_{RC} \)
\( e = \text{error in prediction} \)
\( Y' = \text{EdPl} \)

Research Hypothesis #1

\[ H_{R_1} : R_2^2 = R_1^2 \]

In Null Form

\[ H_{0_1} : R_2^2 = R_2^2 \]

Equation #3

\[ X_{1b_1} + X_{1b_1} + e = Y' \]

with \( X_1 = SCA \)
\( X_{1} = SCA_{INT} \)
\( e = \text{error} \)
\( Y' = \text{EdPl} \)

Research Hypothesis #2

\[ H_{R_2} : R_3^2 > R_1^2 \]
In Null Form

\[ H_{02} : R_3^2 = R_1^2 \]

Equation #4

\[ X_1b_1 + X_2b_2 + X_3b_3 + e = Y' \]

with \( X_1 = SCA \)
\( X_2 = SCRC \)
\( X_3 = SCINT \)
\( e = \text{error} \)
\( Y' = EdPl \)

Research Hypothesis #3

\[ H_{R3} : R_4^2 > R_2^2 \]

In Null Form

\[ H_{03} : R_4^2 = R_2^2 \]

Research Hypothesis #4

\[ H_{R4} : R_4^2 > R_3^2 \]

In Null Form

\[ H_{04} : R_4^2 = R_3^2 \]

As noted earlier, this investigation is also concerned with the interaction among the components of the model. In effect, the question is being raised as to whether self-conceptions interacting with one another contribute significantly to student's plans, over and above the contribution made by self-conceptions independently and additively. In investigating this question, a special type of multiple regression analysis called "dummy variable analysis" is utilized. With this technique, the theoretically relevant variables (those variables among which there is a concern with interaction
effects) are dichotomized and assume the value of 0 (low) and 1 (high). Interaction terms can now be calculated by merely multiplying the values of the dichotomized variables. Thus, if an individual scores "high" on two of the components of the self-concept structure, one may assess whether this combination of self-conceptions is associated with plans over and above the zero-order and additive associations of these variables.

Automatic Interaction Detection, as noted earlier, is a useful tool in making choices about dichotomizing variables. In this case, however, rather than collapsing nominal categories, the goal is to collapse ordinal scales into dichotomous form. In the past, dummy variable analysis for interaction effects has relied upon rather arbitrary decisions concerning where the cutoff point between "high" and "low" on any given scale was made. With AID, however, the precise point of dividing the sample into high and low on any given variable is determined empirically. While this technique maximizes the explained variance to be obtained with whatever variables are dichotomized, this also means that the explained variance to be obtained from the restricted model (dichotomized self-concept variables without interaction terms) is also maximized. Thus, in order for interaction terms to significantly add to the explanation of a dependent variable over the explanatory ability of the restricted model, there must be "true" interaction effects within the data. Thus, while as it is used here AID maximizes the ability to detect and interpret interaction effects, the nature of the associations...
within the data are not changed through the use of this technique. AID merely allows the researcher to apply a rational standard (i.e., predictive efficiency) to methodological decisions, rather than employing arbitrary guesses or change distributions.

To investigate interaction effects, the regression equation employing the three categories of self-conceptions as predictors of student plans (Equation #4) is re-calculated, substituting the dichotomized form of the variables for the scale score form. This new regression equation becomes Equation #5. Then another regression equation is calculated containing interaction terms formed by all possible combinations of the three categories of self-conceptions.

With $X_1 = SCA$

$X_2 = SC_{RC}$

$X_3 = SC_{INT}$

$X_4 = SCA \cdot SC_{RC}$

$X_5 = SCA \cdot SC_{INT}$

$X_6 = SC_{RC} \cdot SC_{INT}$

$X_7 = SCA \cdot SC_{RC} \cdot SC_{INT}$

given the calculation of Equations #5 and 6, it is possible to assess which of the variables interacting with one another provide predictive utility over and above the efficiency with which the primary self-concept variables without interaction terms predict student plans. Hypothesis #5, then, appears as:

Research Hypothesis #5

$H_{R_5} : r_6^2 > r_5^2$
In Null Form

\[ H_0: R_{05}^2 = R_{06}^2 \]

If the interaction terms as a group add to the prediction of plans, beta-weights will be relied upon as indicators of which interaction terms are most important.

**Objective II: parental variables associated with student self-conceptions**

After having assessed which components of the model are predictive of student plans, the investigation can now turn to the question of which parental variables are in fact associated with each component of the self-concept structure. It was indicated in Chapter I which parental variables were theoretically related to each of the components of the model. By once again utilizing multiple regression analysis, this aspect of the model can be empirically assessed.

As indicated in Figures 1.1, 1.2, and 1.3, the following general relationships are postulated:

1) SCA is primarily a function of parental evaluations of child's academic ability;

2) SC\textsubscript{RC} is primarily a function of parental normative expectations, reinforcement scheduling, surveillance of student role, and attainment plans for child;

3) SC\textsubscript{INT} is primarily a function of parental values, reinforcement scheduling, and attainment aspirations for child.

These anticipated findings, however, are not derived from theoretical considerations in a rigorously logical manner. As with so many
social scientific "theories", conclusions are not derived by rules of logic from clearly articulated assumptions, but through an ordering of empirical observations and unexplicated insights. In this study, while the postulated associations between parental variables and student self-conceptions are made on certain reasonable grounds, a number of questions are raised because the nature of the postulated relationships is only modestly elaborated. Questions, rather than hypotheses, are appropriate at this stage. The major questions addressed in this section of the study are:

1) What parental variables are most highly associated with self-conceptions of academic ability of students?

2) What parental variables are most highly associated with self-conceptions of the instrumental value of the student role?

3) What parental variables are most highly associated with self-conceptions of the intrinsic value of the student role?

These questions will be answered by utilizing the parental variables as predictors of each of the three categories of self-conceptions. Those parental variable having statistically significant beta-weights in relation to student self-conceptions will constitute the relevant parental variables for further analysis in the following sections.

Objective III: to determine if self-conceptions function as intervening variables

The results of the analysis to this point will have pointed out two empirically parsimonious sets of variables: One set of student
variables associated with those student self-conceptions. An investi­
gation of the ordering of these variables will be the subject of
the third portion of the analysis. To assess whether a variable is
functioning as an intervening variable, Rosenberg (1968) suggests
the following procedure. First, the measured associations between
the independent variable and the hypothesized intervening variable
should be stronger than the measured association between the inde­
pendent variable and the dependent variable. Thus, the preliminary
step in testing to see if self-conceptions intervene between parental
variables and student plans involves an assessment of the following
associations:

1) Is the association between parental evaluations and
   student SCA greater than the association between parental
   evaluations and student educational attainment plans?

2) Is the association between the empirically relevant
   set of parental variables and student \( SC_{RC} \) greater than
   the association between that set of parental variables
   and student educational attainment plans?

3) Is the association between the empirically relevant set
   of parental variables and student \( SC_{INT} \) greater than
   the association between that set of parental variables
   and student educational attainment plans?

If these initial conditions are not met in any one of the three
instances, than that particular component of the self-concept
structure cannot be said to intervene between parental variables
and student plans.

The next step in the test for intervening variables is the
assessment of diminished strengths of associations under conditions
appropriate to causal inference according to Tosenberg. That is, af­
after having established the above associations, the next step is to
measure the association between the independent (parental) variables and the dependent variable (student plans). Then the same association between the independent and dependent variables will be measured again, this time while controlling for the influence of the hypothesized intervening variable (student self-conceptions). If the strength of the original association between the independent and dependent variable diminishes when controlling for the hypothesized intervening variable, then that hypothesized intervening variable can be said to intervene between the independent and dependent variables.

This process may be summarized as follows:

Calculate \( r_{12} \)

\[
1 = \text{ParEval} \\
2 = \text{EdP1}
\]

Then calculate this association while controlling on SCA ---

\( r_{12'3} \)

\[
3 = \text{SCA}
\]

If SCA is an intervening variable, then

\( r_{12} > r_{12'3} \)

Thus, Research Hypothesis #6 is

\( H_R : r_{12} > r_{12'3} \)

In Null Form

\( H_0 : r_{12} = r_{12'3} \)
Continuing this procedure, two other research hypotheses are developed:

\[ H_{R7} : r_{42} > r_{42'5} \]

with \( 4 = \) Parental predictors of \( SC_{RC} \)

\( 5 = SC_{RC} \)

In Null Form

\[ H_{06} : r_{42} = r_{42'5} \]

and

\[ H_{R8} : r_{62} > r_{62'7} \]

with \( 6 = \) Parental predictors of \( SC_{INT} \)

\( 7 = SC_{INT} \)

In Null Form

\[ H_{08} : r_{62} = r_{62'7} \]

**Objective #4: the predictive utility of the full theoretical model**

To provide a basis for comparison of this theoretical model with other types of theoretical approaches to the explanation of decision making, it would be helpful to know the efficiency with which the entire conceptual scheme presented here predicts student decision making. Thus, the predictive utility of the entire model will be assessed in this final portion of the analysis. Specifically, the following variables will be placed in a regression equation utilizing educational attainment plans of students as the dependent variable: Those measured components of the self-concept structure which are found in Part I of the analysis to be predictive of student decisions; and those measured parental variables which are found in Part II of the analysis to be predictive of student self-conceptions.
CHAPTER III

FINDINGS

This chapter reports the results of an initial empirical study of the theoretical notions presented in Chapter I. The four major research questions outlined in Chapter I and elaborated in Chapter II serve as the basis for organizing the presentations of these findings.

Self-Characterizations as Predictors of Plans

As noted earlier, multiple regression analysis was chosen as the analytic tool to assess the predictive utility of measured self-conceptualizations. More specifically, a series of multiple regression equations were calculated using the components of the model of self-conceptualizations as predictors of educational attainment plans (EdPl). The obtained multiple R's were then compared to see if the variables which were added to the regression equations significantly increased the ability to predict student plans.

Self-concept of academic ability

Because of the theoretical and empirically established validity of self-concept of ability (SCA), this variable was chosen to comprise the initial restricted regression model. That is, the explained variance obtained when using self-concept of ability
constitutes the criterion against which the other components of the model can be assessed. Since this initial regression model is not multivariate, i.e., there is only one predictor variable, the Pearson product-moment correlation is the appropriate statistic.\(^1\) The measured association between self-concept of academic ability and educational attainment plans is .29. SCA, then, accounts for about 9\% of the variance in the educational attainment plans of elementary students. Adopting the .05 level of significance, this finding would be unlikely to occur by chance. This explained variance is now the criterion against which the other two components of the model are assessed.

**Self-concept of ability plus instrumental value to self**

When measured self-conceptions of the instrumental value of the student role (SC\(_{RG}\)) are added to measured self-conceptions of ability in a regression equation, the explained variance when predicting educational attainment plans is over 11\%. This increase in the obtained explained variance over that found when using only SCA is statistically significant at the .05 level. The null hypothesis of no difference between the obtained multiple R's (\(H_{01}\)) is therefore

\(^1\)Nunally (1967) argues forcefully and cogently against the traditional position taken by many statisticians that certain statistical measures of association must correspond with certain levels of measurement. Nunally suggests that some information and considerable analytic potential is lost by refusing to utilize interval and ratio level correlational techniques with ordinal data.
rejected. It is tentatively concluded that the data show self-conceptions of the instrumental value of the student role to be significant predictors of role decisions made by elementary students.

### Table 3.1

**SELF-CONCEPT OF ACADEMIC ABILITY PLUS SELF-CONCEPT OF INSTRUMENTAL VALUE OF STUDENT ROLE AS PREDICTORS OF EDUCATIONAL ATTAINMENT PLANS**

<table>
<thead>
<tr>
<th>Variables</th>
<th>R</th>
<th>$R^2$</th>
<th>Significance of Difference in Obtained Explained Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCA + SC&lt;sub&gt;RC&lt;/sub&gt;→ EdPl</td>
<td>.34</td>
<td>11.4%</td>
<td>*F = 34.9 with df = 2/2068</td>
</tr>
<tr>
<td>SCA→EdPl</td>
<td>.29</td>
<td>8.6%</td>
<td></td>
</tr>
</tbody>
</table>

*Significant of alpha = .05

**Self-concept of ability plus intrinsic value to self**

By using self-concept of academic ability in conjunction with self-concept of intrinsic (SC<sub>INT</sub>) value of the student role as predictors of educational attainment plans, the explained variance is 10.3%. As shown in Table 3.2, the increase in the explained variance obtained when using SCA plus SC<sub>INT</sub> over that using SCA alone is significant at the .05 level. Based on this finding, the null hypothesis of no difference ($H_{02}$) is rejected. Thus, the analysis of the data so far indicate that self-conceptions of the intrinsic value of the student role are predictors of educational attainment plans.
### TABLE 3.2

SELF-CONCEPT OF ACADEMIC ABILITY PLUS SELF-CONCEPT OF INTRINSIC VALUE OF STUDENT ROLE AS PREDICTORS OF EDUCATIONAL ATTAINMENT PLANS

<table>
<thead>
<tr>
<th>Variables</th>
<th>R</th>
<th>R²</th>
<th>Significance of Increased Explained Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCA + SC\textsubscript{INT} → EdP1</td>
<td>.32</td>
<td>10.3%</td>
<td>*F = 19.6 with df = 2/2068</td>
</tr>
<tr>
<td>SCA → EdP1</td>
<td>.29</td>
<td>8.6%</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at alpha = .05

**The full theoretical model of self-concept structure**

Before concluding that all of the components of the model of self-conceptualizations are empirically fruitful, however, further investigation of possible conceptual and empirical redundancy is necessary. To do this, a regression equation employing all three components of the theoretical model of the self-concept structure was compared to both of the previous regression equations which use two components of the model.

When comparing the full theoretical model to a restricted model made of SCA and SC\textsubscript{INT}, the possible redundancy of SC\textsubscript{RC} is assessed. As shown in Table 3.3, the predictive utility of the full model is significantly greater at the .05 level of significance than that of the restricted regression model.
TABLE 3.3

ASSESSING THE POSSIBLE REDUNDANCY OF $SC_{RC}$:
THE FULL THEORETICAL MODEL OF SELF-CONCEPTUALIZATIONS
AS PREDICTORS OF EDUCATIONAL ATTAINMENT PLANS

<table>
<thead>
<tr>
<th>Variables</th>
<th>$R$</th>
<th>$R^2$</th>
<th>Significance of Difference in Obtained Explained Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>$SCA + SC_{INT} \rightarrow EdPl$</td>
<td>.32</td>
<td>10.3%</td>
<td></td>
</tr>
<tr>
<td>$SCA + SC_{INT} + SC_{RC} \rightarrow EdPl$</td>
<td>.36</td>
<td>12.7%</td>
<td>$^*F = 19.1$ with df = 3/2066</td>
</tr>
</tbody>
</table>

*Significant of alpha = .05

To assess the possible redundancy of self-conceptions of the intrinsic value of the student role, the full model was compared to a restricted model made up of $SCA$ plus $SC_{RC}$. Table 3.4 shows the results of these two regression equations. The findings shown in Table 3.3 and 3.4 indicate that all three components of the theoretical model of the self-concept structure contribute both independently and additively to the prediction of elementary students' educational attainment plans. Thus, the third and fourth null hypotheses are rejected; the analysis of the data to this point lends support for the validity of the theoretical model of the self-concept structure.
TABLE 3.4

ASSESSING THE POSSIBLE REDUNDANCY OF SC\textsubscript{INT}: THE FULL THEORETICAL MODEL OF SELF-CONCEPTUALIZATIONS AS PREDICTORS OF EDUCATIONAL ATTAINMENT PLANS

<table>
<thead>
<tr>
<th>Variables</th>
<th>R</th>
<th>R\textsuperscript{2}</th>
<th>Significance of Difference in Obtained Explained Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCA + SC\textsubscript{RC}→EdPl</td>
<td>.34</td>
<td>11.4%</td>
<td></td>
</tr>
<tr>
<td>SCA + SC\textsubscript{RC} + SC\textsubscript{INT}→EdPl</td>
<td>.36</td>
<td>12.7%</td>
<td>*F = 10.3 with df = 3/2066</td>
</tr>
</tbody>
</table>

*Significant at alpha = .05

Interaction effects within model

In addition to the independent and additive effects of the components of the model of the self-concept structure, the interactive effects among these variables were also investigated. To study the possible interactions among the three components of the self-concept structure, dummy variable analysis was employed (see p. ff.). Each of the three measurements of the components of the self-concept structure were dichotomized according to the results of Automatic Interaction Detection Analysis. These dichotomous variables assumed a value of "0" or "1" (low and high, respectively). Interaction terms were then constructed by multiplying the values of the relevant variables. After being constructed, interaction terms were treated just like any other variable when carrying out analytic procedures.

When collapsing predictor variables from a scale score into a
dichotomous variable, variability in the predictor variables is obviously lessened. Therefore, the explained variance obtained through dummy variable analysis may be artifically suppressed, relative to that gained from using the original scale values. However, the major concern when investigating interaction effects is with the relative contribution of the interaction terms. That is, the multiple $R$ obtained from a full model including interaction terms can be compared with a restricted model employing only the dichotomized variables without interaction terms. In addition, beta weights calculated from interaction terms and the original dichotomized variables can also be compared.

The first regression equation calculated in this part of the analysis employed the three components of the theoretical model of self-conceptions as predictors of educational attainment plans. All three predictor variables were dichotomized according to AID analysis. As can be seen in Table 3.5, the multiple $R$ obtained when employing all three self-concept variables is .25. The multiple $R$ obtained when employing all three self-concept variables plus the four interaction terms is .27. As shown in Table 3.5, this increase in the explained variance is statistically significant at the .05 level. Thus, the null hypothesis of no difference is rejected. As a set of variables, then, the interaction terms formed from the three components of the model of the self-concept structure are significant predictors of educational attainment plans made by elementary students. This finding supports the contention that
cognitive theories of self should avoid a static model of the human self, since the interactions among self-conceptualizations are themselves significantly associated with student plans over and above the independent and additive associations.

### TABLE 3.5

INTERACTION TERMS AS PREDICTORS OF EDUCATIONAL ATTAINMENT PLANS

<table>
<thead>
<tr>
<th>Variables (dichotomized)</th>
<th>R</th>
<th>$R^2$</th>
<th>Significance of Difference in R</th>
</tr>
</thead>
<tbody>
<tr>
<td>$SCA + SCR C + SCLNT \rightarrow EdPl$</td>
<td>.25</td>
<td>6.5%</td>
<td></td>
</tr>
<tr>
<td>$SCA + SCCR C + SCLNT + SCCCINT + SCHA \times SCCR C + SCHA \times SCLNT \times SCLNT \times SCDP$</td>
<td>.27</td>
<td>7.5%</td>
<td>*$F = 3.5$ with df = 7/2061</td>
</tr>
</tbody>
</table>

*Significant at alpha = .05

Further support for this dynamic picture of self-conceptualizations is found when the regression coefficients calculated for the interaction terms are considered. Table 3.6 represents a summary of all the regression equations calculated in assessing the predictive utility of the model of the self-concept structure. Section F of that table presents the beta weights about to be discussed. All seven of the variables in this regression equation (three components of self-concept structure plus four interaction terms) had beta weights...
## TABLE 3.6

RESULTS OF MULTIPLE REGRESSION ANALYSES OF THE PREDICTIVE UTILITY OF THE COMPONENTS OF THE MODEL OF SELF-CONCEPTUALIZATIONS

<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>Beta Coefficients</th>
<th>Regression Constant</th>
<th>Multiple R</th>
<th>Explained Variance (R²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) SCA→EdPl</td>
<td></td>
<td>3.92</td>
<td>.29</td>
<td>8.6%</td>
</tr>
<tr>
<td>(B) SCA + SC&lt;sub&gt;RC&lt;/sub&gt;→EdPl</td>
<td>b&lt;sub&gt;SCA&lt;/sub&gt; = .09</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b&lt;sub&gt;SC&lt;sub&gt;RC&lt;/sub&gt;₁&lt;/sub&gt; = -.09</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b&lt;sub&gt;SC&lt;sub&gt;RC&lt;/sub&gt;₂&lt;/sub&gt; = .25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b&lt;sub&gt;SC&lt;sub&gt;RC&lt;/sub&gt;₃&lt;/sub&gt; = .18</td>
<td></td>
<td>4.41</td>
<td>11.4%</td>
</tr>
<tr>
<td></td>
<td>b&lt;sub&gt;SC&lt;sub&gt;RC&lt;/sub&gt;₄&lt;/sub&gt; = .18</td>
<td></td>
<td>.34</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b&lt;sub&gt;SC&lt;sub&gt;RC&lt;/sub&gt;₅&lt;/sub&gt; = .15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(C) SCA + SC&lt;sub&gt;INT&lt;/sub&gt;→EdPl</td>
<td>b&lt;sub&gt;SCA&lt;/sub&gt; = .09</td>
<td></td>
<td>4.20</td>
<td>10.3%</td>
</tr>
<tr>
<td></td>
<td>b&lt;sub&gt;SC&lt;sub&gt;INT&lt;/sub&gt;&lt;/sub&gt; = .18</td>
<td></td>
<td>.32</td>
<td></td>
</tr>
<tr>
<td>(D) SCA + SC&lt;sub&gt;RC&lt;/sub&gt;ᵺ + SC&lt;sub&gt;INT&lt;/sub&gt;→EdPl</td>
<td>b&lt;sub&gt;SCA&lt;/sub&gt; = .09</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b&lt;sub&gt;SC&lt;sub&gt;RC&lt;/sub&gt;₁&lt;/sub&gt; = -.10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b&lt;sub&gt;SC&lt;sub&gt;RC&lt;/sub&gt;₂&lt;/sub&gt; = .23</td>
<td></td>
<td>4.47</td>
<td>12.7%</td>
</tr>
<tr>
<td></td>
<td>b&lt;sub&gt;SC&lt;sub&gt;RC&lt;/sub&gt;₃&lt;/sub&gt; = .02</td>
<td></td>
<td>.36</td>
<td></td>
</tr>
</tbody>
</table>
TABLE 3.6 (Continued)

<table>
<thead>
<tr>
<th>$b_{SC_{RC_4}}$</th>
<th>= .18</th>
</tr>
</thead>
</table>

**Dummy Variable Analysis (dichotomized variables)**

(E) $SCA + SC_{RC} + SC_{INT}$ \(\rightarrow EdP1\)

| $b_{SCA}$ | = .35 |
| $b_{SC_{RC}}$ | = .56 |
| $b_{SC_{INT}}$ | = .43 |

(F) $SCA + SC_{RC} + SC_{INT}$ + $SC_{RC} \cdot SC_{INT}$ + $SCA \cdot SC_{RC}$ + $SCA \cdot SC_{INT}$ \(\rightarrow EdP1\)

| $b_{SCA}$ | = 1.9 |
| $b_{SC_{RC}}$ | = 1.08 |
| $b_{SC_{INT}}$ | = .90 |
| $b_{SC_{RC} \cdot SC_{INT}}$ | = -.61 |
| $b_{SCA \cdot SC_{RC}}$ | = -1.75 |
| $b_{SCA \cdot SC_{INT}}$ | = 2.12 |
| $b_{SC_{RC} \cdot SC_{INT}}$ | = 2.36 |

(*5 indicators)
which were statistically significant at the .05 level (see Appendix C). Not only do the interaction terms as a group significantly add to the prediction of student plans, but each interaction term is significantly associated with educational attainment plans, even when the effects of all other variables are controlled.

Two findings of this study, then, support the notion that self-conceptions should not be viewed as static or monolithic phenomena. First, knowledge of the interaction among various self-conceptions provide significantly greater efficiency in predicting student plans than does knowledge of those self-conceptions alone. In addition, beta weights for each of the four possible interactions among the three components of the self-concept structure were significantly associated with student plans even with the effects of all other predictors variables simultaneously controlled.

Another finding with implications for both theory and practice again concerns the beta coefficients calculated for the interaction terms. Each of the dichotomized components of the model of self-concept structure have positive beta weights, that is, are directly related to students' educational attainment plans. In other words, the data show that as each of the three components of the self-concept structure become higher, so also do the educational attainment plans of students. The interaction term representing the simultaneous interaction of all three categories of self-conceptions also is positively related to student plans. However, the other three interaction terms, which represent all possible combinations of
any two of the three categories of self-conceptions, are all negatively associated with student plans (see Table 3.6, Section F). This somewhat surprising finding leads to the speculation that each of the three components of the self-concept structure might function as necessary but not sufficient conditions for the emergence of certain types of plans. While this research has not been explicitly concerned with causal linkages, this particular finding has theoretical and practical implications for assumptions of cause which will be discussed in the next chapter.

Parental Variables as Predictors of Student Self-Conceptions

This second portion of the analysis was directed toward ascertaining which of a set of selected parental behaviors and beliefs are most highly predictive of student self-conceptions. As a result of parental interviews, information was gained concerning the following variables:

1) evaluations of child's student role performance;
2) normative expectations for child's educational attainment;
3) normative expectations for child's educational achievement;
4) importance which parents attach to child's getting "B's or better";
5) parental surveillance of child in student role;
6) parental value orientations toward education;
7) reactions to good report cards;
8) reactions to poor report cards;
9) educational attainment plans for child; and
10) educational attainment aspirations for child.

These variables were placed in three regression equations as independent variables predicting, in turn, self-conceptions of academic ability, self-conceptions of the instrumental value of the student.
role, and self-conceptions of the intrinsic value of the student role.

**Self-conceptions of ability**

There is considerable literature which has consistently shown that parental evaluations are highly associated with self-conceptions of ability, and are more highly associated with SCA than such variables as normative expectations as traditionally measured, socio-economic status level, and measured intelligence. As shown in Table 3.7, the theoretical proposition that SCA is a function of the perceived evaluations of significant others is again supported by the present data. Of all ten parental variables assessed in this study, only evaluations were significantly associated at the .05 level with students' SCA. The Pearson product-moment correlation coefficient representing the association between actual parental evaluations and student self-conceptions of ability is .25.

**TABLE 3.7**

RESULTS OF REGRESSION EQUATION UTILIZING PARENTAL VARIABLES AS PREDICTORS OF SCA

<table>
<thead>
<tr>
<th>Beta Coefficients for Predictor Variables</th>
<th>Regression Constant</th>
<th>Multiple R</th>
<th>Explained Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>bEval = .31*</td>
<td>19.3</td>
<td>.34</td>
<td>11.6%</td>
</tr>
<tr>
<td>bAttExp = .09</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bAchExp = .40</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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TABLE 3.7 (Cont.)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>$b_{ImpGr}$</td>
<td>-.36</td>
</tr>
<tr>
<td>$b_{Surv}$</td>
<td>.11</td>
</tr>
<tr>
<td>$b_{VOE}$</td>
<td>.11</td>
</tr>
<tr>
<td>$b_{AttPl}$</td>
<td>-.07</td>
</tr>
<tr>
<td>$b_{AttAsp}$</td>
<td>-.05</td>
</tr>
<tr>
<td>$b_{PRGRC}$</td>
<td>.86</td>
</tr>
<tr>
<td>$b_{PRPRC}$</td>
<td>.87</td>
</tr>
</tbody>
</table>

*Significant at alpha = .05 (T = 1.9)

Self-conceptions of instrumental value

Table 3.8 shows the results of the regression equation utilizing all of the above parental variables as predictors of student self-conceptions of the instrumental value of the student role. Again, the measure of this component of the self-concept structure, when this variable is treated as a dependent variable, was chosen to be "If I do well in school, it will be easier for me to get the job I want when I graduate." As can be seen in Table 3.8, the only parental variables which approach statistical significance at the .05 level are parental value orientation toward education and reported contingencies placed on poor report cards.

These findings indicate that the measured variables do not account for a great deal of the variance in student self-conceptions of the instrumental value of the student role (6.8%). The data do show, however, that those parents who themselves value education in
TABLE 3.8
RESULTS OF REGRESSION EQUATION UTILIZING PARENTAL VARIABLES AS PREDICTORS OF SC\textsubscript{RC}

<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>Regression Constant</th>
<th>Multiple R</th>
<th>Explained Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>(b_{\text{Eval}}) = .001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b_{\text{AttExp}}) = .02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b_{\text{AchExp}}) = .02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b_{\text{ImpGr}}) = .002</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b_{\text{Surv}}) = .05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b_{\text{VOE}}) = .17*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b_{\text{AttPl}}) = .01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b_{\text{AttAsp}}) = .02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b_{\text{PRGRC}}) = .003</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b_{\text{PRPRC}}) = -.25**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at alpha = .10 (t = 1.21)
**Significant at alpha = .15 (t = 1.98)

and of itself, rather than as a means to other ends, and those parents who overtly punish their child's poor academic performance, rather than being verbally supportive, tend to have children who indicate high self-conceptions of the instrumental value of the student role.

Self-conceptions of intrinsic value
TABLE 3.9
RESULTS OF REGRESSION EQUATION UTILIZING PARENTAL VARIABLES AS PREDICTORS OF SCINT

<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>Beta Coefficients</th>
<th>Regression Constant</th>
<th>Multiple R</th>
<th>Explained Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eval</td>
<td>$b_{Eval} = .02$</td>
<td>2.59</td>
<td>.35</td>
<td>12.3%</td>
</tr>
<tr>
<td>AttExp</td>
<td>$b_{AttExp} = .02$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AchExp</td>
<td>$b_{AchExp} = -.04$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ImpGr</td>
<td>$b_{ImpGr} = -.003$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surv</td>
<td>$b_{Surv} = .07$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOE</td>
<td>$b_{VOE} = .23^*$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AttPl</td>
<td>$b_{AttPl} = -.03$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AttAsp</td>
<td>$b_{AttAsp} = .11^{**}$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRGRC</td>
<td>$b_{PRGRC} = -.17$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRPRC</td>
<td>$b_{PRPRC} = .30^{***}$</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at alpha = .10 (t = 1.47)
**Significant at alpha = .10 (t = 1.52)
***Significant at alpha = .05 (t = 2.17)

When again using the set of parental variables as predictors of self-conceptions of the intrinsic value of the student role, the multiple R obtained through multiple regression analysis was .35. The parental variables having statistically significant beta weights at the .05 level were parental value orientation toward education, reported contingencies placed on child's poor school work, and parental educational attainment aspirations for child. As shown in
Table 3.9, when parents value education as being good in and of itself, and when they hold high attainment desires for their children, elementary students have higher self-conceptions of the intrinsic value of being a student. In addition, when parents reported that they overtly punished their child when he or she brought home a poor report card, rather than being supportive, students had significantly higher self-conceptions of the intrinsic value of the student role.

It is noteworthy that the first two of these parental variables (i.e., parental value orientation toward education and behavioral sanctions applied to child's poor academic performance) were also significant predictors of student self-conceptions of the instrumental value of the student role. While one might conclude that these variables are conceptually and empirically redundant, such a conclusion is not warranted given the low intercorrelation \((r = .09)\) between the measures of intrinsic and instrumental self-conceptions. Interestingly, similar parental variables are associated with two distinctly different components of the self-concept structure. The implications of this finding will be more fully discussed in Chapter IV.

Self-Conceptions as Intervening Variables

The third portion of the analysis was aimed at ascertaining whether self-conceptions intervene between parental variables and student plans. Following Rosenberg (1968), the first step in this procedure is to compare the strength of the association between the
independent variable and the hypothesized intervening variable with the strength of the association between the independent and dependent variable (see p. 62 ff.). Table 3.10 shows the measured associations among the variables.

As can be seen from Table 3.10, in each of the three cases, the associations between parental variables and student self-conceptions are stronger than the associations between parental variables and student plans. The initial conditions for the investigation of

TABLE 3.10
ASSOCIATIONS BETWEEN PARENTAL VARIABLES AND STUDENT PLANS, AND BETWEEN PARENTAL VARIABLES AND STUDENT SELF-CONCEPTIONS

<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>Dependent Variable</th>
<th>(Multiple) R</th>
<th>Significance of Regression Equation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Eval → SCA</td>
<td></td>
<td>.25</td>
<td>F = 8.03 &lt; .05, df=1/118</td>
</tr>
<tr>
<td>Eval → EdPl</td>
<td></td>
<td>.16</td>
<td>F = 2.82 &lt; .05, df=1/118</td>
</tr>
<tr>
<td>B) VOE + PRPRC → SC</td>
<td></td>
<td>.22</td>
<td>F = 3.09 &lt; .05, df=2/117</td>
</tr>
<tr>
<td>VOE + PRPRC → EdPl</td>
<td></td>
<td>.17</td>
<td>F = 1.81 &lt; .05, df=2/117</td>
</tr>
<tr>
<td>C) VOE + PRPRC + EdAsp → SC</td>
<td></td>
<td>.32</td>
<td>F = 4.32 &lt; .05, df=3/116</td>
</tr>
<tr>
<td>VOE + PRPRC + EdAsp → EdPl</td>
<td></td>
<td>.19</td>
<td>F = 1.43 &lt; .05, df=3/116</td>
</tr>
</tbody>
</table>

self-conceptions as intervening variables have been met by the present data. Unfortunately, while there are measured associations between certain empirically relevant parental variables and student plans (see Table 3.10), none of these associations are significant.
at the .05 level. In the absence of significant associations between these three sets of parental variables and educational attainment plans, the question of whether or not self-conceptions intervene between parental variables and student plans cannot be answered definitively with the present data. In other words, while the data show that it is plausible that self-conceptions function as intervening variables between parental variables and student decisions it is not possible to conclusively test this hypothesis at this time.

With regard to the alternate model of the ordering of these variables (i.e., the cognitive dissonance model discussed in Chapter I, p. 21), it is important to note that when the present data meet Rosenberg's preconditions for a test of the intervening variable status of self-conceptions, it is not possible for the cognitive dissonance model to also meet these conditions. That is, given that a dominant direction in the strengths of the measured associations among the three variables is a prerequisite for establishing the hypothesized intervening variable as in fact an intervening variable, then the model suggested here and the cognitive dissonance model are incompatible. More specifically, the competing models are:

\[ X_1 \text{ (parental variables)} \rightarrow X_2 \text{ (self-conceptions)} \rightarrow X_3 \text{ (plans)} \quad \text{and} \quad X_1 \text{ (parental variables)} \rightarrow X_3 \text{ (plans)} \rightarrow X_2 \text{ (self-conceptions)} \]

If, as the present data shows, \( r_{X_1X_2} > r_{X_1X_3} \), then the second model is shown to not meet the preconditions for the test of plans as a variable intervening between parental variables and self-conceptions. In summary, the data are more closely in accord with the model...
proposed here than with a dissonance model, even though no definitive test of intervention can be carried out.

The Prediction of Student Plans
Using the Full Theoretical Model

A dynamic model such as the one proposed in this research does not lend itself well to traditional non-recursive causal modeling techniques. The inability to test for intervening variables in other than a very tentative and inconclusive fashion, described in the preceding section, is a circumstance which somewhat impedes attempts to investigate the ordering of the variables in the model. However, the predictive efficiency of the entire model is of interest. This sort of information allows for comparisons of this model with other attempts at theorizing about the effects of parents and self-conceptualizations on the plans of students.

Table 3.11 shows the results of a regression equation employing the three categories of self-characterizations, along with those parental variables which are significant predictors of self-conceptions, as predictors of student educational attainment plans. A multiple R of .55, significant at the .05 level, is obtained from this regression equation. Thus, from knowledge of the variables included in the full model of volitional behavior, student educational attainment plans can be predicted with over 30% accuracy. This represents an increase of more than 17% explained variance in student plans over the explained variance found when using only knowledge of the three components of the self-concept structure to
predict student plans.

<table>
<thead>
<tr>
<th>Beta Coefficients for Predictor Variables</th>
<th>Regression Constant</th>
<th>Multiple R</th>
<th>Explained Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>$b_{Eval}$</td>
<td>= .01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$b_{V0E}$</td>
<td>= .14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$b_{Asp for Child}$</td>
<td>= .11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$b_{PRPRC}$</td>
<td>= .12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$b_{SCA}$</td>
<td>= .14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$b_{SC_{RC-1}}$</td>
<td>= .19</td>
<td>-1.41</td>
<td>.56</td>
</tr>
<tr>
<td>$b_{SC_{RC-2}}$</td>
<td>= .14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$b_{SC_{RC-3}}$</td>
<td>= .23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$b_{SC_{RC-4}}$</td>
<td>= .03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$b_{SC_{RC-5}}$</td>
<td>= .16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$b_{SC_{INT}}$</td>
<td>= .31</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

knowledge of the three components of the self-concept structure to predict student plans.

In addition to allowing for comparisons between the present theoretical model of self-conceptualization and competing models, this finding also is one more aid in understanding the ordering of the
variables in the model. In the previous section of this chapter it was shown that characterizations of self might be intervening variables between certain parental variables and student plans, but that a conclusive test of this hypothesis could not be made at this time. The further findings reported in this section show that certain parental variables combine with self-conceptions to predict student plans with considerably greater accuracy than either those parental variables alone, or self-conceptions alone. Thus, parental variables might be influencing student plans through variables other than, as well as in addition to, self-conceptions. This possibility is more fully discussed in Chapter IV.
CHAPTER IV

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Summary of Theory, Methods, and Findings

Theory

Several hypotheses have been tested in this investigation which are consistent with a theoretical model concerning the development and function of selected self-characterizations which people make as they carry out social roles. This theoretical model is the result of intensive collaboration with Drs. Wilber B. Brookover and Edsel L. Erickson, aimed at further elaboration of their earlier work on self-concept theory.

In summary form, there are three major sets of components in this model which are under study in this research; (1) selected acts of significant others; (2) three different categories of self-conceptions; and (3) linguistic outcome variables. The major processual constructs theorized for analytic purposes are the individual's monitoring of self and others, the functions of valuing and the imaginative completion of the act.

In essence, this theoretical model advances a strategy for taking into account three types (generic categories) of self-characterizations which individuals are likely to make in any given role. The first of these self-concept categories refers to those
conceptualizations or statements individuals use to describe their ability to function in a given role (SCA). The second category of self-characterization refers to those statements people make to indicate the rewards and costs they anticipate as forthcoming given a certain role performance (SC\textsubscript{RC}). The third self-concept category refers to those statements made by individuals in describing the intrinsic value to self of their anticipated performance in a role (SC\textsubscript{INT}).

The major assumptions and propositions about the functioning of the components of the model are:

(1) Self-concept of ability functions as a necessary, but not sufficient, condition for the emergence of plans to carry out a role activity.

(2) Individuals covertly complete the act of role performance and weigh the anticipated sanctions associated with that act. The role under study is thus viewed, in part, as a means to certain consequences.

(3) In addition, the role performance is assumed to carry with it for the individual a definition of self which may be valued positively or negatively. In this fashion, the role may be treated as an end in itself.

(4) Self-concept of ability, the instrumental rewards and costs associated with a role, and the intrinsic value of that role are analytically and conceptually distinct at any given time. Each of the three categories of self-characterization should be considered in terms of their interactions with one another. In other words, it is proposed that the three categories of self-conceptions interact to have unique effects beyond their additive influences.

(5) Based on previous theoretical and empirical work, parents, teachers, and peers are assumed to be significant others in the lives of students, i.e., to influence students characterizations of self. In this research, parents are chosen as the most important significant other for the academic development of children because of con-
siderable research which has shown that parents are very likely to influence their children's self-conceptions within the role of student. It is also assumed that parents are likely to be in a position to control a majority of the rewards and costs associated with their child's student role performance.

In addition to the above assumptions, there is empirical grounds for anticipating that certain parental variables are related to each of the self-concept components of the model. Specifically, one would suspect (1) parental evaluations of the academic ability to be related to $SC_A$, (2) parental normative expectations, dispensations of rewards and punishment, surveillance of academic life of child, and plans for child to be related to $SC_{RC}$, and (3) parental expressed values toward education, dispensation of rewards and punishments, and aspirations for child to be related to $SC_{INT}$. However, given a lack of any rigorously logical grounds for deriving such hypotheses, the possibility of associations between parental variables and self-conceptions are treated as basically exploratory questions which are dealt with in this study.

Briefly stated, then, the objectives of this study were to elaborate a theoretical model of self-characterizations, and to provide an initial empirical test of this model.

**Procedures**

The sample studies in this research included 2,072 elementary students from sixteen schools located throughout Michigan. The data provided by a survey of these students was analyzed in terms of the influence of self-conceptions on student decisions. In order
to investigate parental influences on student self-conceptions, a sub-sample of 120 parents of the elementary students were inter­viewed.

To measure self-conceptions of academic ability, the Michigan State Self-Concept of Ability Scale was modified for administration to elementary students. Items were developed in this study to measure the other two categories of self-conceptions, i.e., self-conceptions of the instrumental value of the student role and self-conceptions of the intrinsic value of the student role (See Appendix A). In measuring the major dependent variable, student educational attainment plans, care was taken to operationally specify the important theoretical distinction between plans (anticipations) and aspirations (desires for the future).

In addition, the following variables, hypothesized as antecedent to characterizations of self, were measured; 1) parents' evaluations of their child's academic ability; 2) and 3) parents' normative expectations for their child in school, in terms of both achievement and attainment; 4) parents' surveillance of their child in school; 5) and 6) parents' reactions to their child's "high" and "low" achievement levels in school; 7) parents' value orientations toward school in general; 8) the importance parents attach to their child's receiving "B's or better" on school work; 9) parents' plans for the educational attainment level of their child; and 10) parents' aspirations for the educational attainment level of their child.

The analysis consisted of four parts. First, the efficiency of
the individual and combined interactive categories of self-conceptions as predictors of educational attainment plans was assessed. Second, the parental variables were investigated as predictors of each of the three types of self-conceptions. Third, an assessment was made as to whether self-conceptions are intervening variables between parental variables and plans. Finally, the utility of parental variables plus self-concept variables as predictors of student plans was calculated.

**Findings**

As theoretically conceptualized, all three components of the self-concept structure were found to be significant predictors of the educational attainment plans of elementary students. The self-conceptions of both the instrumental and intrinsic value of the student role, when individually placed in regression equations with self-conceptions of ability, significantly increased the accuracy of predicting student plans over the predictive level of self-conceptions of ability when used alone. In addition, all three of the categories of self-conceptions, when placed in a regression equation together, resulted in a greater amount of explained variance in student plans then when any given two of the self-concept categories were employed. The multiple correlation coefficient when using all three components of the self-concept structure to predict the educational attainment plans of elementary students was .36.

When investigating the interaction effects among the self-
concept variables all four interaction terms representing the four possible interactions among the three categories of self-conceptions, were found to be statistically significant predictors of student plans. The three interaction terms which represent the interaction of the three possible combinations of any two categories had negative betaweights, while that variable representing the simultaneous interaction of all three components of the model had a positive betaweight. In other words, the present data show that the absence of positive self-conceptions in any one of the three self-concept categories coupled with the presence of positive self-conceptions in the other two areas actually reduces the most accurate prediction of how a student's plans to pursue his or her formal education.

It was also found as theorized that actual parental evaluations were significantly associated with their children's self-conceptions of academic ability. The Pearson product-moment correlation coefficient between parental evaluations and child's SCA was .25.

Concerning the other parental variables, value orientations toward education and reported rewards and costs placed on child's poor school work were the only variables that approached statistical significance as predictors of self-conceptions of the instrumental value of the student role. Interestingly, the students had higher self-conception of the instrumental value of the student role when their parents overtly punished them rather than being "supportive" when their child brought home poor grades. In addition, when
parents valued education in and of itself, rather than as a means to other ends, students' self-conceptions of the instrumental value of the student role were higher. This, too, was a finding not anticipated from the theoretical model. When using parental value orientations and reported rewards and costs placed on child's poor school work to predict $SC_{RC}$, the multiple correlation was .22.

Three parental variables were significant predictors of student self-conceptions of the intrinsic value of student role performance. Parental value orientations toward education, reported rewards and costs placed on poor school work, and parental aspirations for their child's educational attainment were associated with $SC_{INT}$ with a multiple correlation of .32. Similar to the impact on $SC_{RC}$, when parents valued education in and of itself and when parents directly punished their child's poor school work, students had higher self-conceptions of the intrinsic value of the role. Parental Educational attainment aspirations for their child were also positively associated with $SC_{INT}$.

The data in this study are also in accord with the view that self-conceptions intervene between parental variables and student plans. However, no definite assessment could be made to show whether self-conceptions must of necessity intervene between parental values, behaviors, aspirations, and evaluations on the one hand and student plans on the other. The associations between empirically relevant parental variables and student self-conceptions were in all three instances greater than the associations between parental variables and student plans. The measured associations between parental variables
and student plans were so low as to make certain tests for determination of intervening variable status inappropriate between parental variables and student plans. The measured associations between parental variables and student plans were so low as to make certain tests for intervening variables inappropriate.

The final major finding of this study is that parental variables and self-conceptions combine to increase the levels of predicting student plans. When utilizing the full model made of parental evaluation, parental reactions to poor cards, parental value orientations toward education, parental aspirations for child, and the three categories of self-conceptions as predictors of student plans, the multiple correlation coefficient increased to .55. Relating this finding to the question of self-conceptions as intervening variables between parental variables and student plans, it is evident that there might be other variables other than self-conceptions through which parental variables transmit their influence, but it also becomes increasingly evident that self-conceptions might function as intervening variables.

Implications and Discussion

In light of the findings stemming from this study and the problems encountered in this research, the following theoretical implications are drawn.

The dynamic model of the sources and functions of human self-conceptualizations elaborated in this investigation provides social
scientists with a theoretically useful approach to the study of volitional behavior. This conclusion is substantiated by the findings that all three categories of self-conceptions and all possible interaction terms were significant predictors of student plans. Additional confidence can be placed in the validity of this conclusion in light of the relatively new and more rigorous fashion in which interaction effects were assessed in this study. By using Automatic Interaction Detection to construct interaction terms, the ad hoc nature of so many previous tests for interaction was eliminated.

In addition, at least two other factors operated to make this research a relatively stringent test of the model. Like most attempts to provide an initial empirical investigation of theoretical notions, unforeseen findings arose in carrying out this research. One very important finding was that a general summary indicator of self-conceptions could not be utilized. This finding supports the view that employing multiple self-conceptions is more appropriate than using a single global assessment of characterizations of self.

Another consideration of importance when interpreting the findings of this research concerns the conservative nature of statistical estimates used in this study. As noted in Chapter II, the age of the respondents, while eliminating several possible theoretically confounding influences of importance to this study, also very likely suppressed the magnitudes of possible measured associations among the variables of the model. While none of the theoretical considerations presented earlier suggested that the model should not apply to students of elementary school age, the choice of the particular
The major dependent variable for use with young children in this study had important conservative functions for the findings. The plans of students about how long to remain in school are simply not as salient to the lives of elementary school age children as is the case with older students. Likewise, conditions such as familial press for school achievement and demonstrated academic ability, and communicated expressions of concern over the occupational and economic well-being of the child in later life are not as prevalent in the lives of young children as with other students.

These conditions certainly do not invalidate the findings of this research. Indeed, the significant findings reported take on added importance in light of these considerations. Even though the explained variance in the major dependent variable was not great as compared with studies using older students, the findings of this research are clearly in accord with the theoretical scheme employed in this study.

Of particular theoretical relevance are the results of the dummy variable analysis carried out in this study. In interpreting the findings gained from this assessment of interaction effects among the three categories of self-conceptions, it is important to consider the direction, as well as the statistical significance, of the associations between the interaction terms and student plans. To briefly review, the findings show that each of the three components of the self-concept structure are positively related to the educational attainment plans of students. In addition, the inter-
action term reflecting the simultaneous interaction of all three components of the self-concept structure are also positively related to student plans. Yet, the three interaction terms representing any particular two of the three categories of self-conceptions are negatively associated with student plans. Even though the intercorrelations among all independent variables (parental evaluations, value orientations toward education, reinforcement scheduling, aspirations for child, the three categories of student self-conceptions, and the four interaction terms) displayed no negative correlations, negative beta coefficients were calculated for the three "two-member" interaction terms.

One theoretical implication stemming from this finding is that each of the three analytic components of the self-concept structure may function as antecedent conditions which are necessary, but not sufficient for the emergence of certain types of decisions. That is, the absence of conceptions of self as being capable of role performance, or the absence of feeling that oneself is worthy of role performance, or the absence of feeling likely of attaining desired rewards from role performance may lead individuals to decide to not undertake certain role activities. Indeed, the rather large, yet negative beta weights calculated for these three interaction terms, means that the most accurate prediction of elementary students' educational attainment plans is considerably lessened in the absence of "high" self-conceptions in any one of these three categories. In terms of a rigorous causal analysis, if these categories of self-
conceptions function as necessary conditions for the emergence of certain types of decisions, there cannot be any observations of low self-conceptions associated with a decision to attempt high levels of role performance. This is certainly not the case in this research where the strength of the measured associations are only moderate. Yet, the various components of the self-concept structure might function in such a way so that if one category of self-conceptions is low, a rather large increase in other categories of self-conceptions is necessary before certain decisions will be made. That is, perhaps a simple balance or additive combination of self-conceptions which must meet some minimal criterion or threshold level for the emergence of decisions is not an accurate picture of decision making. Perhaps a diminution of self-conceptions in one area must be compensated for by a considerably larger enhancement of self-conceptions in another area before decisions will be made to pursue active role performance. Since this is perhaps one of the most important findings of this study, this theoretical issue deserves further empirical investigation; the next section of this chapter will present a discussion of possible research designs which might be addressed to the further investigation of this issue.

With respect to the associations between parental variables and student self-conceptions, several implications were suggested by this research. First, the findings of this study support both the sociologist who emphasizes the important role of values in human conduct and the behavioral psychologist who stresses the part played
by the reinforcement schedule as being most influential to human behavior. That is, both the values displayed by parents in the family setting and parental dispensation of punishment following a child's poor academic performance were significantly associated with student self-conceptions of both the intrinsic and the instrumental value of the student role, categories of self-conceptions which are each empirically distinct phenomena. It seems evident that among elementary students in this study, there was no necessary transference of a value orientation from one generation to the next in the absence of some means of effectively ingraining that value orientation. Thus, the contributions of both certain cognitive and behavioristic theorists which have been integrated into the theoretical model of volitional behavior, are supported in this study.

It is also important to note that parental administration of costs consequent to a child's poor academic performance were associated with student self-conceptions of the instrumental value of the role. This is not to suggest that this research shows punishment to be a more effective means of control; rather than punishments, more than rewards, are salient to the children in this study and these punishments are reflected in their cognitive make up. This finding might serve to explicate Skinnerian notions that punishing contingencies shape behavior faster than do rewards, even though rates of behavior shaped through punishment are usually less stable over time. Parental punishment seems to be more readily monitored by elementary students than parental rewards. Whatever the case, the self-conceptions of elementary students were associated with parent's negative
sanctions, while reported positive reinforcements administered by parents were not significantly associated with either instrumental or intrinsic values, placed by students on their academic roles.

It was not surprising that parental attainment aspirations for child and what has been termed here an idealistic value orientation toward education on the part of parents were associated with student self-conceptions of the intrinsic value of the role. Parents evidently communicate to their child what they define as important and what they desire for their child. The child seemingly internalizes certain of these beliefs and develops certain conceptions of self-worth attached to being a student.

If parents communicate their desires for their child to that child, it is reasonable to expect that parents will also communicate to their offspring their anticipations for this child's future. Since the data show that student role based in part upon their parent's desires, one might also expect parental plans to be associated with their child's self-conceptions of the instrumental value of the student role. However, while this was anticipated, the data did not reflect this result. Rather, parental plans for child were not significantly associated with instrumental values of students for the student role. Again the age of the subjects may be relevant. Perhaps parents do not accurately communicate to their elementary school age child what they consider to be realities considerably more troublesome than their desires for child. In addition, perhaps students in the fourth, fifth, and sixth grades do
not concern themselves with monitoring parental communications about circumstances six to ten years in the future.

With regard to the ordering of the variables in this research, it has been the theoretical position of this study that self-conceptions intervene between parental variables and student plans. This way of viewing self-conceptions has as its aim the enhancement of the predictive abilities of social scientists and educators, rather than the exclusive aim of developing theories which provide a perfect mirror for elusive social reality. As such, proposing that self-conceptions intervene prior to plans, contradicts the position of cognitive dissonance theorists who view attitudes about self as being shaped by prior decisions. The data analyzed in this study provides tentative support, for the interactionists claims that self-conceptions do function as intervening variables. The analysis, however, was far from conclusive; considerable research efforts need to be directed toward the study of this question.

Along with theoretical implications, this study also may be interpreted in terms of its relevance for educational practice. While not designed primarily as "action research", a brief discussion of what many would view as the more practical implications of this study are in order. In terms of educational practice, the results of dummy variable analysis of interaction effects noted earlier suggest that educators should strenuously avoid overemphasizing certain aspects of a student's belief system about self while underemphasizing others. It would appear that merely convincing a
child that he is capable, or that learning is intrinsically worthwhile, or that there are certain rewards to be gained from being a good student is not maximally efficient for encouraging children to further their formal education. Indeed, even accomplishing two of these three difficult tasks is apparently not only educationally insufficient, but even may be self-defeating. That is, the data show that if any two of the three components of the self-concept structure are "high" while the third is "low", students in fact tend to have low educational attainment plans. To the extent, then, that certain fads and fashions in the academic community surrounding educational practice tend to emphasize one particular teaching strategy as the key to success, the possibility is increased that educators will overlook extremely important factors in their attempts to motivate students to learn. Whether the emphasis is on student self-actualization, programmed learning, or self-concept of ability enhancement, that very emphasis might reflect a crucial neglect of other areas of educational importance.

In connection with this topic of educational practice, the theory and research reported here have more than tangential relevance for the notions of some of the more prominent contemporary radical critics of education that the school as in institution establishes within its boundaries patterns of norms and behaviors which unnecessarily remove the joy from learning. Paraphrased in the terminology of this research, authors like Friedenberg, Goodman, and Illich feel that schools pay far too little attention to the intrinsic value of
learning and create an atmosphere in which far too much emphasis is placed on instrumental considerations.

As noted in Chapter I, some critics of education apply a primarily institutional perspective in their analyses; they are concerned with patterns of institutional development, and with the place of the school in the context of the wider society. Yet, as emphasized earlier in Chapter I, there are profound and basic social psychological aspects to their work as well (see p. 3). Friedenberg (1967), for example, is concerned with power relationships within the school setting, and explores the ramifications of the lack of power embued in the student role. He finds that the lack of "vitality" which is part of the student role tends to structure the school situation such that motivation to learn becomes highly dependent upon a reward system. Illich (1970) links the capitalist economic system to educational practice, and berates American schools for implicitly emphasizing an ethic of consumerism. He condemns the process where subject matter is divided into courses which can "be consumed" in succeeding semesters; a series of semesters lead in lock-step fashion to a diploma representing a series of hurdles which have been surmounted, regardless of the amount of intellectual or creative growth which has occurred.

The present research can be viewed, at one level, as a social psychological study of some of the factors of concern to these radical analysts. The present empirical study offers little in the way of testing the notions of these writers. However, the impli-
cation expressed earlier than all aspects of a child's self-belief system require attention in the classroom has relevance for radical critics as well as classroom teachers. In terms of an evaluation of the ideas of these radical thinkers, the major contribution stemming from the theoretical notions elaborated in this research are yet to be undertaken. Yet, this theoretical framework offers considerable opportunity to empirically assess some of the notions of radical critics of education as well as the status quo of learning theory and educational practice.

Suggestions for Further Research

In attempting to comprehend the complexity of human voluntary behavior, this research has provided theoretical and empirical grounds upon which to build further studies. On the basis of findings in this study, emphasis should be placed upon refining the measurements of self-conceptions of the instrumental value of the role and self-conceptions of the intrinsic value of the role. In particular, multi-item scales of self-conceptions of the instrumental and intrinsic values of the role should be developed. By building upon the instruments employed in this initial study, efforts can be directed toward insuring the reliability of measurements techniques; that is of extreme importance in that predictive validity is a function of reliability. A variety of strategies are available in attempting to develop measures of this type. One tactic which might prove fruitful would be to conduct an unstructured depth interview.
study of students. By sampling students of various ages, races, socio-economic status levels, achievement levels, and other relevant characteristics, those instrumental contingencies which students take into account in making role decisions might be delineated, as well as those aspects of student life considered by students to be intrinsically worthwhile.

The findings of this study also provide a basis for moving ahead to provide not only a logical, but a temporal ordering of the variables in the model. The present study was unable to draw definitive conclusions about self-conceptions as variables intervening between the behavior of others and the plans of students. Because of the symmetry involved in all cross sectional studies, further research should be of a longitudinal nature to allow more definitive conclusions as to whether self-conceptions are intervening variables.

Longitudinal data would also allow the analyst to use path analytic causal modeling techniques wherein assumptions are made about the temporal ordering of variables. Only when longitudinal research designs allow the analyst to make such assumptions about the temporal ordering of variables, can path analysis be applied to models wherein some of the variables are theoretically linked by "feedback loops". Within the present theoretical model, for example, parents could hypothetically monitor high student achievement at one point in time, thus altering parental evaluations of child's academic ability at a second point in time, in turn modifying the
child's self-concept of academic ability at a still later time. Sequential data on the same subjects allows for assumptions that student achievement at time-three cannot be mistakenly said to directly influence parental evaluations made at time-one, or self-conceptions of academic ability at time-two. In other words, within the context of survey research, the problem of recursiveness, i.e., the feedback relationships among the variables can be surmounted with longitudinal data.

Unfortunately, causal modeling techniques could not be addressed to the more dynamic aspects of the theoretical model employed in this study. That is, path analysis would only be appropriate in assessing the "primary", i.e., the independent and additive influences of self-conceptions, and is not appropriate for dealing with interaction effects. However, in this study dummy variable analysis used in conjunction with Automatic Interaction Detection did provide a powerful analytic tool in the assessment of interaction effects. Replications of this type of analysis are in order.

Turning to the topic of possible antecedent conditions for the emergence of self-conceptions, more precise knowledge than was gained from this study about how the three categories of self-conceptions can be enhanced should be the goal of future research. Considerable evidence has already indicated the importance of parental evaluations in relation to self-conceptions of ability (Brookover, et. al., 1965; Brookover et. al., 1967; the present study). Further theoretical and empirical work should now build
upon the present study in extending an awareness of strategies for developing positive school related values. In addition to the family setting, structural conditions of the school should not be overlooked as explanatory variables in accounting for student values toward their academic life. Institutionalized power relations affecting the lives of students, curriculum characteristics and even such variables as class size and school size should be viewed in relation to student self-conceptions of instrumental and intrinsic values of the student role.

With regard to the manner in which self-conceptions function in the cognitive make-up of individuals, the findings of this study suggest that the three components of the self-concept structure may each function as necessary, but not sufficient conditions for the emergence of certain levels of plans. In light of this finding, which is consistent with Brookover's (1967) earlier theoretical propositions about self-conceptions of ability, the relative contributions made by each of the three categories of self-conceptions should be the subject of future research. Given that some verified information as to how various self-conceptions can be enhanced, experimental designs could be developed which assess the manner in which the three categories of self-conceptions are related to academic outcomes.

More specifically, a series of Solomon four-group designs (Campbell and Stanley, 1963) could be utilized in which the function of each component of the model of the self-concept structure could
be assessed. This research design would require the identification of three populations of students who have "low" self-conceptions in one category of the theoretical model of the self-concept structure, and "high" self-conceptions in the other two categories. Thus, three populations characterized by the following configurations of self-conceptions would be identified:

<table>
<thead>
<tr>
<th></th>
<th>SCA</th>
<th>S\textsubscript{RC}</th>
<th>S\textsubscript{INT}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population #1</td>
<td>high</td>
<td>low</td>
<td>high</td>
</tr>
<tr>
<td>Population #2</td>
<td>low</td>
<td>high</td>
<td>high</td>
</tr>
<tr>
<td>Population #3</td>
<td>high</td>
<td>high</td>
<td>low</td>
</tr>
</tbody>
</table>

After having identified these populations, experiments could be developed which assess the effects of enhancing the "low" self-conceptions in each instance. The Solomon four-group design, which has widely reorganized external validity (generalizability), calls for the following experimental groups:

\[
\begin{array}{cccc}
R & 0_1 & X & 0_2 \\
R & 0_3 & 0_4 \\
R & X & 0_5 \\
R & 0_6 \\
\end{array}
\]

with

- R = Randomized assignments of subjects to experimental groups
- 0 = Observation or measurement of dependent variable
- X = Treatment

In the case of the presently proposed experiment, the dependent variable could be education attainment plans (or any other theoretically relevant variable), and X would be whatever strategy for self-concept enhancement that theoretical and empirical developments suggest. The Solomon four-group design incorporates the following
predictions resulting from experimental intervention:

\[ 0_2 > 0_1, \quad 0_2 > 0_4, \quad 0_5 > 0_4, \quad 0_5 > 0_3. \]

This experimental procedure, when carried out with subjects from each of the three populations delineated earlier, would be designed to yield valid and generalizable information about the function fulfilled by each of the three categories of self-conceptions.

This design can be clarified by presenting a hypothetical example. One experimental group would be made up of students with high self-conceptions of ability in the role and high self-conceptions of the intrinsic value of the role, but low self-conceptions of the instrumental value of the role (Population #1 from previous page). If previous research had shown that, for instance, increased surveillance of role behaviors by significant others coupled with maximization of the pay-off for role performance is an effective technique for enhancing self-conceptions of the instrumental value of the role, then this procedure would constitute the treatment for this experimental group. By comparing measurements of the dependent variable in the fashion suggested by the Solomon four-group design, conclusions could be drawn concerning how self-conceptions of the instrumental value of the role function in relation to the dependent variable.

Turning to the source of student self-conceptions, further research should investigate the specific function which parental values fulfill in the development of students' self-conceptions. That is, future research should also investigate the effects of the
intensity or the degree to which parents value education. It is plausible that the pay-off for elementary students "good" school behavior is based on the degree to which parents value formal schooling, rather than parental expressions of a rational (i.e., expressed value orientation) by which they support their attitudes toward formal education. The occurrence of a given value orientation toward education held by a significant other and a given degree of intensity with which that value orientation is held might affect the decisions made by a student, over and above the effects of the given value orientation alone. Children whose parents believe very strongly that schools should enable their children to get along with other people might have very different conceptions of self than do children whose parents only mildly value formal schooling, even though these two sets of parents value education for similar reasons. Future studies should focus on this condition of the degree to which significant others value the institutional context in which role performance occurs.

Within the school setting, other studies could be designed utilizing the theory of self-conceptions employed here. Linguistic outcome variables other than plans could be utilized as dependent variables, i.e., attainment aspirations, achievement aspirations, or achievement plans. In addition, the model as developed in Chapter I takes into account significant others of students in addition to parents, namely teachers and friends. Future studies should also explore the influence of these other significant others, and assess
their comparative influence upon student self-conceptions.

Other roles within the school could also be studied. The roles of teacher and principal would seem to lend themselves well to such research; studies of teacher self-conceptions of ability and teacher dropout have already been reported.

In connection with these types of studies, students are seldom viewed as significant others to their teachers. Symbolic interactionist theory as well as various perspectives on role theory would indicate that studies of students as significant others within the school setting are in order.

Future studies of the model elaborated here should also be carried out in institutional settings other than the school, and deal with roles other than that of student. Sociologists of the family could utilize this general theoretical model in studying roles within the family. In light of the apparently pervasive changes in the structure of the family which have occurred and are presently continuing, studies of the impact of these changes on the self-conceptions of family members might prove to be of valuable theoretical and empirical utility to students of the family.

The sociology of work and industrial sociology could also profit from studies applying the theory elaborated in this research to various vocational roles. Investigations into job satisfaction, interpersonal relations within industry, and the social psychology of formal organizations could utilize this theoretical perspective in studies of both blue collar and white collar vocational roles.
In an area not unrelated to industrial sociology, political sociologist Ralf Dahrendorf (1959), in building on the work of Marx in the area of class conflict and social change, has called for social psychological studies of the process of conflict group formation. Within this context, the theory supporting the present study could be utilized in investigating self-conceptions in relation to decisions and plans concerning group formation and collective action.

In the area of deviance, application of self-concept theory to the labelling process has been implicit or explicit in the work of prominent labelling theorists (Lemert, 1967; K. Erikson, 1966; Schef, 1966; Becker, 1967; Goffman, 1959; 1961). The elaboration of self-concept theory provided in this study could be applied to studies of the labelling process and the development of deviant careers. Goffman's (1961), work in the area of mental health reflects an understanding of the subtle, and sometimes not so subtle, labelling mechanisms as they influence self-conceptions. His theoretical notions and empirical data might provide an excellent point of departure for applying the present theoretical scheme for the general topic of labelling theory.

In closing, it is suggested that the general theoretical formulations underlying this study comprise a fruitful approach to the study of human self-conceptualizations. While a great amount of theoretical and empirical work remains to be undertaken to clarify several issues, the theory employed in this study has considerable potential in terms of both its contributions to social scientific
theory and its pragmatic applications to the everyday world of humans living with one another.
APPENDIX A

MEASUREMENT OF STUDENT VARIABLES
EDUCATIONAL ATTAINMENT PLANS

1. Sometimes what we want to happen in the future is not the same as what we really think will happen. How far do you think you will go in school?
SELF-CONCEPT OF ABILITY

1. Think of your friends. Do you think you can do school work better, the same, or poorer than your friends?
   1. Better
   2. The same
   3. Poorer

2. Think of the students in your class. Do you think you can do school work better, the same, or poorer than the students in your class?
   1. Better
   2. The same
   3. Poorer

3. When you finish high school, do you think you will be one of the best students, about the same as most of the students, or below most of the students?
   1. One of the best
   2. About the same as most of the students
   3. Below most of the students

4. Do you think you could finish college?
   1. Yes
   2. Maybe
   3. No

5. If you went to college, do you think you would be one of the best students, about the same as most of the students, or below most of the students?
   1. One of the best
   2. About the same as most of the students
   3. Below most of the students

6. If you want to be a doctor or a teacher, you need more than 4 years of college. Do you think you could do that?
   1. Yes
   2. Maybe
   3. No
7. Forget how your teachers mark your work. How good do you think your own work is?

1. Excellent  
2. Good  
3. About the same as most of the students  
4. Below most of the students  
5. Poor

8. What marks do you think you really can get if you try?

1. A's and B's  
2. B's and C's  
3. D's and E's
SELF-CONCEPT OF THE INSTRUMENTAL VALUE OF THE STUDENT ROLE

1. When I do a good job on my school work, I am more popular with other students.
   1. No
   2. Doesn't matter
   3. Yes

2. If I do well in school, it will be easier for me to get the job I want when I graduate
   1. No
   2. Doesn't matter
   3. Yes

3. My parents allow me greater freedom when I do well in school.
   1. No
   2. Doesn't matter
   3. Yes

4. If you came home with a good report card, what would your parents most likely do?
   1. Nothing in particular
   2. Praise me
   3. Give me special privileges
   4. Give me money or some special reward
   5. Other ______________________________________________________________
      (no responses were recorded for the fifth response category)

5. If you came home with a poor report card, what would your parents most likely do?
   1. Nothing in particular
   2. Scold me
   3. Take away privileges
   4. Punish me severely in some way
   5. Other _____________________________________________________________
      (responses to the fifth response category were coded in the following manner)

5. Talk to me about it
6. Encourage me to do better
7. Help me with my work
8. Make me work harder
SELF-CONCEPT OF THE INTRINSIC VALUE OF THE STUDENT ROLE

1. How important is it to you to be a good student?
   1. It's not very important
   2. It's important, but other things are more important.
   3. It's important, but other things are just as important.
   4. It's the most important thing I can do.
ACTUAL EVALUATIONS

1. Do you think your child can do school work better, the same, or poorer than his (or her) friends?
   1. Poorer
   2. The same
   3. Better

2. Do you think your child will be with the best, average, or below average students when he (or she) graduates from high school?
   1. Best
   2. Average
   3. Below average

3. Do you think your child could graduate from college?
   1. No
   2. Maybe
   3. Yes

4. Remember, a person needs more than four years of college to be a doctor or a college professor. Do you think your child could do this?
   1. No
   2. Maybe
   3. Yes

5. What grades do you think your child can get?
   1. D's and E's
   2. B's and C's
   3. A's and B's
EDUCATIONAL ATTAINMENT EXPECTATIONS

1. How far in school do you think your child should go?
   1. I think he should finish the eighth grade (or less).
   2. I think he should go to high school for a while.
   3. I think he should graduate from high school.
   4. I think he should go to business or technical school.
   5. I think he should go to college for a while.
   6. I think he should graduate from college.
   7. I think he should do graduate work beyond college.

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EDUCATIONAL ACHIEVEMENT EXPECTATIONS

1. What grades do you think your child should get?

1. Mostly E's
2. Mostly D's
3. Mostly C's
4. Mostly B's
5. Mostly A's
IMPORTANCE ATTACHED TO GRADES

1. How important to you is it that your child gets mostly B's or better?

   1. Getting B's or better is not important at all
   2. Some other things are more important
   3. Getting B's or better is among the important things in school
   4. Getting B's or better is the most important thing in school
SURVEILLANCE

1. Could you tell us what stories or reading book your child has been studying at school?

2. Do you know what your child has been working on in arithmetic class lately?

Parent's answers to these questions were classified into the following three categories:

- 0 - Does not know
- 1 - Can give a general answer
- 2 - Can give a specific answer
VALUE ORIENTATIONS TOWARD EDUCATION

1. What do you think is the most important thing for your child to get out of school?

This item was open-ended in nature. The interviewers were able to categorize parents' responses into one of the following classifications:

1. Intrinsic value of education (learning for learning's sake, education as good in and of itself);
2. Pragmatic value of education (education is seen as a means of gaining specific goals, such as a good job, more income);
3. Social adjustment (education is seen as a preparation for getting along in society and with other people);
4. Personality development (education is seen as a way to help students "actualize" themselves, to develop into "all they can be").
REATIONS TO REPORT CARDS

1. When your child comes home with a **good** report card, what do you do?
   1. I give him (or her) more privileges
   2. I give him (or her) money
   3. I praise him (or her)
   4. I don't do anything out of the ordinary

2. When your child comes home with a **poor** report card, what do you do?
   1. I take away privileges
   2. I physically punish him (or her)
   3. I don't do anything out of the ordinary
   4. I ask him (or her) to explain why he did poorly
   5. I offer to help him (or her) with school work
   6. I encourage him (or her) to do better

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EDUCATIONAL ATTAINMENT ASPIRATIONS AND PLANS

1. If your child could go as far in school as you wanted him (or her) to go, how far would that be?

Responses to this open-ended question were coded as follows:

1. Quit school as soon as possible
2. Go to high school for a while
3. Finish high school
4. Go to college for a while
5. Finish a two-year college (business, trade, or technical school)
6. Finish college
7. Do graduate work beyond college

2. There are times when what we want to see happen in the future is not the same as what we really think will happen. How far in school do you really think your child will go?

Responses to this "plans for child" item were coded the same as the "aspirations for child" item.
APPENDIX C

RESULTS OF REGRESSION EQUATIONS
Regression Equation: SCA predicting EdP1

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Beta Weights</th>
<th>t-value for Beta Weights*</th>
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</table>

Regression Constant: 4.14

Standard Error of Estimate: .98

Multiple Correlation: .29

---

*i.e., t-value calculated from t-test for the significance of the occurrence of given beta weight with specified number of independent variables and specified number of observations.
Regression Equation: \( SCA + SC_{INT} \rightarrow EdPl \)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Beta Weights</th>
<th>t-value for Beta Weights*</th>
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<tr>
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<tr>
<td>SC_{INT}</td>
<td>.18</td>
<td>5.98</td>
</tr>
</tbody>
</table>

Regression Constant: 4.21

Standard Error of Estimate: .97

Multiple Correlation: .34

*\(t\)-value calculated from \(t\)-test for the significance of the occurrence of given beta weight with specified number of independent variables and specified number of observations.
**Regression Equation:**  $\text{SCA} + \text{SC}_{\text{RC}} \rightarrow \text{EdPl}$

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Beta Weights</th>
<th>$t$-value for Beta Weights*</th>
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</thead>
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<tr>
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</tr>
<tr>
<td>$\text{SC}_{\text{RC}}^{-5}$</td>
<td>.15</td>
<td>2.09</td>
</tr>
</tbody>
</table>

**Regression Constant:**  4.09

**Standard Error of Estimate:**  .97

**Multiple Correlation:**  .32

---

*i.e., $t$-value calculated from $t$-test for the significance of the occurrence of given beta weight with specified number of independent variables and specified number of observations.*

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Regression Equation: \( SC_{A} + SC_{RC} + SC_{INT} \rightarrow EdPl \)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Beta Weights</th>
<th>t-value for Beta Weights*</th>
</tr>
</thead>
<tbody>
<tr>
<td>( SC_{A} )</td>
<td>0.09</td>
<td>11.91</td>
</tr>
<tr>
<td>( SC_{RC}^{-1} )</td>
<td>-0.10</td>
<td>-3.19</td>
</tr>
<tr>
<td>( SC_{RC}^{-2} )</td>
<td>0.23</td>
<td>5.75</td>
</tr>
<tr>
<td>( SC_{RC}^{-3} )</td>
<td>0.02</td>
<td>0.69</td>
</tr>
<tr>
<td>( SC_{RC}^{-4} )</td>
<td>0.18</td>
<td>3.13</td>
</tr>
<tr>
<td>( SC_{RC}^{-5} )</td>
<td>0.15</td>
<td>2.13</td>
</tr>
<tr>
<td>( SC_{INT} )</td>
<td>0.17</td>
<td>5.72</td>
</tr>
</tbody>
</table>

Regression Constant: 5.02

Standard Error of Estimate: 0.96

Multiple Correlation: 0.36

* i.e., t-value calculated from t-test for the significance of the occurrence of given beta weight with specified number of independent variables and specified number of observations.
Regression Equation: (Dummy Variable Analysis -- variables in
dichotomized form) $SCA + SC_{RC} + SC_{INT} \rightarrow EdP1$

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Beta Weights</th>
<th>t-value for Beta Weights*</th>
</tr>
</thead>
<tbody>
<tr>
<td>$SCA$</td>
<td>.35</td>
<td>4.05</td>
</tr>
<tr>
<td>$SC_{RC}$</td>
<td>.56</td>
<td>8.87</td>
</tr>
<tr>
<td>$SC_{INT}$</td>
<td>.43</td>
<td>5.43</td>
</tr>
</tbody>
</table>

Regression Constant: 3.49
Standard Error of Estimate: .99
Multiple Correlation: .27

*i.e., t-value calculated from t-test for the significance of the occurrence of given beta weight with specified number of independent variables and specified number of observations.*
Regression Equation: (Dummy Variable Analysis -- variables in dichotomized form) SCA + SC<sub>RC</sub> + SC<sub>INT</sub> + SC<sub>RC</sub> + SCA·SC<sub>RC</sub> + SCA·SC<sub>INT</sub> + SCA·SC<sub>RC</sub>·SC<sub>INT</sub> → EdPl

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Beta Weights</th>
<th>t-value for Beta Weights*</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCA</td>
<td>1.90</td>
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<tr>
<td>SC&lt;sub&gt;RC&lt;/sub&gt;</td>
<td>1.08</td>
<td>6.41</td>
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<tr>
<td>SC&lt;sub&gt;INT&lt;/sub&gt;</td>
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<td>5.80</td>
</tr>
<tr>
<td>SC&lt;sub&gt;RC&lt;/sub&gt;·SC&lt;sub&gt;INT&lt;/sub&gt;</td>
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<td>-3.33</td>
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<tr>
<td>SCA·SC&lt;sub&gt;RC&lt;/sub&gt;</td>
<td>-1.75</td>
<td>-2.65</td>
</tr>
<tr>
<td>SCA·SC&lt;sub&gt;INT&lt;/sub&gt;</td>
<td>-2.12</td>
<td>-3.46</td>
</tr>
<tr>
<td>SCA·SC&lt;sub&gt;RC&lt;/sub&gt;·SC&lt;sub&gt;INT&lt;/sub&gt;</td>
<td>2.36</td>
<td>3.13</td>
</tr>
</tbody>
</table>

Regression Constant: 3.10

Standard Error of Estimate: .99

Multiple Correlation: .27

*i.e., t-value calculated from t-test for the significance of the occurrence of given beta weight with specified number of independent variables and specified number of observations.
Regression Equation: Eval + AttExp + AchExp + ImpGr + Surv + VOE + PRPRC + PRGRC + AttAsp + AttPl → SCA

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Beta Weights</th>
<th>t-value for Beta Weights*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eval</td>
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<tr>
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<td>.34</td>
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<tr>
<td>AchExp</td>
<td>.40</td>
<td>1.08</td>
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<tr>
<td>ImpGr</td>
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<td>-1.24</td>
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<tr>
<td>Surv</td>
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<td>-.11</td>
<td>-.19</td>
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<tr>
<td>PRPRC</td>
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<tr>
<td>PRGRC</td>
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<tr>
<td>AttPl</td>
<td>-.07</td>
<td>-.27</td>
</tr>
<tr>
<td>AttAsp</td>
<td>-.05</td>
<td>-.15</td>
</tr>
</tbody>
</table>

Regression Constant: 19.12

Standard Error of Estimate: 2.81

Multiple Correlation: .34

*i.e., t-value calculated from t-test for the significance of the occurrence of given beta weight with specified number of independent variables and specified number of observations.*
Regression Equation:  Eval + AttExp + AchExp + ImpGr + Surv + VOE + PRPRC + PRGRC + AttPl + AttAsp \rightarrow SC_{RC}

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Beta Weights</th>
<th>t-value for Beta Weights*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eval</td>
<td>.00</td>
<td>.02</td>
</tr>
<tr>
<td>AttExp</td>
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<td>-.27</td>
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<tr>
<td>AchExp</td>
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<td>-.22</td>
</tr>
<tr>
<td>ImpGr</td>
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<td>.02</td>
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<tr>
<td>Surv</td>
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<td>.83</td>
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<tr>
<td>VOE</td>
<td>.17</td>
<td>1.21</td>
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<tr>
<td>PRGRC</td>
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<td>.02</td>
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<tr>
<td>AttPl</td>
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<td>.13</td>
</tr>
<tr>
<td>AttAsp</td>
<td>-.02</td>
<td>-.32</td>
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Regression Constant: 2.48

Standard Error of Estimate: .64

Multiple Correlation: .27

---

*i.e., t-value calculated from t-test for the significance of the occurrence of given beta weight with specified number of independent variables and specified number of observations.
Regression Equation: Eval + AttExp + AchExp + ImpGr + Surv + VOE + PRFRC + PRGRC + AttPl + AttAsp → SCINT

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Beta Weights</th>
<th>t-value for Beta Weights*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eval</td>
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<tr>
<td>AttExp</td>
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<tr>
<td>ImpGr</td>
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<td>-.05</td>
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<tr>
<td>Surv</td>
<td>.07</td>
<td>1.14</td>
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<tr>
<td>VOE</td>
<td>.23</td>
<td>1.47</td>
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<tr>
<td>PRFRC</td>
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<tr>
<td>PRGRC</td>
<td>.17</td>
<td>1.06</td>
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<td>-.43</td>
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<tr>
<td>AttAsp</td>
<td>.11</td>
<td>1.52</td>
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</table>

Regression Constant: 2.59

Standard Error of Estimate: .71

Multiple Correlation: .37

*i.e., t-value calculated from t-test for the significance of the occurrence of given beta weight with specified number of independent variables and specified number of observations.
Regression Equation: $\text{VOE} + \text{PRPRC} \rightarrow \text{SC}_{RG}$

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Beta Weights</th>
<th>t-value for Beta Weights*</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOE</td>
<td>.16</td>
<td>1.22</td>
</tr>
<tr>
<td>PRPRC</td>
<td>.06</td>
<td>1.97</td>
</tr>
</tbody>
</table>

Regression Constant: 2.35
Standard Error of Estimate: .62
Multiple Correlation: .22

*i.e., t-value calculated from t-test for the significance of the occurrence of given beta weight with specified number of independent variables and specified number of observations.*

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Regression Equation: (Significant predictors of $SC_{RC}$ predicting $EdPl$)
$VOE + PRPRC \rightarrow EdPl$

| Independent Variables | Beta Weights | t-value for Beta Weights* |
|-----------------------|--------------|
| VOE                   | -.004        | -.17                      |
| PRPRC                 | .13          | .63                       |

Regression Constant:  4.08

Standard Error of Estimate: 1.17

Multiple Correlation:  .05

*i.e., t-value calculated from t-test for the significance of the occurrence of given beta weight with specified number of independent variables and specified number of observations.
Regression Equation: \( PRPRC + VOE + AttAsp \rightarrow SC_{INT} \)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Beta Weights</th>
<th>( t )-value for Beta Weights*</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRPRC</td>
<td>.07</td>
<td>2.15</td>
</tr>
<tr>
<td>VOE</td>
<td>.23</td>
<td>1.55</td>
</tr>
<tr>
<td>AttAsp</td>
<td>.11</td>
<td>1.80</td>
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</tbody>
</table>

Regression Constant: 3.41

Standard Error of Estimate: .70

Multiple Correlation: .32

*\( t \)-value calculated from \( t \)-test for the significance of the occurrence of given beta weight with specified number of independent variables and specified number of observations.
Regression Equation: (Significant predictors of $SC_{INT}^E$ predicting $EdP1$) $VOE + AttAsp + PRPRC \rightarrow EdP1$

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Beta Weights</th>
<th>t-value for Beta Weights*</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOE</td>
<td>-.11</td>
<td>-.47</td>
</tr>
<tr>
<td>AttAsp</td>
<td>.19</td>
<td>1.97</td>
</tr>
<tr>
<td>PRPRC</td>
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<td>.81</td>
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</table>

Regression Constant: 3.02
Standard Error of Estimate: 1.16
Multiple Correlation: .19

*i.e., t-value calculated from t-test for the significance of the occurrence of given beta weight with specified number of independent variables and specified number of observations.*

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Regression Equation: (Full model predicting EdPl) Eval + VOE + AttAsp + SCA + SCI_{RC-1} + SCI_{RC-2} + SCI_{RC-3} + SCI_{RC-4} + SCI_{RC-5} + SCI_{INT} \rightarrow EdPl

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Beta Weights</th>
<th>t-value for Beta Weights*</th>
</tr>
</thead>
<tbody>
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<td>Eval</td>
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<td>-.16</td>
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<td>VOE</td>
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<td>-.61</td>
</tr>
<tr>
<td>AttAsp</td>
<td>.11</td>
<td>1.11</td>
</tr>
<tr>
<td>SCA</td>
<td>.14</td>
<td>3.65</td>
</tr>
<tr>
<td>SCI_{RC-1}</td>
<td>-.19</td>
<td>-1.42</td>
</tr>
<tr>
<td>SCI_{RC-2}</td>
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<td>1.71</td>
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<td>SCI_{RC-4}</td>
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</tr>
<tr>
<td>SCI_{RC-5}</td>
<td>-.03</td>
<td>-.39</td>
</tr>
<tr>
<td>SCI_{INT}</td>
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<td>2.16</td>
</tr>
</tbody>
</table>

Regression Constant: -1.41

Standard Error of Estimate:

Multiple Correlation: .56

*i.e., t-value calculated from t-test for the significance of the occurrence of given beta weight with specified number of independent variables and specified number of observations.
APPENDIX D

LETTER SENT TO PARENTS TO GAIN THEIR COOPERATION IN INTERVIEW STUDY
May 7, 1971

Dear Parent:

The State of Michigan has recently undertaken the job of evaluating the schools of our state. As part of this research, parents are being sought out to give their opinions about how our schools are working.

In the near future, a member of our research staff will be coming to your residence to get some information about your opinions about our school system. In order for your schools to better serve the needs of your children, it is essential that we have your viewpoint, attitudes and suggestions for improvement.

Before the research interviewer calls on you, we will contact you by telephone in order to set up an appointment. When the interviewer calls -- he will present proper identification upon your request -- he will ask you a short series of questions about your feelings toward the school system in general. The answers that you and all other parents give will be treated as confidential. These answers will not be shown to anyone else besides our research staff. The research staff will submit a report to the State Board of Education about how you and other parents feel about your child's school, your child's future educational and occupational goals, and what you think about education in general.

Since we are able to ask only a few persons to express their opinions, your own personal opinion is worth that much more. Therefore, the help that you give us in this attempt will be most sincerely appreciated.

Thank you for your consideration.

Sincerely,
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Maslow, Abraham


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Melichar, Emanuel


Meltzer, Bernard


Nordstrom, Carl, Edgar Z. Friedenberg, and Hilary Gold


Nunnally, Lum


Parsons, Talcott


Patterson, Ann


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Rosenberg, Morris

Rosenthal, Robert and Lenore Jacobson

Rotter, J. B.

Scheff, Thomas

Skinner, B. F.

Snygg, Donald and Arthur Combs

Sonnquist, John

Tagiuri, Renato

Vonk, John

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