CONSTRUCTION OF A GUTTMAN FACET DESIGNED MULTIDIMENSIONAL ATTITUDE-BEHAVIOR SCALE OF INTERNAL-EXTERNAL LOCUS OF CONTROL

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CALVIN O. MATTHEWS

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ABSTRACT

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By

Calvin O. Matthews

Nature of the Problem

Research using internal-external locus of control (IELC) as a personality variable has been inconclusive. It is suggested that the main reason for the inconclusiveness has been the lack of an instrument which operationally measures IELC according to its theoretical construct (Rotter, 1954). The present research study documents the need for a new approach to the measurement of IELC using Guttman-Jordan facet design and analysis.

Rotter's (1954) social learning theory assumes that one's generalized expectancy concerning the functional relationship between behavioral events and reinforcement is a product of a person's previous experiences with reinforcing events. Rotter (1966) suggests that people with an internal locus of control (ILC) can be described as persons who maintain the generalized expectancy that reinforcement received is determined by factors under their personal control, for example, determined by skill, ability or other internal factors. Persons who believe or act as though forces beyond their personal control (fate, luck, powerful

others, chance, etc.) are the determinant factors in the occurrence of reinforcement are referred to as having external locus of control (ELC). According to Rotter (1954) there is a continuum of individual differences in internal-external locus of control. Research has found that IELC, or belief regarding nature of causal relationship between one's own behavior and its consequences, is measurable as a personality characteristic; and as such is useful in understanding individual behavior and attitudinal differences (Phares, 1955; Rotter, 1966).

Statement of the Problem

A great deal of research is and has been done using internal-external locus of control scales, mainly the "Internal-External Scale" (Rotter, 1966). A review of the instruments currently available to measure internal-external control reveals that much of the effort would have been more productive if there was an instrument which measured IELC according to IELC theoretical constructs. Hamersma's (1969) and Jordan's (1968) review of the literature indicated that most attitude scales have not been developed on the semantic structural facet theory proposed by Guttman (1959). The same is true for the Rotter I-ES. Consequently, it is not known what attitudinal level or levels in the Guttman model were or are being measured in the IELC studies.

Purpose of the Study

The major objectives of this study were: (a) to replicate the six-level attitude scale construction of Jordan using Guttman facet

design and analysis, and to test that construction; (b) to develop according to Guttman and Jordan formulation, an attitude-behavior: internal-external control scale (ABS:IE); (c) to determine the relationship (correlation) between specified levels of the ABS:IE with the major predictor variable (demographic, social, psychological, and educational level); (d) to determine the relationship between the specified levels of the ABS:IE, Rotter Internal-External Scale and the Efficacy Scale. Certain substantive and clinical hypotheses were also tested.

Methodology

Four populations of individuals which were postulated to vary in "locus of control" were used in the study. The populations chosen were: adult basic education students, high school students, undergraduate college students, and doctoral students.

Data collections were by group administration whenever possible. A standardized set of procedures was used for the administration of all instruments. In all cases, the scales were administered at the same time in the following order: ABS:IE, Efficacy Scale, Rotter I-E Scale, and the Personal Data Questionnaire.

The ABS:IE was constructed according to facet theory. Attitude has been operationally defined by Guttman (1950) as "a delimited totality of behavior with respect to something." Guttman (1959) named three facets and their respective elements, relating them in such a way that four levels were developed. These four levels of attitude-behavior identified by Guttman as representing a complete attitude

paradigm for group interaction were: stereotype, norm, hypothetical interaction, and personal interaction.

Jordan (1968) expanded the original Guttman paradigm to include five facets and six levels. These six levels included the four identified by Guttman, plus moral evaluation and actual feeling. Jordan's six level adaptation was employed in the present study and a statistical structure was hypothesized to exist between the six levels (a simplex one).

The content of the items used in the ABS:IE Scale was taken directly from Rotter's I-E Scale (1966), and was "structured" according to facet theory. Using the 29 paired items of the Rotter I-E Scale, level 1 (stereotype) of the ABS:IE was developed by semantically writing the 58 items at level 1 of the Guttman-Jordan paradigm. This was accomplished by rewording all of the Rotter I-E Scale items so they would have a "definitional statement" like level 1 of the Guttman-Jordan paradigm.

The 58 item attitude-behavior scale (plus demographic data items) was administered to students living in two dormitories at Michigan State University, summer term, 1973. A computer program was used to produce inter-item and item-to total correlation matrices. Correlation matrices were calculated to determine which items correlated highest with the scale's total score.

The 20 items (Table 11) which correlated the highest with the total scores were selected for construction of a "tentative" ABS:IE. The item content of the 20 items was then examined, and it was found

that all of the content (lateral) facets were included; i.e., all of the items did not deal with one facet such as luck, fate, powerful other, skill, ability, etc.

A second analysis was done before the final ABS:IE was developed. The 20 items selected from the first item analysis were semantically written across the five facets and six levels of the Guttman-Jordan paradigm. The scale was administered to students enrolled in Education 450 and Education 327 at Michigan State University during the spring term of 1974. A computer program was again used to produce inter-item and item-to-total correlation matrices. The ten "best items" were chosen (Table 13) for inclusion in the final ABS:IE Scale. These ten items were maintained across the six levels in the final ABS:IE Scale. The ABS:IE was administered to the research population.

Results of the Study

Internal consistency reliability of the ABS:IE was investigated by the Hoyt (1941) procedure and satisfactory reliability was indicated. The Q^2 values and the correlations among the ABS:IE, Rotter I-ES, and Efficacy Scale suggest construct validity. Content validity was assumed since the content of the ABS:IE was taken directly from the Rotter I-ES which is the most permanent measure of internal-external control.

Certain clinical or substantive hypotheses were tested and did receive some support. The data suggest that the research groups rank in the following order on the external-internal control dimension: high school students, adult education students, college students, and doctoral students.

Although homogeneous groups were chosen for the population,[1] a standard deviation greater than 2 was found for all categories and groups. A statistically significant difference was obtained between males and females on the IELC dimension as measured by the ABS:IE.

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[1]This study is part of a larger cross-cultural research project on racial-ethnic attitudes under the direction of Dr. John E. Jordan, College of Education, Michigan State University, East Lansing, Michigan, 48824.

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By

Calvin O. Matthews

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To Patrick H. and Sarah L. Matthews, who saw the wisdom of education for their children and sacrificed greatly that they might have it.

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PREFACE

This study is one in a series, dealing with Attitude-Behavior Scale construction. A common use of instrumentation, design, theoretical material, as well as technical and analyses procedures was both necessary and desirable.

CHAPTER I

INTRODUCTION

Research findings on internal-external locus of control (IELC) as a personality variable have been contradictory, inconsistent, and inconclusive. One of the main reasons for these problems has been the lack of an instrument which operationally measures IELC according to its theoretical construct (Rotter, 1954). The present research study will document the need for a new approach to the measurement of IELC, and employ Guttman facet design and analysis to develop such a measuring instrument.

Nature of the Problem

Rotter's (1954) social learning theory assumes that one's generalized expectancy concerning the functional relationship between behavioral events and reinforcement is a product of a person's previous experiences with reinforcing events. Rotter (1966) described individuals who are internally oriented as people who maintain a generalized expectancy that reinforcement received is determined by factors under their personal control, for example, determined by skill, ability, or other internal factors. Persons who believe or act as though forces beyond their personal control (fate, luck, powerful others, chance, etc.) are the determinant factors in the occurrence of reinforcement

are referred to as being externally oriented. According to Rotter (1954), there is a continuum of individual differences in internal-external locus of control. Research has found that internal-external locus of control is measurable as a personality characteristic; and, as such, is useful in understanding individual behavior and attitudinal differences (Phares, 1955; Rotter, 1966).

IELC research presently occupies a central position in social and clinical psychology. Practically every journal in social and clinical psychology contains articles about IELC. Early work in the study of IELC dealt with different expectancies for success in a situation. The situation was viewed as involving either skill or chance. For example, Phares (1957) found that subjects change their expectancies for success and failure as a result of various outcomes more under conditions of skill instruction than under conditions of chance instruction.

More recently, research has IELC as an independent variable and a considerable range of behaviors as dependent variables. These studies have included: expressed willingness to participate in social action activities (Gore and Rotter, 1963); risk taking (Lefcourt, 1970); attention and recall of information in the environment (Phares, Ritchie, and Davis, 1968; Seeman, 1963; Seeman and Evans, 1962); achievement motivation (Franklin, 1963; Rotter and Mulry, 1965); reactions to frustration (Brissett and Nowicki, 1973); and many others which will be discussed in Chapter II.

The present emphasis on IELC has grown from the desire to understand, predict, and control behavior. These, of course, are the reasons

for most studies in psychology. Specifically, the present emphasis on IELC seems to be motivated by (a) psychologists' interest in IELC as a personality variable, and (b) change in the attitudes of minority groups (Blacks, women, Chicanoes, the handicapped, American Indians, etc.). Minorities seem to be switching from an external locus of control people to a more internal locus of control. In other words, they are taking responsibility and action that allows them to influence their own destiny.

Statement of the Problem

A great amount of time and energy has been spent in internal-external locus of control research. Much of the effort has been inconclusive due to the lack of an adequate instrument which measured IELC as a theoretical construct. Rotter (1966) hypothesized there is a continuum in IELC. However, the "Internal-External Scale" (Rotter, 1966), which is commonly used to measure IELC, dichotomizes people into internal and external groups. The continuum of locus of control is not taken into consideration in the measurement of IELC. Another weakness of the "Internal-External Scale" is that it attempts to provide a unidimensional measure of IELC when the construct is theoretically a multidimensional one. Hence, the instrument measures only a portion of the IELC continuum.

Hamersma's (1973) and Jordan's (1968) reviews of the literature indicate that most attitude scales have not been developed by the multi-dimensional semantic facet theory proposed by Guttman (1959). Similarly,

internal-external locus of control scales have not been developed as a multidimensional instrument. Consequently, it is not known what attitudinal level or levels in the Guttman model are being measured in IELC research. A semantic analysis of the "Internal-External Scales" indicate that the scale items probably measure IELC at the stereotypic level in the Guttman-Jordan paradigm (see Table 5).

The Internal-External Scale (IES) includes two types of items that have not been differentiated: those that seem to refer explicitly to the respondent's own life situation and those which seem to get at beliefs about what causes success or failure for people generally. In the development of an Attitude-Behavior Scale: Internal-External (ABS: IE), a distinction will be made between the self-others items. It is hypothesized that the self-other distinction is meaningful and that it differentiates varying beliefs and behavior. It is postulated that it is the self or personal attitudes rather than people in general attitudes, that operate significantly in the motivation and performance of individuals.

Crandall et al. (1965) pointed out the importance of distinguishing different types of external environmental forces. He suggested control by other people should be separated from control by impersonal forces. For example, academic successes and failures may have little to do with "change" or "luck" and still may be subject to external control through teachers' decisions. He further suggested that responsibility for causing positive events be distinguished from responsibility for negative events since dynamics operating in assuming

credit for causing good things to happen may be very different from those operating in accepting blame for unpleasant things.

Gurins et al. (1969) concluded that the meaning of externality should be further differentiated, because people who scored highly externally often show greater variance in behavior than do people who scored as strongly internal. Gurins also stressed the need to assess how realistic it is for a person to perceive that events are beyond his control and whether he considers external forces as giving or taking. It is hypothesized that a major reason for the inconclusive and contradictory results found in the literature on IELC stems from failure to specify the multidimensionality of IELC (it is recognized that other confounding variables may also have contributed to the inconsistent results).

Need for the Study

It is hypothesized that the development of an internal-external locus of control scale according to Guttman Facet Theory, would facilitate the identification of correlates of IELC at specified levels of behavior. It is possible that identification of such correlates will suggest differential methods of changing externally oriented people to more internal people at a specified level when advisable.

Purpose

The present study has the following objectives: (a) to replicate the six-level attitude scale construction of Jordan using Guttman facet design and analysis, and to test that construction; (b) to develop according to Guttman and Jordan formulations, an attitude-behavior, internal-external locus of control scale (ABS:IE); (c) to determine the relationship (correlation) between specified levels of the ABS:IE with the major predictor variables (demographic, social, psychological, and educational level); (d) to determine the relationship between the levels of the ABS:IE, the Rotter IES, and the Efficacy Scale (life situation scale).

The present study is best described as methodological and, therefore, departs somewhat from the experimental paradigm. Two types of hypotheses will be examined: (a) measurement ones concerning facet theory scale construction and (b) clinical ones concerned with relationship between certain predictor and classificatory variables and IELC.

CHAPTER II

INTERNAL-EXTERNAL CONTROL: RELATIONSHIP TO SOCIAL LEARNING THEORY, MEASUREMENT TECHNIQUES, AND RESEARCH FINDINGS

The review of literature proposes to set the background for the current study--in terms of both theoretical framework and empirical antecedents. This chapter has three major divisions. First, an attempt is made to set the internal-external locus of control (IELC) construction perspective within the context of Social Learning Theory. This will facilitate a conceptual base from which predictions and interpretations may be made. Second, a review of the scales used to measure internal-external locus of control is presented and each is discussed thoroughly. Third, a review of behavioral and other substantive findings of IELC research is presented. Such a review is necessary for both theoretical and empirical reasons. Once a construct has been derived from a theory, it is necessary to provide indications of its utility or meaningfulness.

Relationship to Social Learning Theory

Historical Background

The concept of reinforcement (drive, cue response, and reward) as a determinant of behavior has been dealt with by many personality and learning theorists. Dollard and Miller (1950) suggest that reinforcements

are "exceedingly important" for understanding all levels of acquired behavior. Reinforcement is defined by Dollard and Miller as an event which has resulted in drive reduction. The concept of reinforcement provides a more objective basis for predicting behavior than other concepts. Their actual argument seems to assume that all behavior can be understood in terms of motivating drives, which elicit responses when the proper cues are present, and that cues and responses are linked to the drive and to each other by the success of the response, which both establishes and reinforces these links. This theory sounds like psychoanalytic theory (Freud, 1935) since Dollard and Miller attempted to integrate the work of Freud with that of behavioral theorists: Pavlov, Thorndike, and Hull.

Not all theorists interpret reinforcement as drive reduction. Tolman (1932) and Lewin (1951) suggested that subjective expectations are created and changed by reinforcement. Social learning theory (Rotter, 1954, 1965, 1966) provides a general theoretical background for the nature and effect of reinforcement. Primarily, Rotter suggests that the occurrence of behavior is determined by (a) a person's expectation that a particular behavior or event will be followed by a reinforcement in the future and (b) the value of that reinforcement to the person. The expectancy and reinforcement value are learned from previous experience. This theory is called Social Learning because it recognizes that behavior occurs in social situations which may be experienced directly or indirectly.

Once an expectancy for a behavior-reinforcement sequence is established, the failure of the reinforcement to occur will reduce or extinguish the expectancy. As students learn and acquire more experience, they discriminate between events which are causally related to preceding events and those which are not. The reinforcements which are seen as not being caused by the student's own behavior will not increase an expectancy as much as when it is seen as being contingent by the students own behavior. Consequently, individuals differ in the degree to which they attribute reinforcement to their own behavior, depending upon their past experience with reinforcement.

According to Rotter (1966) expectancies generalize from a specific situation to a series of situations which are seen as similar or related. A generalized attitude, belief or expectancy regarding the nature of the causal relationship between one's own behavior and its consequences may affect a variety of behavioral choices in a broad band of life situations. Generalized expectancies in combination with specific expectancies act to determine choice behavior along with the value of potential reinforcements. These generalized expectancies will result in characteristic differences in behavior in situations culturally categorized as chance determined versus skill determined and they act to produce individual differences within a specific condition.

Expectancy and Reinforcement Value

Social learning theory suggests that reinforcement which follows a behavior or an event acts to strengthen an expectancy that future repetitions of the behavior will be followed by the reinforcement. The

probability that an individual will repeat a particular behavior depends on two conditions: (a) the value of the reinforcement to him and (b) how much is the reinforcement perceived as being caused by his behavior. Social learning theory assumes one person may differ fairly consistently from another individual in the extent he attributes reinforcement to his own behavior. The relationships between expectancy, reinforcement value, and behavior are probably the most central for the purposes of the present study.

Stability of Reinforcement

The stability of reinforcement is important. The studies on expectancy in the literature indicate that changes produced by success and failure in specific experimental tasks may not be stable. Phares (1965), Rychlak and Eacker (1962), and Schwarz (1966) indicated that in as short a time period as one day after an experimental learning situation, there is considerable change among subjects to the expectancies they held before the experiment. The same studies indicate that reversals in expectancy are more likely to occur when expectancy has high discrepancy between the subject's initial level of expectancy and his expectancy after the experimental tasks have been performed successfully. For example, people who began with very low expectancies, but had a consistent set of successes in the experimental situation began to have a great heightening of expectancy at the end of the experiment. However, long-range permanent effect was minimal. There was a greater tendency to revert to the lower expectancy when the subjects were tested again after the experiment.

Generalized and Situational Expectancies

As one's learning history becomes more complex, he begins to generalize his expectancy from a particular situation to a class of similar situations (Williams, 1972). The probability that a particular behavior is to be a function of generalized expectancies depends on potential reinforcement and value of the potential reinforcement. These generalized variables may be changed by specific situation expectancies and the value of the reinforcement. According to Rotter (1954), the potential for a behavior to occur in a situation with respect to reinforcement is a function of the expectancy that the reinforcement will follow the behavior in that situation and the value of the reinforcement.

Condition for the Modification of Expectancies

It has been suggested above that a person's expectations concerning the functional relationship between behavioral events and reinforcing events are a product of that person's previous experiences with reinforcing events. Thus, systematic predictions of human behavior require some assessment of the condition and the extent to which the occurrence of a reinforcing event will modify a person's expectancies. There is potential error that may arise if one were to predict behavior on the basis of the occurrence of a single reinforcing event alone. Two similar reinforcing events are presumed to have quite different effects upon one's expectancies concerning the occurrence of two reinforcing events. The variable which is relevant in what effects a person's

expectancies concerning reinforcing events has been entitled "internal versus external control of reinforcement" or "locus of control" (IELC) (Rotter, 1966).

Internal Versus External Locus of Control

Rotter (1966) developed from social learning theories the concept of internal-external control of reinforcement which describes the degree to which an individual believes that reinforcements are contingent upon his own behavior. An individual with internal locus of control (ILC) can be described as a person who maintains the generalized expectancy that reinforcement received is determined by factors under his personal control. In other words, control is contingent upon his own behavior, capacities, or attributes. An individual with external locus of control (ELC) refers to the person who believes that reinforcements are not determined by factors under his personal control but are rather under the control of powerful others, luck, chance, fate, etc. Thus, depending on his previous experiences with reinforcement events, a person will develop a consistent attitude tending toward either internal or external locus of control.

Measures of Internal-External Control

Likert Scales

Traditionally, Likert-type scales have been used to measure internal-external locus of control (IELC). A general description of Likert scales will be given, followed by a discussion of specific IELC scales. Likert-type scales used to measure attitudes are frequently

referred to as summated scales. The Likert scale does not require the classification of items by group of judges. Items are selected solely on the basis of the judgment of the researcher and any item reduction procedure he may use.

The Likert-type scale, not only checks the items with which the respondent agrees, it indicates the degree of agreement or disagreement with each statement: (a) strongly agree, (b) agree, (c) undecided, (d) disagree, (e) strongly disagree. Generally, five categories are given, although some investigators have used both a larger and a smaller number of categories. To score the scale, the categories are credited 1, 2, 3, 4 or 5, respectively, from unfavorable to favorable. Scoring simply involves the summation of the respondent's scores and a higher score implies "favorableness." The results are interpreted as the respondent's position on a scale of unfavorable to favorable attitudes toward the subject in question. The responses are then analyzed to determine which items best discriminate between high and low total scores. Items which show low correlation with the total scores, and those that do not discriminate between different criterion groups are eliminated.

The Likert type scale has several advantages over other type scales. It makes it easy to eliminate items that are not related to the scale, inasmuch as they can be detected by their correlation with the total score. Likert scales are somewhat simpler to construct and tend to be more reliable due to the increased number of items usually used (Selltiz, Jahoda, Deutsch, Cook, 1966).

There are some disadvantages to the Likert type scale. It provides ordinal data and can only give rank ordering at best (Edwards, 1957). Another disadvantage of the Likert scale is that the total score of a respondent has little clear meaning, since many patterns of responses to the various items may produce the same total score (Jahoda and Warren, 1966).

Early Development of IELC Measures

The most permanent instrument for measuring internal-external locus of control has been the Internal-External Scale (IES) developed by Rotter (1966). The antecedent research which led to the development of the Rotter IES will be presented here.

Phares (1957) made the first attempt to measure individual differences of beliefs in external control as a psychological variable. He developed a Likert type scale with 13 items stated as internal attitude, and 13 as external attitude. He attempted to study the effect of change versus skill on the expectancies of reinforcement. The scale used in the study was developed a priori. He found that individuals differed in their expectancy for rewards or reinforcement, and that prediction of behavior within a task situation was possible.

Phares found that externally directed items provided low prediction data for IELC and that individuals with an external attitude would behave in a similar fashion as did all subjects when placed in a chance situation as opposed to a skill situation. That is, external subjects tended to show more unusual vacilation, smaller magnitude of

increase and decrease, and a lower frequency of shifts of expectancy in any skilled situations case than did subjects who scored low on the external items.

James (1957) revised Phares scale but still used a Likert format and wrote 26 items plus filler items based on the items which tended to be most successful in the Phares study. External individuals had less increase and decrease in scores following success and failure. They also tended not to generalize from one task to another and recovered less following the period of extinction. In addition, they tended to produce more unusual shifts (up after failure and down after success) in expectancy.

Shephard Liverant, J. B. Rotter, and M. Seeman attempted to broaden the James-Phares scale by developing subscales for different areas such as achievement, affection, general social and political attitudes, and control for social desirability by constructing a forced-choice scale. There were 100 forced-choice items, each one comparing an internally directed item with an externally directed item. The scale was item and factor analyzed and reduced to a 60 item scale by basis of internal consistency.

The subscales tended not to produce separate predictions. Achievement items tended to correlate highly with social desirability, and some subscales tended to correlate with other scales at approximately the same level as their internal consistency. Hence, items to measure more specific subareas of internal-external locus of control were abandoned.

I-E Control Scale

Rotter (1966) reported a comprehensive review of the work on the development, validity and reliability of the internal-external scale. The Internal-External Scale (IES) is a twenty-eight item, forced-choice measure including six filler items. The scale measures subjects' beliefs about the nature of the world, general expectancy or beliefs about the control of reinforcement. According to Rotter (1966), the item analysis and factor analysis indicate high internal consistency for an additive scale.

Reliability measures reported for the I-E Scale have been consistent. The test-retest reliability coefficients range from 0.49 to 0.83 over a two month interval. A group of 18 students who participated in the test-retest measure for a year, exhibited a reliability coefficient of 0.72 based on the correlation of their total internal-external score the first year, with their total score the second year. Internal consistency estimates of reliability have ranged from 0.65 to 0.79 with nearly all correlations in the 0.70s (Rotter, 1966).

Discrimination among respondents is indicated by the low relationship with such variables as social desirability, intelligence, and political affiliation. According to Minton (1967), the internal-external scores of 69 males were unrelated to political liberalism or conservatism, "left" versus "right" ideology, or attitude on international relations. On the other hand, low significant correlations were noted between external control and both conservatism and an attitude of exaggerated patriotism regarding international relations for 67 females.

Recent studies regarding the relationship between internal-external locus of control and social desirability have been contradictory. Strickland (1965), Tolor (1967), and Tolor and Jalourec (1968) found nonsignificant correlations between the I-E Scale and the Marlow-Crowne Social Desirability Scale (MC-SDS), while Feather (1967) and Altrocchi et al. (1968) found a significant relationship between I-E Scale scores and MC-SDS scores. Berzins, Ross and Cohen (1970) reported a significant correlation between the I-E Scale and the Edwards' Social Desirability Scale. These findings indicate that the I-E Scale is not completely free of the social desirability set as claimed by Rotter.

Rotter (1966) reported that sex differences on the I-E Scale among college students appear to be minimal. However, Feather (1967 and 1968) reported that females earned significantly higher external scores than males at the University of England. Williams (1972) reported no significant differences between male and female black college students on IELC as measured by the I-E Scale. Construct validity of the I-E Scale is indicated by the differences in behavior for persons above and below the median of the scale or from correlations with behavior criteria. A thorough discussion of the instrument is presented by Rotter (1966). The Rotter I-E Scale will be used in the present study.

The Efficacy Scale

The Efficacy Scale is a 9 item unidimensional Guttman Scale reported by Wolf (1957). This scale was designed to measure attitudes toward man and his environment and attempts to determine the respondent's

view of the relationship between man and his natural and social environment. The scale has been described by Wolf (1967):

> The continuum underlying this scale ranges from a view that man is at the mercy of his environment and could only hope to secure some measure of adjustment to forces outside of himself, to a view that man could gain complete mastery of his physical and social environment and use it for his own purposes (p. 113).

This variable has been called "efficacy" because the scale purports to measure attitudes toward man's effectiveness in dealing with his natural and social environment. The Efficacy Scale will be used in the present study.

Alternative Measures of IELC

Recently, several alternative measures of internal-external locus of control have been constructed. Schneider (1968) developed the Skill Versus Chance Activity Preference (S-C) Test. The S-C test consists of a forced-choice paired comparison of 170 randomly ordered pairs of combinations of 10 skill and 10 chance activities counterbalanced for initial items of the pairs of skill or chance. The activities were chosen from a large pool based on those which seemed to have the greatest face validity as depending on chance or skill. The skill activities consisted of five which involved individual competition with other individuals (e.g., chess, archery, etc.); the other five required group cooperation (e.g., football, hockey, etc.). There were also ten chance activities (e.g., throwing dice, roulette, etc.). Each of the 10 skill activities was paired with all of the chance activities. Males and females participated in this study.

Mean and standard deviation were obtained for the S-C test. The females preferred a greater number of chance activities (M = 32.25, SD = 19.27) than the males (M = 25.37, SD = 21.71), but the difference did not reach statistical significance. The reliability of the S-C test (split-half and item-total score) appeared adequate. The internally oriented males preferred skilled activities because these would confirm expectancies of internal control while externally oriented males preferred chance activities because these are not related to individual performance. The subjects were 46 male and 43 females from two introductory psychology clases at the University of Oklahoma. They were tested during two class periods at 3 week intervals. All subjects were tested using the same instructions and instruments.

Dies (1968) developed a projective measure for evaluating internal-external locus of control from the Thematic Appreciation Test (TAT). The primary purpose of Dies' work was to develop a scoring procedure for evaluating internal-external locus of control (IELC) in TAT Narratives. One to two weeks after a group administration of the Rotter I-E Scale, subjects were individually requested to write stories to seven standard TAT cards. The cards were numbered 1, 2, 4, 6GF, 9GF, 12F, and a card portrayed a psychotherapeutic relationship. The subjects were allowed five minutes per story.

A manual was developed for rating the IELC variable along a five-point continuum. Examples in the stories were chosen to represent varying points along the IELC continuum. Stories were evaluated according to the following general criteria:

Rating (5): Considerable Degree of External Control. A perception of positive or negative events as being the result of powerful others, luck, chance, etc.

Rating (4): Moderate Degree of External Control. Primary character shows little personal control over events, but less intensity than rating.

Rating (3): Neutral. Aspects of both internal and external locus of control are evident to an almost equal degree.

Rating (2): Moderate Degree of Internal Control. A perception of positive and/or negative events as being a consequence of one's behavior and under personal control. The main characters are seen as coping with problem and conflicts in a competent, determined manner.

Rating (1): Considerable Degree of Internal Control. The principal figures are described as highly competent and in control, or at least responsible for whatever happens to them.

Rating (0): Irrelevant. The story fails to provide clues for rating of IELC.

With this projective scale, it was possible to correctly classify 80 percent of the subjects according to their scores on the Rotter I-E Scale. Dies found that internal oriented subjects told significantly more TAT stories showing a belief in internal control while externally oriented subjects told significantly more stories depicting a belief in

external control. The TAT procedure provides a broader spectrum of situations and responses, including the interpersonal and intrapersonal concerns not tapped by a questionnaire.

Children's Tests of IELC

Several measures of IELC for children have been devised. The first of these by Bialer (1961) was derived from the James-Phares Scale. It is a 23-item questionnaire with yes-no answers. The child answers "yes" or "no" to the items. An example of an item from Bialer's Scale is, "Do you really believe a kid can be whatever he wants to be?" This scale significantly predicts the number of "unusual shifts" during a controlled reinforcement sequence--those who are more likely to expect future success just after failing and more likely to expect failure after succeeding. Bialer was interested in the developmental aspect of IELC attitudes as well as its relation to the conceptualization of success and failure. He found the more mature child to be more internally oriented and to manifest greater response to success and failure cues.

Battle and Rotter (1963) developed a projective IELC Scale for children. In this study, the relationship between IELC and several sociological and demographic variables (age, sex, class, ethnic group, and IQ) were established, in addition to the replication of some previous findings with adult I-E Scale scores in a performance task. The behavior task was to match a series of lines which vary in length. Before each trial, the child stated his expectancy for success on an eleven-point scale.

The projective task was a "Children's Picture Test of Internal-External Control" originated by Battle. Looking at six-item cartoon picture, the child states "what he would say" in various 'lifelike' situations which involved personal responsibility. Some items from the Children's Picture Test of Internal-External Locus of Control are listed below:

1. Why is she always hurting herself?
2. Why does her mother always holler at her?
3. That's the third game we've lost this year.

Battle and Rotter found that the interaction of social classes and ethnic groups was highly related to IELC attitudes. Low class people were more external than middle class. Lower class children with high IQ's were more external than middle class children with lower IQ's. On a line matching test, higher children's IELC scores were significantly related to lower mean expectancy for success but not significantly associated with "unusual shifts" (expect failure after success and expect success after failure). The finding tends to support the construct validity of the IELC variable as a personality dimension, in addition to suggesting some of the developmental conditions involved in the learning of such generalized expectancies.

Crandall, Katkovsky and Crandall (1965) and Crandall, Katkovsky, and Preston (1962) developed the 34 forced-choice items: Intellectual Achievement Responsibility Scale (IAR) for children. The items dealt with whether or not a child felt that he was responsible for successes and failures he experienced in intellectual situations. The child

chose between two alternative answers to each question. Rotter (1966) cites the following example from the IAR: "Suppose you did better than usual in a subject at school. Would it probably happen: (a) because you tried harder, or (b) because someone helped you?"

The IAR questionnaire attempts to measure beliefs in IELC reinforcement responsibility. However, it differs from other IELC instruments in several respects. First, the IELC Scales measure a generalized expectancy of reinforcement such as dominance, achievement, dependency, and affiliation. But, the IAR deals with children's achievement development. Its purpose is to assess children's beliefs in reinforcement responsibility exclusively in intellectual-academic achievement situations.

The IAR also differs from other IELC measures in the external variables described. Other scales include a variety of sources and agents such as luck, fate, impervious social forces, more-personal "significant others," etc. The IAR limits the source of external control to those persons who most often come in contact with the child, his parents, teachers, and peers.

Unlike the Rotter I-E Scale, the IAR Scale was constructed to sample an equal number of positive and negative events. It was felt that the dynamics operating in assuming credit for causing good things to happen, could be very different from those operating in accepting blame for negative events.

The test-retest reliability of IAR is moderately high. Forty-seven children in grades 3, 4, and 5 were given the IAR a second time

after a two month interval. For these children, the test-retest correlations were 0.69 for total, 0.66 for positive items and 0.74 for negative items. Ninth grade students (70) from the same schools were given the test after a two month interval. The reliability coefficients for these children were 0.65 for the total, 0.47 for positive items, and 0.69 for negative items. These correlations were all significant at the .001 level. There were no significant sex differences in any of the correlations.

Split half reliabilities were computed separately for the positive items and negative items. Thus, responses to the eight even-numbered items of the subscale, and nine odd-numbered items were correlated. For a random sample of 130 of the younger children, the correlation is 0.54 for positive items and 0.57 for negative ones. It is apparent that items within each subscale are somewhat heterogeneous.

Multi-Dimensional IELC Scales

Coan (1966) advocated that IELC instruments could be improved if items were varied systematically with respect to several aspects of external forces. Coan argued that IELC scales favor items which deal with social and political events as opposed to questions regarding personal habits, traits, goals or other interpersonal and intrapersonal concerns. Coan suggested that questionnaire items alone may not be sufficient to deal with all major aspects of IELC and other kinds of material might be required for a better understanding of the construct.

Gurin, Gurin, Lao and Beattie (1969) and Lao (1970) have argued for distinctions within the concept of internal-external locus of control in studies of black youth. Gurin et al. developed an internal-external scale with four factors: (a) the control ideology factor refers to the amount of control one believes most people in society possess; (b) personal control factor measures the amount of personal control the respondent believes he personally possesses; (c) system modificability refers to the degree to which the respondent believes racial discrimination, war and world affairs can be changed; (d) the last factor, race ideology, consists mostly of the race related items, which when subjected to a second factor analysis, produced a factor which was known as individual system blame. This latter factor dealt with the attribution of blame either to oneself or to a faulty social system.

Gurin et al. also formulated race relevant internal-external items which are divided into four factors: (a) individual-collective action factor measures the degree to which an individual felt that individual effort or group action represented the best way to deal with discrimination; (b) discrimination modifiability factor measures the extent to which an individual believes discrimination can be indicated; (c) the third factor, individual-system blame measures the relationship between personal control and the degree to which an individual blames himself or society for his lack of control. Gurin et al. factors were analyzed from data by 1,695 black college students.

Mirels (1970) attempted to clarify the factor structure of the Rotter I-E Scale. Mirel's study explored the tenability of the Rotter I-E Scale measuring multi-dimensional rather than unidimensional levels. The scale was administered to 159 college males and 157 college females. Two factors were identified: a belief concerning felt mastery over the course of one's life, and a belief concerning the extent to which the individual citizen can exert control over political and world affairs. It was found that predictions involving the Rotter I-E Scale could be defined by separate consideration of the two factors. Mirel's finding strongly supports the notion that the locus of control variable should be studied at a multi-dimensional rather than at a unidimensional level.

Thomas (1970) demonstrated that internal items on the Rotter I-E Scale were more congenial to individuals holding conservative political views than to those holding liberal views. Hence, there is serious doubt that the Rotter I-E Scale is a validity measure of stable personality traits. Gurin et al., Lao, Mirel, and Thomas suggest that a valid IELC Scale must distinguish those aspects of an individual's universal view which indicate a personality trait and those which reflect societal norms. A multi-dimensional scale is necessary to tap the different aspects of IELC. In the present study, a six dimensional scale has been constructed.

Review of Substantive Research Findings

A review of behavioral and other substantive findings of IELC will now be presented. This review is necessary for both theoretical

and empirical reasons. The review will offer some indication of the utility and meaningfulness of IELC.

Achievement Behavior

A large number of studies have linked IELC with grade point average, achievement test scores and classroom achievement behavior among grade school children. As a logical extension of internal-external control, Rotter (1966) hypothesized that internal people would show more overt striving for achievement than those who felt they had little control over their reinforcements. Studies by Coleman et al. (1966), Chance (1965), Crandall, Katkovsky and Preston (1962), Harrison (1968), McGhee and Crandall (1968) and Nowicki and Roundtree (1971) have found that an internal locus of control generally accompanies various aspects of children's successful academic achievement. These studies have shown that internal subjects spent more time in intellectual activities, showed more intense interest in academic activities and scored higher on intelligence tests and other academic tests than did externals.

There has been one exception to the findings mentioned above. Katz (1967) found little relationship between achievement and scores on the Intellectual Achievement Responsibility Scale (Crandall et al., 1965) among black children. Nowicki and Roundtree (1971) used the Nowicki-Stricklan I-E Scale and found that achievement, as measured by the California Achievement Test, was related to IELC for males ($r = -0.44$) but not for females ($r = 0.13$). Intelligence, as measured by the Otis-Lennon Mental Abilities Test, was not significantly associated to IELC

for males (r = 0.35) or females (r = 0.09). Rotter (1966, p. 21) points out two limitations on the potential for internal control and achievement to be positive related: (a) many people who maintain striving behavior in clearly competitive situations account for failures by expressing external attitudes or beliefs, (b) internal-external control attitudes are not generalized across the board and in highly structured academic achievement situations there is probably more specifically determining response than under other type conditions.

There has been little research concerned with prolonged achievement activities which require persistence, endurance, and delaying of gratification. Lefcourt (1973, p. 19) states that research of "achievement behavior beyond the limits of a grade school year and single administrations of achievement test is necessary to test the generality of the assumed link between IELC and achievement."

In summary, studies indicate that internal people tend to show greater interest, motivation and activity in achievement-related pursuits than do external people. However, the prediction is not consistent for boys and girls using the Intellectual Achievement Responsibility Scale (Crandall et al., 1965). More research is needed to study the dynamics between IELC and achievement associated variables. More longitudinal studies are needed, and more investigations on sex differences would be useful.

Ethnic Group and Social Class Differences

Researchers have attempted to discover what, if any, differences in attitudes of internal-external locus of control exist between ethnic groups and social classes. Studies of college populations failed (Gore and Rotter, 1963) to find significant social class differences. Among noncollege populations, studies suggest that blacks and lower economic class individuals generally have higher external scores than whites and middle-class individuals (Battle and Rotter, 1963; Lefcourt and Ladwig, 1965a, 1966; Lessing, 1969; Owens, 1969; Shaw and Uhl, 1969; Strickland, 1972; Zytkoskee et al., 1971). Graves and Lessor (cf., Lefcourt, 1966) reported the following ethnic group differences: whites were more internal than Spanish Americans, with mean IELC score for Indians falling midway between others. In a cross-cultural comparison study, Hsieh, Shybut, and Lotsof (1969) reported that whites were significantly more internally oriented than American born Chinese and Hong Kong born Chinese. The American born Chinese were significantly more internally oriented than Hong Kong born Chinese.

It is noted that blacks and other minority children (i.e., American Indians, Spanish American) are more externally oriented than whites (Coleman, Campbell, Hobson, McPortland, Mood, Weinfeld and York, 1966). In a comparative study of hard-core unemployed males, Scott and Phelan (1969) show that unemployed whites were significantly more internally oriented than unemployed blacks and Spanish Americans. In addition, these unemployed males tended to be more externally oriented than white middle class college students.

Two studies have been reported which do not support the general findings of differences in IELC attitudes among ethnic groups. One of the studies used the Intellectual Achievement Responsibility Scale (Katz, 1967; Solomon, Houlihan and Parelius, 1969) and the other used Rotter's I-E Scale (Kiehlbauch, 1968). Solomon et al. and Katz interpreted their failure to find differences between racial groups as being due to the nature of the tests used. The Intellectual Achievement Responsibility Questionnaire is viewed as one of the most specific measures of IELC. It is primarily concerned with the sense of personal control over reinforcements in the intellectual achievement area. Kiehlbauch (1968) interprets his findings as a reflection of real change in black's self-perception occurring as a function of black power and civil rights movements. Lefcourt and Ladwig (1965a) had hypothesized that such movements could shift black IELC scores in a more internal direction, thus eliminating the formerly obtained differences.

Gurin and Ottinger (1969) have raised serious questions as to whether it would be functional for minority groups to become more internal. They argue that internality creates support for the status quo among groups that are subject to social injustice. Thus, they are shielded from the perception of obstacles that can only be overcome through group action. However, Escoffery (1968) reports that internal black college students belong to civil rights organizations more than their external counterparts. Evans and Alexander (1970) have found no relationship between IELC and civil rights activities.

Concerning social class differences, Gruen and Oltinger (1969) found that middle class children are more internal than lower class children. Battle and Rotter's (1963) study of black and white 6th and 8th grade children showed significant social class effects when race and intellectual level were controlled. Wall and Miller (1970) found educational level to be directly related to internal locus of control. Tessor et al. (1968) have found internal control expectancies to be positively related to socioeconomic status and that objective access to opportunities in a community is positively related to perceived control.

In general, the data support the theoretical expectations that persons restricted by environmental barriers and subjected to limited material opportunities would develop an externally oriented outlook on life.

Risk Taking

Investigators have studied the relationship between internal-external control and risk taking behavior. Although the research available is limited, the evidence suggests that internals would produce less risk taking behavior than externals. Liverant and Scodel (1960) report support for this hypothesis. They reported internals chose significantly more intermediate bets and significantly fewer lower probability bets than externals in a dice-throwing situation. Internals also wagered more money on safe bets than on risky bets. Julian, Lichtman and Ryckman (1968) observed similar results in a dart-throwing game. They reported that internals preferred the choices with high

probabilities of success while externals preferred choices with low probabilities of success.

In contrast to the aforementioned studies, Strickland, Lewicki, and Katz (1966) and Krauss and Blanchard (1970) hypothesized that internals would show greater risk-taking behavior than externals because internals would be more likely to try to outwit the odds for reinforcement. No support was found by these investigators for their hypothesis. Baron (1968), however, observed that externals scored significantly higher on choice-dilemma problems than did internals, suggesting that internals are more willing than externals to take risk. Two similar studies conducted by Lefcourt and Steffy (1970) and Minton and Miller (1970) did not find significant results as reported by Baron (1968). It does appear that externals take fewer risks than internals.

Control of Environment

Several investigators have shown that internals, when compared to externals, exhibited more initiative in their efforts to attain goals and to control their environment. One of the first such studies was conducted by Seeman and Evans (1962). They were interested in the behavior of patients in a tuberculosis hospital. As hypothesized, the internals knew more than the externals about their own condition, questioned the doctors and nurses more and expressed less satisfaction at the amount of feedback they received concerning their condition.

In a similar study, Seeman (1963) investigated the memory of reformatory inmates for information which they were exposed to in incidental fashions. Independent of intelligence, he found a significant

relation between the amount of information remembered and between internality-externality.

More recent studies have supported and complemented the mentioned research. Phares, Ritchie, and Davis (1968) report that internals were more willing to remedy personality problems than externals. Davis and Phares (1967) concluded that internals made more attempts than externals to seek actively information concerning the influencing of others about the Vietnam War. Phares (1968) also noted that after a period of seven days, internals were more effective in using information in a computer simulation task than were externals. Hersch and Scheike (1967) noticed that internal college students working as volunteers in mental hospitals were more effective than external college students in working with chronic mental patients. MacDonald (1970) reported that internals used some form of birth control more often than externals.

Related to the feeling that one can control the environment is also the feeling that one can control himself. Straits and Sechrest (1963) and James, Woodruff and Werner (1965) concluded that internals can control not only their environment better than externals, but also their own impulses. These studies showed that smokers were more external than nonsmokers and that those individuals who stopped smoking after hearing the Surgeon General's report were more internally oriented than those who did not stop.

Some research reports nonsignificant relationships between internals and externals and control of environment or self. Hersch,

Kulik and Scheibe (1969) reported that the I-E Scale did not differentiate between college volunteers and college nonvolunteers in mental hospitals. Evans and Alexander (1970) and Thomas (1970) showed that there was no relationship between belief in internal control and political participation. Hjelle and Clouser (1970) reported no significant relationship between I-E control and smoking habits.

Research has shown that although members of minority groups and lower social groups tend to score more external control, they can become involved in social action to improve their situations (Gore and Rotter, 1963; Strickland, 1951). Studies suggest (Forward and Williams, 1970; Gurin, Gurin, Lao and Beattie, 1969; Lao, 1970) that black students who blamed the social system instead of personal inadequacies for black discrimination were more likely to participate actively in civil rights activities, to encourage collective rather than individual action to deal with discrimination and to take social action which differed from the position of previous generations. Gurin et al. and Lao stated that belief in external forces which are reality-based, such as racial discrimination, could be positive rather than negative for a black because he is able to focus on discrimination and the way society structures his fate.

In general, these studies support the hypothesis that internals not only tend to show more initiative and effort in controlling their environments than externals, but also can control their own impulses better.

Reaction to Frustration and Anxiety

A significant relationship has been shown to exist between anxiety and the I-E Scale. Butterfield (1964) found that external control was positively related to revengeful responses to frustration and negatively related to constructive reactions to frustration. Butterfield (1964) also found that external control was positively related to debilitating anxiety and negatively related to facilitating anxiety. Other studies (Feather, 1967a; Liberty, Burnstein and Moulton, 1966; Tolor and Reznikoff, 1967) have reported similar results. Watson (1967), Hountras and Scharf (1970) and Platt and Eisenman (1968) also reported studies showing that externals scored higher on anxiety measures than did internals.

Ray and Katahn (1968) administered the I-E scale, the Manifest Anxiety Scale (MAS) and the Mandler Test Anxiety Questionnaire (TAS) to ascertain the possibility of an anxiety factor within the I-E Scale. The conclusion was that the anxiety scales and the I-E Scale were assessing conceptually different variables which were correlated with each other and that the correlation obtained was not due to a hidden anxiety factor with the I-E Scale.

From the mentioned studies, it can be suggested that externals describe themselves as anxious, less able to show constructive responses in overcoming frustration and more concerned with fear of failure than with achievement per se. On the other hand, internals describe themselves as more concerned with achievement, more constructive in overcoming frustration and less anxious.

The level of aspiration type research suggests that internals seem to adjust their behavior more appropriately to their accumulative experiences than do externals. However, there is some research as to the manner in which internals cope with failure experiences. Afian (1963) reported that internal high school students forget their failure experiences more often than externals. This has been interpreted (Rotter, 1966) as a lesser need to repress by externals who do not blame themselves for their failures as often as internals. Lipp, Kolstoe, James, and Randall (1968) found that handicapped externals showed lower recognition thresholds for tachistoscopically presented pictures of handicapped persons than more handicapped internals. Similar results are reported by Phares, Ritchie and Davis (1968). MacDonald and Hall (1969, 1971) reported opposite results. Their results suggested that externals fear the difficulties associated with handicaps significantly more than internals. Butterfield (1965) found no differences between internals and externals.

Adjustment to Environment

Recent research has shown that there is a relationship between I-E control and adjustment (Crego, 1970; Platt and Eisenman, 1968; Wall, 1970; Warehime and Foulds, in press). Investigators have also reported that pathological S's have higher external scores than normal S's (Bialer, 1961; Cromwell, Rosenthal, Shakow and Kahn, 1961; Shybut, 1968).

Harrow and Ferrante (1969) investigated the distribution of various kinds of mental patients (e.g., schizophrenics, depressives) and I-E control instead of simply comparing a disturbed sample with

a normal sample as in the previously mentioned studies. They reported that their schizophrenics were more external than the total sample of nonschizophrenics. After six weeks of clinical treatment, depressives became more internally oriented, while schizophrenic and manic disorders showed a trend, though nonsignificant, toward increased externality.

Williams and Nickels' (1969) study suggested that externality and suicide proneness was directly related. Abramowitz (1969) reported that externals tend to have more angry and depressed feelings than did internals. Goss and Morosko (1970) noted that alcoholics were more internal than nonalcoholics. Also, internally scoring alcoholics reported less anxiety, helplessness, depression and clinical pathology on the MMPI.

Investigators (Adam, Webber, 1969; Johnson, Ackerman, Frank and Fionda, 1968) suggest that the locus of control variable may directly influence moral judgments and mental health. These and other mentioned findings indicate the relevance of I-E control to the study of psychopathology.

Lefcourt and Ladwig (1965b) reported that the behavior of persons holding an external control expectancy could be altered to an internal control expectancy if new goals could be cognitively linked to old success. Lefcourt (1967) noted that externals were more achievement conscious than internals when informed that achievement reinforcements were available. Smith (1970) reported that crisis patients, unlike non-crisis patients, showed a significant shift toward the internal end of the locus of control dimension following a crisis resolution period.

Gottesfield and Dozier (1966) and Gillis and Jessor (1970) also observed an increased belief in internal control in S's who had participated in a community action program or in psychotherapy.

In a related study by Fontana, Klein, Lewis and Levine (1968), schizophrenic patients who wanted to impress upon others that they were healthy were more internal on the I-E Scale and those who wanted to impress upon others that they were sick were more external on the I-E Scale. The implication is that internals wish to convey to others that they are normal and well adjusted while externals wish to impress upon others that they are sick so they cannot be held accountable for their behavior.

Skill Versus Chance Preferences

Researchers (Julian and Katz, 1968; Lefcourt, 1965; Lefcourt, Lewis and Silverman, 1968; Rotter and Mulry, 1965) suggest that internals perform better than externals under conditions where skill controls the outcome, while externals perform better than internals when chance determines the outcome. The explanation given by Rotter and Mulry (1965) concerning this relationship is that internals tended to value reinforcements in skill determined conditions more than chance and vice versa for externals.

However, Watson and Baumal (1967) proposed a different explanation. They stated that the relationship exists because the perception of no control in a particular situation (e.g., chance-determined) would increase anxiety for persons who view themselves as controlling the

significant reinforcers. On the other hand, the perception of control in a particular situation (e.g., skill-determined) would increase the anxiety of individuals who view reinforcement as beyond their personal control. Results from a study conducted by Petzel and Gynthers (1970) support Watson and Baumal rather than Rotter and Mulry. This remains an unresolved issue.

Gruen and Ottinger (1969), in studying performance, found that internals showed less maximizing (giving the correct response) and more left, middle, and right patterns of their responses than externals. On the other hand, Ude and Vogler (1969) reported no differences between internals and externals in their prediction of light patterns from two flashing lights.

There is some evidence that internals perform more efficiently under skilled conditions; the evidence is not conclusive. The problem is that the research has not been systematic. The conditions vary too much from study to study. The mentioned studies are evidence of this.

Deferred Gratification

It seems logical that a person who views himself as an effective controller of reinforcements would be one who is accustomed to planning and prolonged work efforts. Thus, internals would accept long time delays between the expression of desires and their satisfaction while externals would prefer more easily obtainable and immediate goals.

The research conducted does support this point of view. Bialer (1961) and Mischel (1966) reported that the more internal the subject, the more likely he was to prefer a delayed larger reinforcement to a

smaller immediate reinforcement. This type of research, however, has been limited. The most commonly employed technique has been to offer children a small prize immediately or the option to wait for a larger gift to be delivered after a time period. This method suffers in comparison with real decision making about valued or earned goals.

In relation to the variable of race, it has been reported (Zytkoskee, Strickland, and Watson, 1971; Strickland, 1972; Lessing, 1969) that blacks are more external and more likely to choose immediate reinforcements than whites. Walls and Smith (1970) found IELC to be correlated significantly with the choice of a slightly larger but delayed reinforcement, internals choosing to wait for the larger amount. These writers, as well as others (Mischel, 1961; Platt and Eisenman, 1968; Spivack, Levine and Sprigle, 1959) found IELC to be related to a measure of time perspective, internals judged the lapse of a minute more accurately.

In another study, Walls and Miller (1970) found IELC unrelated to delayed reinforcement choice or time perspective, but related to grade school level; the more educated persons were more internal and more likely to prefer delayed reinforcement.

Generally, the studies reported suggest that locus of control and reinforcement preference are related. The conclusions are, however, problematic because of lack of sampling of reinforcement preference techniques, the overuse of samples that are atypical or extreme in regard to the measure in question and the general lack of information linking IELC "real life" decisions involving delayed reinforcement.

It does seem unlikely, nevertheless, that these variables would be unrelated to each other.

Resistance to Influence

The reaction of internals and externals to influence from others has been a continuous interest to social scientists. Rotter (1966) suggested that internals would be more resistant to manipulation and influence from the environment. Externals expecting to be controlled from the outside would be less resistant.

Two studies (Getter, 1966; Strickland, 1970) employed a verbal conditioning paradigm in which IELC was used to predict behavior to verbal reinforcement. Although no significant differences were found between internal and externals during the acquisition trials, internals showed significantly more conditioned "responses" during the extinction trial. Strickland stated that internals who were aware of the response reinforcement contingencies tended to deny the influence of the investigators, and were more resistive to manipulation. In each of the studies there is some indication that internals were more resistant to subtle suggestions than externals.

Biondo and MacDonald (1971) investigated the effect of subtle versus overt influence attempts upon internals and externals. They found no difference as a function of the subtlety of their influence method. Externals tended to be more accepting of either influence approach in the way they rated the desirability of a given course grading system. Hjelle (1970) also found that externals manifested greater attitude change than internals when they had been exposed to communication contrary to their previous opinions.

Ritchie and Phares (1969) exposed internals and externals to identical communication either from a high- or low-prestige source. They found that externals changed more in response to a high-prestige source than to a low-prestige source. Externals also changed more than internals when both received a communication from a high-prestige source. Externals, according to Ritchie and Phares, were more influenced by the prestige of the source, but were not uniformly susceptible to influence in all situations as has been indicated by previous studies.

Johnson, Ackerman, Frank, and Fionad (1968) studied the resistance to temptation as part of a project concerned with moral development and personal adjustment. The subjects were asked to complete a story in which the hero receives social pressure to violate some social norm. Subjects were to complete the stories in which the hero made a decision to violate or not violate the social norm. The more internal male subjects tended to complete the stories in a way that the hero resisted yielding to the pressure, rather than the externals. These results were not obtained in the female sample. However, IELC was related to a measure of stability among females.

That internals are not steadfast and nonsusceptible to influence is evident in research concerning cigarette smoking. James, Woodruff, and Werner (1965) found that internal males, more than external males, tended to quit smoking for a specified length of time, as a result of the U.S.P.H.S. Surgeon General's report linking cancer to cigarette smoking. Platt (1969) reported more success at influencing the smoking behavior of internals than of externals.

In the larger number of studies, evidence tends to support the idea that internals are more resistant to pressures directing them to behave in a certain manner. However, this is not always true. Internals do yield to manipulation and pressure, but not to the same pressures as externals. Internals, more than externals, resist statements by authorities.

Cognitive Activity

Internal individuals seem to be more curious about the situation in which they find themselves than are persons with more external control expectancies. It is logical that persons holding an internal locus of control would be more cautious and calculating about their choices, involvement, and personal commitments than persons maintaining an external locus of control. Otherwise, the probability of their being able to perceive opportunities for success experience and to avoid inevitable defeats would be lessened, and they would perceive themselves as actors rather than puppets of fate. A number of negative or no reinforcements, should serve to increase self doubts, and as a result lead to an increase in external locus of control. Hence, external control or self-direction calls for more active cognitive processing of information relevant to the attainment of personal goals.

Seeman and Evans (1962) and Seeman (1963) studied cognitive activity as a function of locus of control. They reported that internals have more information relevant to their personal condition than did externals. Internal tuberculosis patients learned more about their own illness than did externals (Seeman and Evans, 1962). Internal

prisoners showed knowledge about the attainment of parole than did externals (Seeman, 1963). The differences between internals and externals as it relates to cognitive activities are prominent only when the learning is relevant to achieving a valued goal.

Davis and Phares (1967) asked their subjects to attempt to influence other subjects' attitudes toward the Viet Nam War. The main dependent measure consisted of the number of questions that subjects asked the experimenter about their specific influences. It was believed that internals would be more likely to seek information than externals, so they would be better prepared to perform the task. Subjects were also instructed as to the likelihood of their being effective. One group received skill directions, another luck directions, and a third was offered no special instructions regarding their likelihood of successful persuasion. No differences in information-seeking were found in the group which received the luck instructions. Internals, however, did ask for more information than externals about their influences in both the skill and no-instruction groups. Davis and Phares concluded that internals engage in more preliminary steps of data gathering than externals; consequently, internals increase their probability of success in performing tasks.

In a later study, Phares (1968) compared internals and externals in their tendencies to use information for decision-making which all subjects have learned to a similar level. Subjects had learned ten bits of information about each of four males and were able to recall the information. In performing certain tasks, subjects could utilize

the information learned. Phares (1968) concluded that internals are more likely to make use of information that externals are equally aware of, and consequently internals should have a greater potential for effectiveness in their social environment.

Lefcourt (1967) reported that internal subjects are more likely than externals to attend to cues providing information which can help to solve problems. Lefcourt et al. (1968) found that internals and externals varied considerably in their attention-related responses, depending upon whether they viewed the task as skill or chance determined. Internals who perceived a task requiring skill exhibited more attention to the task, and they engaged in more task relevant and less task irrelevant thoughts than did internals who believed the task was more chance determined. Internals took more time to decide on the best strategy for action when they perceived the task as skill determined. Externals, however, were more deliberate when they perceived the task as chance determined.

The literature regarding cognitive activity and IELC tends to suggest that individuals with internal locus of control tend to be more cognitively active than those with external locus of control. Internals seem to know more about what is important to them, and are more eager to get information that would help increase their probability for success in goal achievement. In skill related tasks, where the individual can be in control, internals ask for more information, are more deliberate and cautious than externals. Externals, on the other hand, seem more deliberate in change determined tasks.

Change in Locus of Control

Internal locus of control correlates high with competence and the hope of achievement. High self concept and competency are common goals of psychotherapy. In the modification of behavior, external locus of control is a decisive obstacle, and therefore, is a target of change in therapy, the classroom, etc.

Lefcourt (1967) demonstrated that explicit directions have a beneficial effect upon the control-related behavior of externals. Lefcourt and Ladwig (1965b) illustrated how expectancies in a new challenging situation could be increased when a new task was linked with others in which the subjects have already enjoyed some success.

Some studies have shown that locus of control has changed as a result of natural events. Penk (1969) reported that age change alone influences IELC scores; older children tend to be more internal than younger children. Kiehlbauch (1968) found that incarcerated inmates showed higher externality upon admission and shortly before release, than during the middle period of their imprisonment. The initial time of incarceration seemed to be a time of anxiety and helplessness. But, the intermediate period of internment with its relative stability offers less anxiety and more opportunity for successful coping behavior. As the time for release approaches, however, uncertainties about the future, "making it on the outside," become a source of apprehension and doubt.

Other change studies have investigated the effect of specified public events upon IELC score. Gorman (1968) reported that undergraduate students scored more internal than Rotter's norm for university

students on the day after the 1968 Democratic Party Convention. Many of the subjects in the study had been McCarthy supporters, who suffered a severe defeat at the convention, and left with a feeling of helplessness. McArthur (1970) found that students who were less draft eligible through the draft lottery scored significantly more external on Rotter's I-E Scale than those whose fates were unchanged by the lottery drawing.

Smith (1970) compared IELC scores of clinic clients who requested help in resolving a crisis with those intending to become engaged in long-term therapy. The crisis client was defined as a person suffering from acute feeling of helplessness, and temporary, severe, low self-confidence. These clients were involved in five weeks of crisis intervention therapy designed to help clients to adopt more effective coping techniques. The crisis patients showed an increase in internality after five weeks of therapy, whereas regular therapy cases remained at their same level of locus of control, despite a near equivalent number of therapy sessions. Dua (1970) contrasted the effects of action-oriented with reeducative therapy directed at improving interpersonal skills upon the locus of control. Dua found an increase in internality with both approaches in comparison to an untreated control group. However, it was the more action-oriented training which produced the most change. Clients who engaged in action-oriented training became more internal than those in reeducative procedure and those in the control group.

Prolonged active involvement in problem confrontation has also been found to produce IELC changes in nontherapy investigations.

Participants in a community action program among slum-dwelling poor people were related to the expression of internal control expectancies (Gottesfield and Dozier, 1966). However, there must be some feeling of success as a result of the prolonged active involvement.

Gillis and Jessor (1970) found that among patients judged by their therapist as being improved, there was more of an increase in internality than among a sample of untreated patients. Those patients, on the other hand, who were not judged as being improved did not shift in an internal direction. Masters (1970) presented a case report where his primary strategy involved altering the patient's perception of control. He suggested action for exerting control over the patient's conflict. It was found that the therapeutic intervention was a success. Although this is a singular case, it illustrates that a sense of personal control can be an integral component of psychotherapy.

Summary of Substantive Finding

Research with the IELC dimension has stimulated enough interest of diverse persuasions that the research is growing in new and different directions. Many theoretical interpretations of locus of control have been presented, many refinements in measuring techniques have been made, and substantive knowledge about locus of control have been generated.

Several studies indicate that internals tend to have greater interest and make greater effort in achievement-related activities than do externals. Additional research of the dynamics between internal-external locus of control and achievement related variables are needed. Also, more investigation on sex differences would be useful.

The literature suggests that people who are restricted by discrimination, poverty, and other social obstacles will develop an externally-oriented personality. Social class interacts with race so that persons from the lower classes and minority groups tend to have high expectancies of external control.

Internals seem to show more initiative and effort in controlling their environment, but also can control their own impulse better than externals. Internals also seek information and adopt behavior patterns which facilitate personal control over their environments.

Externals score significantly higher on the choice-dilemma problem than did internals, suggesting that the latter are more willing to take risks than externals. Also, research shows that externals describe themselves as anxious, less able to show constructive responses in overcoming frustration, and more concerned with the fear of failure. Internals, however, describe themselves as more concerned with achievement, more constructive in overcoming frustration and less anxious.

Several studies have demonstrated a relationship between IELC and adjustment. It is not clear whether the belief in external control enhances change in psychotherapy, or whether psychotherapy produces a belief in external control.

Another research area relevant to IELC concerns the preference for immediate vs. delayed reinforcement. An individual who views himself as an effective controller or reinforcement is one who is accustomed to planning and prolonged work effort. Studies reveal that long time delays between the expression of desires and their satisfaction is

commonplace for internals, whereas externals are more impulsive and prefer more easily obtainable and immediate goals.

There is evidence that intervals perform more efficiently under skilled conditions, however, the evidence is inconclusive. The inconsistency of the above finding could probably be avoided by systematic exploration of tasks and instructional sets.

It seems that internals are more resistant to manipulation from the environment. They seem to be aware of such manipulation. Externals expecting control from the environment are less resistant to outside influences. This does not mean internals are not influenced by their environment. Several studies with relevance to changing expectancies have been reported. They have focused upon IELC changes occurring as a result of natural events such as age, and specific public events. A few studies have examined the effects of therapeutic procedures upon IELC. Others have investigated active involvement in problem confrontation as a producer of IELC changes in nontherapy procedures.

IELC has already proven to be a productive research area, but further research on specific issues and areas is needed. Many of the studies simply reported correlation coefficients without experimental testing or theoretical implications.

CHAPTER III

METHODOLOGY AND PROCEDURES

This chapter of the dissertation is concerned with the procedures and methodology of the study. The first section deals specifically with Guttman's facet theory, his techniques of scaling, and Jordan's adaptation of these techniques. The instrumentation procedures of the present study and the methods used in the analysis of the data are given extended treatment.

Guttman Multidimensional Scaling

In developing the Attitude Behavior Scale: Internal External (ABS:IE)[1] Guttman facet design and Jordan's adaptation and expansion of Guttman's work were utilized. The current review emphasizes multidimensional scaling procedures (specifically, facet design) employed in this study.

Guttman's multidimensional scaling procedure makes it possible to construct items by a systematic a priori method, instead of by intuition or personal opinion. Guttman proposed to construct a scale by using a semantic, logical a priori technique. By using facet design and analysis, he projects a statistical order structure which can be

[1]Hereafter referred to as the ABS:IE

checked from empirical data. In other words, he proposes to achieve the opposite of what factor analysis accomplishes. Factor analysis attempts to organize "logically" the data by a mathematical process of forming correlational clusters or factors. The factors are ascertained a posteriori, since they are "named" after they have been derived by mathematical procedures. In the facet design approach, the facets are postulated before data gathering. Hence, the procedure is an a priori one.

According to Jordan (1970b), facet theory can be used to specify the item content of an attitude universe. The content can be ordered into semantic profiles, which are systematically related according to the number of identical conceptual elements they hold in common. By substructuring an attitudinal universe into profiles, it is possible to sample items within each of the profiles, and to predict the relationships between various profiles of the attitude universe.

Guttman (1965) defined a facet as a factor or semantic unit. He viewed facets in terms of set theory, with each facet a set consisting of elements of subsets. The elements are ordered subunits of a facet. In programming, capital letters depict the facets, while subscripts denote the respective elements.

Foa (1958) stated that the logical independence of facets indicates that every combination of the elements of selected facets describe a logically possible phenomenological category. Although the determinate facet that is relevant to a given class of events is largely intuitive in nature, certain principles are available to guide a researcher in his selection of relevant facets.

Guttman (1965) states that the facets identified for a particular project can be arranged in a "faceted definition." This faceted definition contains and arranges the facets (and their elements) so that they read like a complete sentence. Guttman (1965) provides the following facet definition of intelligence:

> An act of a subject is intelligent to the (extent) to which it is classified by a (teacher) as (demonstrating) a correct perception of an unexhibited logical (aspect) of a (relation) intended by the tester, on the basis of another (exhibited) logical (aspect) of the relation that is correctly perceived by the subject (p. 169).

The concepts in parentheses above are the relevant facets.

A more detailed and refined process for arranging the various facets and their elements is the mapping sentence. Figure 1 is an example of a mapping sentence.

Facet design permits the principle of contiguity to be invoked, hence making it possible to interpret the structural (statistical) patterns obtained. Foa (1958) stated that conceptual continguity is a necessary condition for statistical dependence. Guttman and Schlesinger (1966) state that,

> In general, the relationship between items within the framework of facet design should be expected to have its counterpart in the empirically obtained correlation matrix, where the size of the correlation is related to similarity of facet profiles (p. 6).

Guttman (1959) states that a researcher cannot presume to predict the exact size of each correlation coefficient from knowledge only of the semantics of the conceptual universe, but that one can predict a pattern or structure for the relative size of statistical coefficients from purely semantical considerations. In other words,

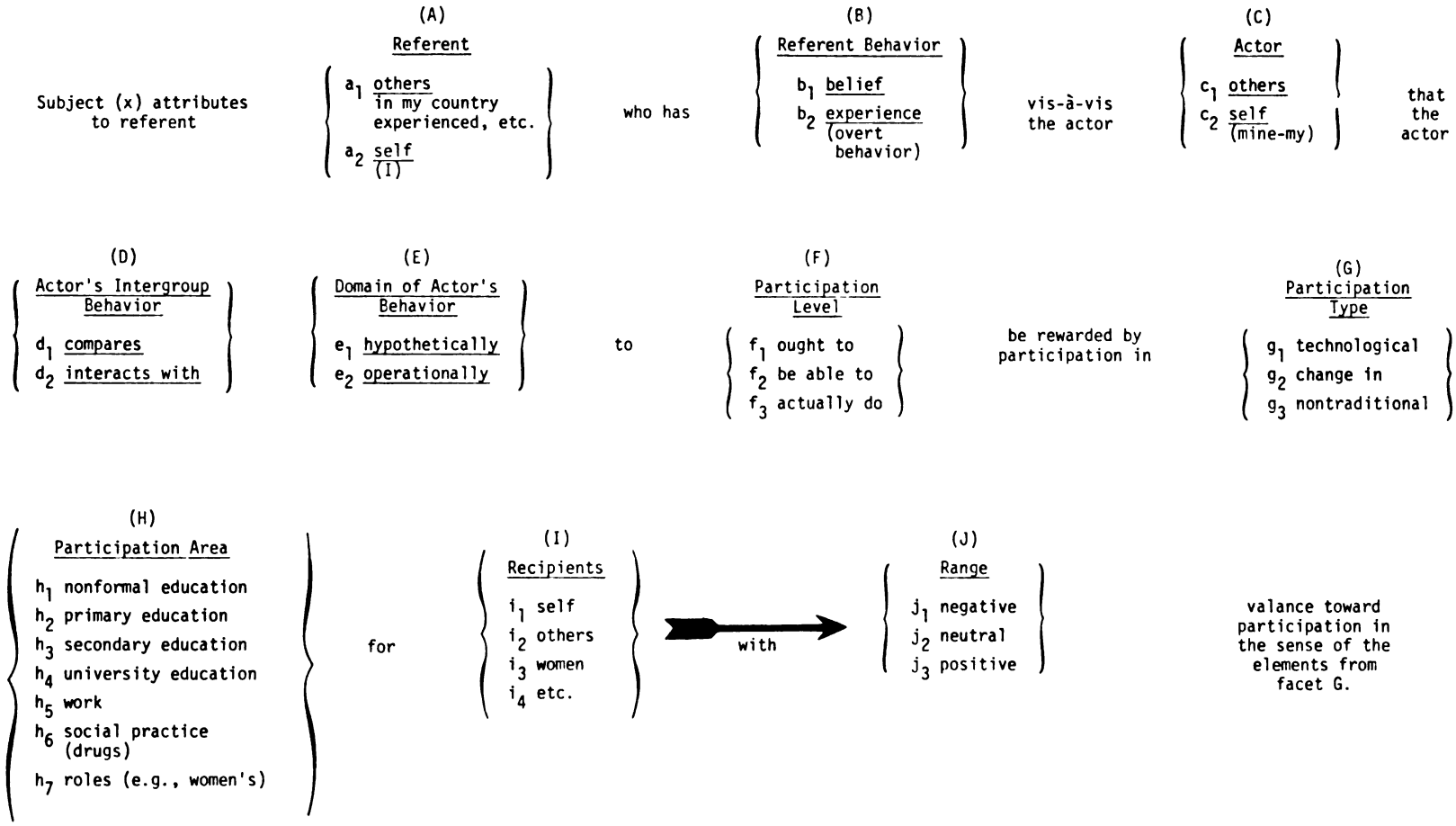

Figure 1. Mapping sentence[a] for the facet analysis of joint and lateral dimensions of attitude-behaviors toward participation in specified activities.

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[a]Revised at the First Inter-American Seminar on Educational Research, San Jose, Costa Rica, March 6-24, 1972.

[b]Facets A through E denote joint struction.

[c]Facets F through J denote lateral struction.

the continguity principle states that when the correlation between two variables is higher, the more similar should be their facet structure.

Guttman (1954-55) further examined the problem of order among variables by a rationale termed radex theory. According to Guttman, a radex is a set of variables that have a law of formation among their intercorrelation due simultaneously to differences in degree and differences in kind. The radex is a general law describing some formation which should result. Guttman was concerned with two specific types of formations: (a) the circumplex, which is a circular order among variables representing a difference in kind instead of complexity, and (b) the simplex, which represents sets of scores that have an implicit order among themselves from "least complex" to "most complex." A simplex was predicted to appear in the ABS:IE used in the present study. If such a simplex is obtained in the empirical results, the researcher can then be reasonably certain that his items are operating correctly, and that the facets used were structured such that stable statistical relationship could be predicted.

Development of the APS:IE

Facet design has been employed to construct scales which measure a variety of variables: intelligence tests (Guttman, 1954), dyadic interaction scales (Foa, 1962), and social attitude scales (Hamersma, 1973; Kaple, 1971; Jordan, 1968; and Guttman, 1959).

The present study deals with social attitude, specifically, with the way different people look at things which happen in society.

Guttman's four level paradigm and Jordan's six level expansion of the approach will be presented, since they will be directly employed in the development of the ABS:IE.

Guttman's Four Level Theory

Guttman (1950, p. 51) defined attitude as behavior: "a delimited totality of behavior with respect to something." Guttman's definition is consonant with the structural or facet theory (Foa, 1950) approach to the study of attitude and behavior. Guttman hypothesized that behavior exists at various levels, which are hierarchical in manner." He identified three necessary facets which are related according to definite procedures to determine the element composition of an attitude universe which would delimit the totality of behavior with respect to intergroup interactions. The three factors and their corresponding elements are shown in Table 1.

Table 1. Facet on which subuniverses differ

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

According to Guttman, elements from each and every facet must be represented in any given statement, and these statements can be grouped into "profiles of the attitude universe" by the multiplication of facets A x B x C, yielding 2 x 2 x 2 combination of elements or eight semantic profiles in all, i.e., (1) $a_1b_1c_1$, (2) $a_1b_1c_2$ ... (8) $a_2b_2c_2$. It can be seen that profiles 1 and 2 have two elements in common (a_1b_1) and one different (c_1c_2), whereas profiles 1 and 8 have no elements in common.

The capital letters A, B, and C depict the three facets, while the subscripts denote the respective elements. Thus $a_1b_1c_2$ reads: belief (a_1) of a subject that his own group (b_1) interacts (c_2) with a specified attitude object. Likewise, $a_2b_2c_2$ reads: self and/or observed reports of a subject's overt action (a_2) of himself (b_2) interacting (c_2) with a specified attitude object.

Table 2 contains Guttman's facetized design of the semantic structure of Bastide and van den Berghe's (1957) four attitude levels. In Table 2 there is a rank ordering ranging from a stereotype level to a personal action level. According to Guttman, the ordering shows a progression from a "weak" to a "strong" form of behavior of the subject's behavior vis-à-vis the attitude object. The more subscript "2" elements a profile contains, the greater the strength of the attitude.

Facet analysis of the semantic structure provides a social psychological basis for predicting the structure of the empirical intercorrelation matrix of the four levels of attitude-behavior in Table 2. Guttman stated that logically, only four combinations of

Table 2. Guttman facet profiles[a] of attitude levels

	Subuniverse	Profile
1	Stereotype	$a_1b_1c_1$
2	Norm	$a_1b_1c_2$
3	Hypothetical interaction	$a_1b_2c_2$
4	Personal interaction	$a_2b_2c_2$

[a]Based on facets of Table 1.

weak-strong elements exist, since elements correctly ordered with respect to one another permit N + 1 types of attitude items, i.e., "levels" in this research. Table 2 presents attitude-behaviors ranging from the stereotype level to the personal action level.

In summary, Guttman (1959) states that one cannot presume to predict the exact size of each correlation coefficient from only knowledge of the semantics of A, B, and C universes, but one can predict a pattern or structure from the relative sizes of the statistical coefficients from purely semantic considerations.

The prediction is that attitude levels closer to one another in a semantic scale of their definitions will also be closer statistically. Guttman (1959) predicts that levels closer to one another will correlate higher than ones more distant from one another. For example, the "hypothetical interaction" level will correlate more highly with the "personal interaction" level than it will with the "stereotype" level which is more distant. Jordan (1971a) points out that the "intercorrelation should

reveal a simplex ordering so that each level is attainable from its immediate neighbor or neighbors alone." A simplex is defined by Guttman (1954) as "sets of scores that have an implicit order from 'least complex' to 'most complex.'"

Although Guttman's rationale for forming combinations limits the number of combinations to four ($n + 1 = 4$, where n = number of facets), it is apparent there are eight ways to arrive at the four combinations. The combinations or profiles presented in Table 2 were chosen for three reasons: (a) their psychological relevance, (b) their simplex order, and (c) their potential for being instrumented. Some combinations are logically inconsistent and/or redundant (Maierle, 1969).

The following definitions are adapted from Guttman's 1959 definition of the four levels employed in his analysis of racial attitudes.

1. Stereotypic: Belief of (subject) that his own group (excels--does not excel) in comparison with (attitude object) on (desirable traits).

2. Norm: Belief of (subject) that his own group (ought--ought not) interact with (attitude object) in (specified ways).

3. Hypothetical Interaction: Belief of (subject) that he himself (will--will not) interact with (attitude object) in (specified ways).

4. Personal Interaction: Overt action of (subject) himself (to--not to) interact with (attitude object) in (specified ways).

As previously stated, the "principle of contiguity" requires that if items are written to correspond to the four levels (see Table 3),

the levels closest to one another would be more similar, and thus correlate more highly with one another than more distant levels. Stated another way, items which are semantically close also should be statistically close. It is this hypothesized structural relationship of levels which Guttman (1954-55) terms a "simplex." Table 3 presents a hypothetical correlation matrix of level-by-level correlations with a simplex structure.

Table 3. Hypothetical matrix of level by level correlations illustrating the simplex structure

Levels	1	2	4	4
1	--			
2	62	--		
3	54	60	--	
4	45	52	58	--

If facet theory is used to construct an attitude scale, and the empirical correlation matrix of attitude levels does not produce a simplex, Guttman (1959) suggested (a) enrichment of the facet design, and (b) placement of the behaviors (levels) in a broader context. It has been suggested by Brodwin (1973) that Jordan's five-facet, six level design encompasses the merits of both Guttman's suggestions. Jordan improved the facet design according to Brodwin (1973) by:

> adding two additional facets and, hence, two additional levels of behavior. By including facets that demonstrated more of the affective and conative dimensions of behavior, he placed the theory in a broader feeling-action oriented context encompassing Guttman's second suggestion (p. 162).

Jordan's Six-Level Adaptation

Jordan (1958) states that the facets proposed by Guttman needed to be expanded. Maintaining Guttman's four original levels, Jordan added two new levels. Jordan places more emphasis on the affective and conative elements of attitude-behavior. The facet theory approach used in the ABS:IE measures cognitive, affective, and conative aspects of behavior. Levels 1 and 2 deals with the cognitive aspect, level 3 with the affective aspect, levels 4 and 5 with a combination of affective and cognitive aspects, and level with the conative or behavior aspect. This system facilitates an examination of the interrelationship of the knowledge, feeling, and acting components of behavior (Jordan, 1971a). See Tables 4 and 5 for a visual explanation of Jordan's six-level paradigm.

Jordan's additions, personal feeling (level 5) and actual personal action (level 6), extend the paradigm to real observable overt behavior. These levels examine the respondent's actual feelings and action, instead of his perceived thoughts, beliefs, and opinions as measured in the first four levels. Brodwin (1973) states that these levels "appear to be the crucial levels at which attitudinal change occurs" (p. 163). Attitude is traditionally defined as a "predisposition to behavior." Droba (1933) saw attitude as a subjective or mental state of preparation for action.

Table 4. Jordan facets used to determine joint[a] struction of an attitude universe

(A) Referent	(B) Referent Behavior	(C) Actor	(D) Actor's Intergroup Behavior	(E) Domain of Actor's Behavior
a_1 Other	b_1 Belief	c_1 Others	d_1 Comparison	e_1 Hypothetical
a_2 Self (I)	b_2 Experience (overt behavior)	c_2 Self (mine/ my)	d_2 Interaction	e_2 Operational

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

Table 5. Joint level, profile composition, and labels for six types of attitude struction

Subscale Type Level	Struction Profile	Descriptive Joint Term
1	$a_1b_1c_1d_1e_1$	Societal stereotype
2	$a_1b_1c_1d_2e_1$	Societal norm
3	$a_2b_1c_1d_2e_1$	Personal moral evaluation
4	$a_2b_1c_2d_2e_1$	Personal hypothetical action
5	$a_2b_2c_2d_2e_1$	Personal feeling
6	$a_2b_2c_2d_2e_2$	Personal action

Tables 4 and 5 specify a structioned definitional or semantic system for the relationships between the six scale levels. Jordan (1971a) states the Cartesian product of the five two-element facets of Table 3 yields 32 possible profiles (Table 8). Table 5 indicates that six of those profiles were chosen as psychologically relevant, potentially capable of instrumentation, and possessing a specific relationship among themselves. Maierle (1969) presents a detailed discussion of the 32 profiles, the specific rules by which the 12 profiles in Table 10 are retained, and the seven "semantic paths" possible between these 12 profiles; i.e., the six levels presented in Table 5 agree with Maierle's semantic path C although they were extant prior to that.

Maierle (1969) reports that only 12 of the 32 profiles (Table 9) appear to be logically and semantically consistent. Mairele's rationale for eliminating the other 20 profiles is indicated in Table 9. The definitional statements of the 12 profiles retained are presented in Table 10. The subscripts "1" and "2" shown in Table 8 are replaced with letters in Table 9 representing the elements' names (e.g., o = others; b = believe, i = interest, p = operational). Hence, the definitional statements shown in Table 10 are possible.

Maierle (1969) also randomly varied the order of subscale level presentation of a Guttman facet-type attitude scale, and found that a better simplex approximation was obtained when the correlations were plotted according to theoretical relationships, rather than order of administration; thus giving further support to the theoretical assumptions underlying Jordan's five-facet paradigm (Table 6).

Table 6. Comparison of Guttman and Jordan facet designations

Facets in Jordan Adaptation				
A	B	C	D	E
Referent	Referent Behavior	Actor	Actor's Intergroup Behavior	Domain of Actor's Behavior
Jordan:				
a_1 others	b_1 belief	c_1 others	d_1 comparison	e_1 hypothetical
a_2 self (I)	b_2 experience (overt behavior)	c_2 self (mine/my)	d_2 interaction	e_2 operational
--	Subject's Behavior	Referent	Referent's Intergroup Behavior	--
Guttman:				
--	b_1 belief	c_1 subject's group	d_1 comparative	--
--	b_2 overt action	c_2 subject himself	d_2 interactive	--

The five facets have an ordered semantic meaning: a progression from a weak to a strong form of behavior of the subject vis-à-vis the attitude object. The rationale of the ordering system is as follows:

Facet A--the referent "other" is weaker than "self" (I) in being less personal.

Facet B--"belief" is weaker than "experience" (overt behavior) in being "passive" rather than "active."

Facet C--referring to the behavior of one's "self" (mine/my) rather than that of "others" is stronger in that it implies personal involvement.

Facet D--"comparative" behavior is weaker than "interactive" behavior. It does not imply social contact and a comparison is more passive than interaction.

Facet E--"hypothetical" behavior is weaker than "operational." It does not imply acting out behavior.

In the present study of internal-external attitudes (ABS:IE), the following definitions of Jordan's six-level paradigm (Table 7) were employed:

1. Societal stereotype--beliefs which other people have about things which happen in society.

2. Societal norm--others generally believe the following things about what happens in society.

3. Personal moral evaluation--in respect to certain situations, what do you yourself think is right or wrong for others to believe?

4. Personal hypothetical action--under specific life situations, how would you expect to act?

5. Personal feeling--what types of actual feelings do you have in certain life situations?

6. Personal action--actual experiences you have had.

Table 7. Joint level, profile composition, and labels for six types of attitude struction

Subscale Type-Level	Profile by Definitional System in Table 10	Profile by Notational[b] System in Table 6	Attitude Level Descriptive Term
1	o b o c h	a_1 b_1 c_1 d_1 e_1	Societal stereotype
2	o b o i h	a_1 b_1 c_1 d_2 e_1	Societal norm
3	i b o i h	a_2 b_1 c_1 d_2 e_1	Personal moral evaluation
4	i b m i h	a_2 b_1 c_2 d_2 e_1	Personal hypothetical action
5	i e m i h	a_2 b_2 c_2 d_2 e_1	Personal feeling
6	i e m i p	a_2 b_2 c_2 d_2 e_2	Personal action

[a]Based on facets of Table 4.

[b]See Table 10 for definitional statements.

Table 8. Combinations of five two-element facets[a]

Permutations	Facets and Subscripts				
	A	B	C	D	E
1	1	1	1	1	1
2	1	1	1	2	1
3	2	1	1	1	1
4	2	1	1	2	1
5	1	1	2	1	1
6	1	1	2	2	1
7	2	1	2	1	1
8	2	1	2	2	1
9	1	2	1	1	1
10	1	2	1	2	1
11	2	2	1	1	1
12	2	2	1	2	1
13	1	2	2	1	1
14	1	2	2	2	1
15	2	2	2	1	1
16	2	2	2	2	1
17	1	1	1	1	2
18	1	1	1	2	2
19	2	1	1	1	2
20	2	1	1	2	2
21	1	1	2	1	2
22	1	1	2	2	2
23	2	1	2	1	2
24	2	1	2	2	2
25	1	2	1	1	2
26	1	2	1	2	2
27	2	2	1	1	2
28	2	2	1	2	2
29	1	2	2	1	2
30	1	2	2	2	2
31	2	2	2	1	2
32	2	2	2	2	2

[a]Subscript "1" indicates weak element; "2" indicates strong element.

Table 9. Combinations of five two-element facets[a] and basis of elimination

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

[a]See Table 4 for facets.

[b]Numbering arbitrary, for identification only.

[c]Logical semantic analysis as follows: Basis 1: an "e" in facet B must be preceded and followed by equivalent elements, both "o"; or "i" in facet A or "m" in facet C. Basis 2: a "c" in facet D cannot be preceded by an "e" in facet B. Basis 3: a "c" in facet D cannot be followed by a "p" in facet E. Basis 4: a "p" in facet E cannot be preceded by a "b" in facet B.

Table 10. Five-facet six-level system of attitude verbalization:[a] Levels, facet profiles, and definitional statements for twelve combinations

Level	Facet Profile	No. in Table 9	No.[b]	Definitional Statement[c]	Descriptive Name[d]
1	$\frac{o\ b\ o\ c\ h}{a_1 b_1 c_1 d_1 e_1}$	1	0	Others believe others' comparisons hypothetically **	Societal stereotype (group assigned group status)
2	i b o c h	3	1	I believe others' comparisons hypothetically	Personally-assigned group status
	$\frac{o\ b\ o\ i\ h}{a_1 b_1 c_1 d_2 e_1}$	2		Others believe others' interactions hypothetically **	Societal norm
	o b m c h	5		Others believe my comparisons hypothetically	Group-assigned personal status
3	$\frac{i\ b\ o\ i\ h}{a_2 b_1 c_1 d_2 e_1}$	4	2	I believe others' interactions hypothetically **	Personal moral evaluation (perceived values)
	i b m c h	7		I believe my comparisons hypothetically	Self-concept (personally assigned personal status)
	o b m i h	6		Others believe my interactions hypothetically	Proclaimed laws (group expectations)
	o e o i h	9		Others experience others' interactions hypothetically	Group identity (actual group feelings)
4	$\frac{i\ b\ m\ i\ h}{a_2 b_1 c_2 d_2 e_1}$	8	3	I believe my interactions hypothetically **	Personal hypothetical action
	o e o i h	11		Others experience others' interactions hypothetically	Actual group action
5	$\frac{i\ e\ m\ i\ h}{a_2 b_2 c_2 d_2 e_1}$	10	4	I experience my interactions (feelings) hypothetically **	Personal feeling
6	$\frac{i\ e\ m\ i\ p}{a_2 b_2 c_2 d_2 e_2}$	12	5	I experience my interactions (overt behavior) operationally **	Personal action

[a] Cf. Tables 8 and 9.

[b] No. = number of strong elements in level.

[c] Words in parentheses are part of redundant but consistent statements; **combinations used in the ABS.

[d] Alternate names in parentheses indicate relationships of various level members.

Lateral Struction

Thus far, only subject-object relationships (joint struction) have been presented. Joint struction defines the ordered sets of the five facets (Table 4) from weak to strong in terms of personal involvement across all five facets simultaneously (Jordan, 1968). Lateral struction is concerned with the content of the item, and is involved with a specific situation and attitude object or circumstance.

Hamersma (1973), Jordan (1969), and Kaple (1971) have developed instruments based on Guttman facet theory in which the content of each attitude item was repeated or held constant across all six levels. The items differed from level to level only in alternation of the specified item content to fit the joint struction of the different levels.

The item content was also held constant across all six levels in the construction of the ABS:IE. By holding the lateral dimension constant one can then ascertain if the joint dimension varies, i.e., by checking the differences in the six attitude-behavior level scores.

Figure 2 presents a mapping sentence employed in the Kaple (1971) study, and clearly identifies the joint (facets A through E) and lateral (facets F through I) struction facets (see Figure 2).

As was stated earlier, the items for the ABS:IE were taken directly from the Rotter I-E Scale. The mapping sentence in Figure 3 presents a rationale for writing the ABS:IE items. It also identifies the joint (A through E) and lateral (F through M) struction facets.

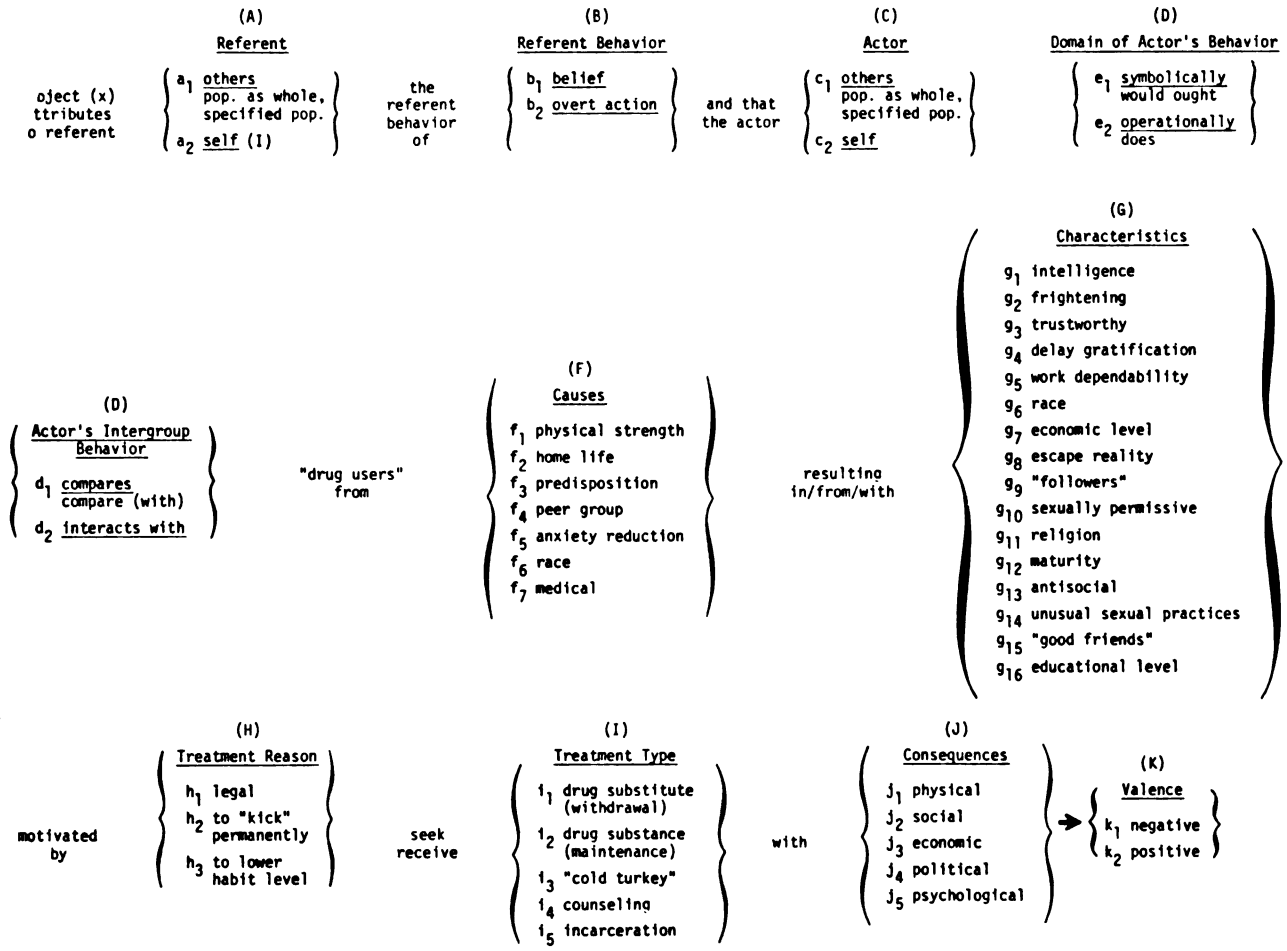

Figure 2. A mapping sentence for the facet analysis of joint and lateral struction of attitudes toward drug users.

[a]Facets A through E denote joint struction.

[b]Facets F through J denote lateral struction.

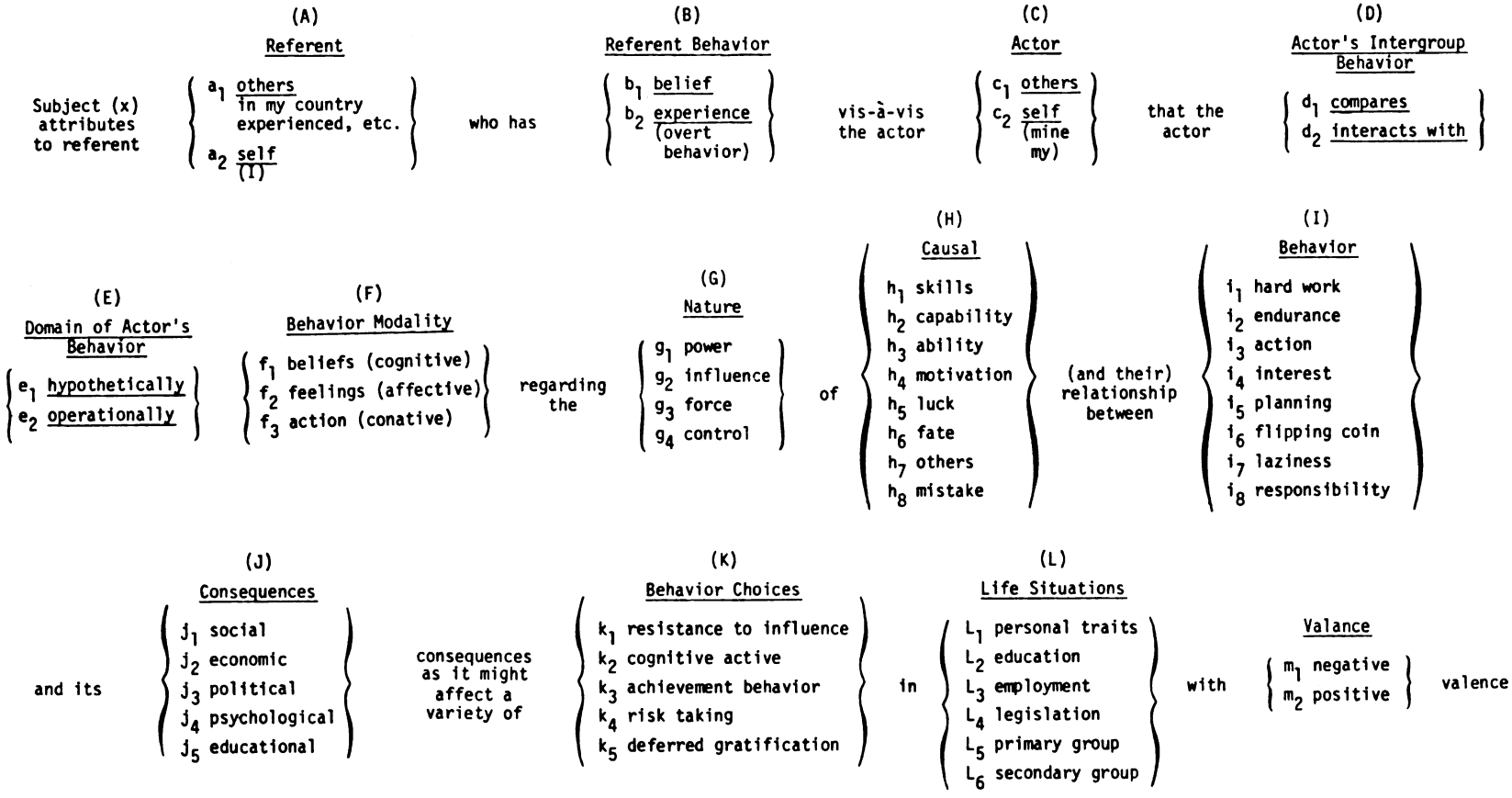

Figure 3. Mapping sentence for the facet analysis of joint[a] and lateral[b] dimensions of attitude-behavior toward internal-external locus of control.

[a]Facets A through E denote joint structure.

[c]Facets F through J denote lateral structure.

Procedures

The ABS:IE

The content of the items used in the ABS:IE scale was taken directly from Rotter's I-E Scale (1966) (see Appendix F) and was "structured" according to facet theory. Using the 29 paired items of the Rotter I-E Scale, level one (stereotype) of the ABS:IE was developed by semantically writing the 58 items at level 1 of the Guttman-Jordan paradigm. This was accomplished by rewording all of the Rotter I-E Scale items so they would have a "definitional statement" like level 1 in Table 10. For example, item three of the I-E Scale is: "Many of the unhappy things in people's lives are due to bad luck." This item was changed to: "Others believe the unhappy things in people's lives are due to bad luck." As previously stated, all 58 items of the Rotter I-E Scale were semantically written to fit the societal stereotype level of the attitude-behavior paradigm.

The 58 item attitude-behavior scale (plus demographic data items) was administered to students living in two dormitories at Michigan State University, summer term, 1973. The MDSTAT Computer Program (Ruble and Rafter, 1966) at Michigan State University was used to produce inter-item and item-to-total correlation matrices. According to Anastasi (1968), high-item-to-total across levels and low inter-item correlations (within levels) are optimally desirable for item analysis. Correlations matrices were calculated to determine which items correlated highest with the scale's total score for males, females, blacks, and whites.

The 20 items (Table 11) which correlated the highest with the total scores were selected for construction of a "tentative" ABS:IE scale (Appendix D) across the six levels. Also, item content was considered in choosing the 20 items, so that the items would include a variety of content factors. The Rotter I-E Scale seems to include the following factors: luck, powerful others, fate, ability, skills, and motivation.

Jordan (1970a, p. 36) reported that items which correlate high with the total score on one level of an attitude-behavior scale will correlate high throughout the five facets and six levels. Hence, it was not considered necessary to construct and administer the initial scale at all six levels.

A second item analysis was done before the final ABS:IE (Appendix F) was developed. The 20 items selected (Table 11) from the first item analysis were semantically written across the five facets and six levels of the Guttman-Jordan paradigm. This scale (Appendix D was administered to students enrolled in Education 450 and Education 327 at Michigan State University during the spring term of 1974. Students enrolled in Education 450 had just completed student teaching and had returned to Michigan State University to take the course to complete their program for certification as teachers. The students enrolled in Education 327 were mostly sophomores and juniors majoring in education. The MDSTAT computer program at Michigan State University was again used to produce inter-item and item-to-total correlation matrices (Table 12). The ten best items (Table 13) were chosen for inclusion in the final ABS:IE Scale.

Table 11. Content of items for inclusion in the tentative ABS:IE

Item Content[a]	Levels and Item Numbers					
	1	2	3	4	5	6
1. Unhappiness is due to bad luck.	1	21	41	61	81	101
2. Personal worth is unrecognized	2	22	42	62	82	102
3. Teachers are not fair.	3	33	43	63	83	103
4. Right break needed to achieve.	4	24	44	64	84	104
5. Decision to take action.	5	25	45	65	85	105
6. Success depends on hard work.	6	26	46	66	86	106
7. World is controlled by powerful people.	7	27	47	67	87	107
8. Events depend on good or bad fortune.	8	28	48	68	88	108
9. Getting doesn't depend on luck.	9	29	49	69	89	109
10. Decision making by flipping a coin.	10	30	50	70	90	110
11. Being boss depends on luck	11	31	51	71	91	111
12. Success depends on ability.	12	32	52	72	92	112
13. No such thing as luck.	13	33	53	73	93	113
14. Bad things are balanced by good things.	14	34	54	74	94	114
15. Relationship between grades and studying.	15	35	55	75	95	115
16. No influence over things.	16	36	56	76	96	116
17. Trying to please people.	17	37	57	77	97	117
18. No control over politician.	18	38	58	78	98	118
19. Good job depends on fate.	19	39	59	79	99	119
20. What is going to happen will happen.	20	40	60	80	100	120

[a]3974 edition of the ABS:IE (Appendix D).

Table 12. Items selected[a] for pilot test to develop ten-item[b] six-level ABS:IE

Item Numbers		Item-to-Total Correlations by Groups											
		Ed. 327						Ed. 450					
ABS:IE	Rotter I-E	1	2	3	4	5	6	1	2	3	4	5	6
1[b]	2-A	52	51	71	59	63	57	53	54	51	51	54	57
2[b]	4-B	57	56	72	52	38	66	54	69	64	55	40	60
3	5-A	41	33	38	44	41	15	56	55	50	60	51	41
4[b]	6-A	44	50	60	61	20	55	59	60	52	37	46	51
5	9-B	43	37	29	25	55	41	16	57	34	40	60	65
6	11-A	33	55	68	44	18	61	67	43	74	62	16	64
7[b]	12-B	42	52	61	73	60	50	58	55	41	41	60	57
8	13-B	52	65	57	38	40	50	39	57	49	27	69	47
9	15-A	56	33	85	46	42	52	53	37	49	47	44	56
10[b]	15-B	51	48	71	62	73	58	44	62	46	28	65	38
11[b]	16-A	55	49	54	41	53	25	66	66	25	42	69	57
12	16-B	53	45	40	41	57	47	28	44	22	40	35	68
13	18-B	24	18	43	63	49	48	47	13	28	58	48	65
14	21-A	39	47	13	16	16	23	27	30	08	05	19	12
15[b]	23-B	44	60	34	55	65	45	53	61	40	46	50	35
16[b]	25-A	48	49	51	57	46	48	71	55	58	56	54	47
17	26-B	39	69	23	46	50	31	69	57	48	41	50	60
18[b]	22-A	51	61	52	65	47	43	47	37	34	59	64	50
19[b]	11-B	28	55	50	64	59	25	69	59	47	53	64	60
20	9-A	32	50	49	50	58	63	66	49	16	49	53	41

[a]Twenty items were selected (highest item-to-total correlations) from the 58 or 29 pairs of the original Rotter IES items, and written at the six levels of the Guttman-Jordan paradigm.

[b]The ten items selected for the final ABS:IE.

Table 13. Content of items for inclusion in the final ABS:IE

Item Content[a]	Levels and Item Numbers					
	1	2	3	4	5	6
1. Unhappiness is due to bad luck.	1	11	21	31	41	51
2. Personal worth is unrecognized.	2	12	22	32	42	52
3. Right break needed to achieve.	3	13	23	33	43	53
4. World is controlled by powerful people.	4	14	24	34	44	54
5. Decision making by flipping a coin.	5	15	25	35	45	55
6. Being boss depends on luck.	6	16	26	36	46	56
7. Relation between grades and studying	7	17	27	37	47	57
8. No influence over things.	8	18	28	38	48	58
9. No control over politicians.	9	19	29	39	49	59
10. Good job depends on fate.	10	20	30	40	50	60

[a]52574 edition of the ABS:IE (Appendix E).

Research Population

Four socially relevant groups which were projected to possess various IELC orientations were used in the study. The final scale was administered to the following criterion groups (categories): (a) adult education students, (b) high school students, (c) undergraduate college students, and (d) Ph.D. candidates. The research design specified sampling at least 50 subjects in each category and at least 30 individuals in each subgroup. For example, high school students were divided in 11th and 12 grades; thus at least 30 subjects were required for each grade. These samples were drawn from the Lansing (Michigan) school system and the College of Education, Michigan State University, East Lansing, Michigan.

The categories were believed to vary in IELC along a continuum from low to high in internal control, 1 through 4, shown in Table 14. Each category is divided into corresponding subgroups where applicable. The categories and groups are presented in Table 14, and this terminology (categories and groups) will be used throughout Chapters IV and V.

Category 1 consists of adult basic education students enrolled in the Adult Basic Education program, Lansing, Michigan. The students in this program are divided into remedial, regular, and advanced classes. The remedial class was not literate enough to complete the scales. Consequently, Category 1 is made up of two groups. Group 1 consists of 31 regular class members (17 females, 14 males), and Group 2 consists of 35 advanced class members (21 females, 14 males). The racial balance of this category is not known, but it consists of Blacks,

Table 14. Research population employed

Category	Groups	Group No.	N	Females	Males
1					
Adult education students	Regular class	1	31	17	14
	Advanced class	2	35	21	14
2					
High school students	Juniors	1	38	17	21
	Seniors	2	30	18	12
3					
College students	Freshmen and sophomores	1	203	117	189
	Juniors and seniors	2	106	56	50
4					
Doctoral students	Graduate assistants	1	63	28	37

Whites, and Mexican-Americans, whose incomes average between $5,000 to $8,000 per year.

Category 2 is made up of high school juniors and seniors enrolled in a high school in Lansing, Michigan. Group 1 of Category 2 consists of 38 juniors (17 females, 21 males). Group 2 of Category 2 consists of 30 seniors (18 females, 21 males). The students in this category are generally at the lower-middle economical level.

Category 3 is made up of undergraduate students in the College of Education at Michigan State University. Group 1 of Category 3 consists of 189 freshmen and sophomores (110 females and 79 males) enrolled in Education 200 Summer term 1974. Group 1 of Category 3 also consists of students enrolled in Education 483 which is a Special

Problems course. The course was sponsored by the Counseling Center at Michigan State University for the purpose of training prospective teachers interested in working in inner-city schools. The training consists of interpersonal, social and human relation skills. Students enrolled in Education 483 are similar to the Education 200 students in student status, but there were more blacks enrolled in the 483 course. Education 483 subjects were added to the Group 1 of Category 3 to increase the number of black subjects. Race is a variable in this study, and it was necessary to increase the number of black subjects for analysis purposes.

Group 2 of Category 3 consists of 106 Juniors and Seniors (56 females, 50 males) enrolled in the College of Education at Michigan State University. These students were enrolled in Education 450 and Education 325A, Summer term 1974. Students enrolled in Education 450 had just completed student teaching and had returned to Michigan State University to take the course to complete their program for certification as teachers. The students enrolled in Education 325A were Juniors and Seniors majoring in Education.

Category 4 which is also considered a group is made up of 63 doctoral students (28 females, 37 males) in the College of Education at Michigan State University. These students were graduate assistants, but not necessarily working in the College of Education.

In summary, there are four categories and seven groups (doctoral students are concerned as both a category and a group for analysis purposes).

Data Collection

Data collection was by group administration whenever possible. A standardized set of procedures was developed for the administration of all instruments (see Appendix B). In all cases, the scales were administered at the same time in the following order: ABS:IE, Efficacy Scale, I-E Scale, and Personal Data Questionnaire.

Major Variables of the Study

Jordan (1958) reported that four classes of variables seem to be important determinants, correlates, and/or predictors of attitudes: (a) econo-demographic variables (age, sex, income, etc.), (b) socio-psychological variables such as value orientation, (c) contact (e.g., amount, enjoyment and alternatives), and (d) the knowledge variable (e.g., amount of factual information one has about the attitude object. In the present study, there is no direct personal attitude object. This study deals with a conceptual object or attitudinal philosophy rather than a direct personal attitude object. The review of literature indicates that econo-demographic variables and socio-psychological variables are the best predictors of IELC. A personal data questionnaire was designed to tap the variables suggested in the review of literature. Hypotheses to test the relationship of all these variables were not generated for this study as the primary emphasis is on test construction rather than "clinical hypotheses."

Demographic and Socio-Psychological Variables

The following demographic data were collected as possible correlates and/or predictors of IELC attitudes: (a) sex, (b) age, (c) amount of education, (d) marital status, (e) religious preference, (f) degree of conformity to religious rules and regulations and importance of religion, (g) geographical location, and (h) racial group.

Validity

Content validity of the ABS:IE can be assumed since the content was taken directly from the Rotter I-E Scale and facetized into the mapping sentence in Figure 3. The content validity of the Rotter I-E Scale has been well documented (see Rotter I-E Scale, Chapter II). Secondly, content validity of the items of the ABS:IE is indicated by the comprehensive review of substantive findings in the literature. Thirdly, content validity can be assumed since facet theory was employed to insure that "known" facets of the attitude universe were sampled (Jordan, 1970, p. 33). Anastasi (1968) states that "content validity involves essentially the systematic examination of the test content to determine whether it covers a representative sample of that behavior domain to be measured" (p. 100). Anastasi further suggests a thorough and systematic examination of relevant subjective material, as well as consultation with knowledgeable people in the specific area. These suggestions were followed in the development and writing of the ABE:IE.

Simplex Validity Data

Construct validity is indicated by the results of the simplex data and from social learning theory. The analysis of the simplex is presented first. The simplex hypothesis states a positive (correlational) relationship between a conceptual theory (semantic structure) and an obtained statistical structure. The size of the correlation coefficients should increase with an increase in the number of related contiguous facets in the variables, e.g., levels. The simplex results shown in Tables 15 and 16 show the close approximation of the simplex that was obtained in the Attitude Behavior Scale: Mentally Retarded. Other studies on varying attitude-objects using Guttman-Jordan facet analysis and design (Kaple, 1971; Williams, 1970; and Hamersma, 1973) have obtained results that fit the simplex pattern (see Tables 17 and 18). These studies lend support to the construct validity of the ABS:IE since the simplex structure seems to be invariate across attitude-objects.

Social Learning Theory Data

Construct validity is also provided by social learning theory. The theory provides a general theoretical background for the content of the ABS:IE. As stated earlier in Chapter II, it is postulated that the occurrence of behavior is determined by an individual's expectation that a particular behavior or event will be followed by a reinforcement in the future and the value of that reinforcement to the person. The expectancy and reinforcement values are learned from previous experiences. Rotter (1966) developed, from social learning theories, the construct of

Table 15. Analysis of theoretical correlations[a] of "perfectly ordered" matrices with equal and unequal differences between correlations

Descriptive Term	Unequal Differences	Equal Differences	Equal Differences
Matrices are "Scrambled"	Original $Q^2 = 0.40$ Matrix 19.7 Scrambled -- 98 -- 20 55 -- 87 63 07 -- 13 37 93 02 -- 47 80 99 28 72 --	Original $Q^2 = 0.561$ Matrix 15.3 Scrambled -- 90 -- 70 80 -- 90 80 60 -- 60 70 90 50 -- 80 90 90 70 80 --	Original $Q^2 = 0.686$ Matrix 15.5 Scrambled -- 60 -- 40 50 -- 60 50 40 -- 30 40 60 20 -- 50 60 60 30 50 --
Matrices are "Ordered"	Best $Q^2 = 0.868$ Matrix 15.2 1 -- 2 87 -- 3 63 98 -- 4 28 47 80 -- 5 07 20 55 99 -- 6 02 13 37 72 93 --	Best $Q^2 = 0.994$ Matrix 15.4 1 -- 2 90 -- 3 80 90 -- 4 70 80 90 -- 5 60 70 80 90 -- 6 50 60 70 80 90 --	Best $Q^2 = 0.968$ Matrix 15.6 1 -- 2 60 -- 3 50 60 -- 4 30 50 60 -- 5 40 40 50 60 -- 6 20 30 40 50 60 --
Levels	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6

[a]Reversals of order are underlined.

Table 16. Analysis of simplex correlations[a] of the ABS-MR test development data for the ED 200, Belize, and SER samples[b]

Descriptive Term	ED 200--633 Sample						Belize--523 Sample						SER--88 Sample					
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	Original Q^2 = 0.95						Original Q^2 = 0.86						Original Q^2 = 0.97					
Societal stereotype	1	--	Matrix 16.1				1	--	Matrix 16.3				1	--	Matrix 16.5			
Societal norm	2	44	--				2	22	--				2	56	--			
Personal moral evaluation	3	05	21	--			3	11	32	--			3	17	34	--		
Personal hypothet. action	4	15	21	55	--		4	21	28	39	--		4	10	12	48	--	
Personal feeling	5	17	12	19	38	--	5	17	06	19	31	--	6	01	05	04	13	21	--
	Best Q^2 = 0.95						Best Q^2 = 0.86						Best Q^2 = 0.97					
Examine each matrix for "order" of levels	1	--	Matrix 16.2				1	--	Matrix 16.4				1	--	Matrix 16.6			
	2	44	--				2	22	--				2	56	--			
	3	05	21	--			3	11	32	--			3	17	34	--		
	4	15	21	55	--		4	21	28	39	--		4	10	12	48	--	
	5	17	12	19	38	--	5	13	10	15	32	--	5	04	13	08	24	--
	6	01	04	05	19	22	--	6	17	06	19	31	16	6	01	05	04	13	21	--

[a]Reversals are underlined.

[b]ABS-MR = Attitude Behavior Scale: Mental Retardation; from Jordan (1970, p. 26).

Table 17. Analysis of simplex correlations of the ABS:BW/WN for the research groups[a]

	BP						WP						BC						WC					
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	Original Q^2 = 0.74						Original Q^2 = 0.90						Original Q^2 = 0.73						Original Q^2 = 0.83.					
1	--		Matrix 17.1				--		Matrix 17.3				--		Matrix 17.5				--		Matrix 17.7			
2	13	--					41	--					59	--					58	--				
3	29	38	--				17	35	--				27	22	--				32	29	--			
4	14	30	46	--			19	33	46	--			17	35	03	--			08	18	22	--		
5	01	14	08	04	--		08	09	36	22	--		29	55	20	55	--		26	11	07	30	--	
6	14	25	44	14	07	--	10	13	13	04	29	--	22	17	01	30	39	--	04	37	27	30	22	--
	Best Q^2 = 0.92						Best Q^2 = 0.92						Best Q^2 = 0.95						Best Q^2 = 0.85					
1	--		Matrix 16.2				--		Matrix 17.4				--		Matrix 17.6				--		Matrix 17.8			
2	14	--					41	--					27	--					58	--				
3	29	46	--				19	33	--				22	59	--				32	29	--			
4	14	14	44	--			17	35	46	--			20	29	55	--			04	37	27	--		
5	12	30	38	25	--		08	09	22	36	--		03	17	35	55	--		08	18	22	30	--	
6	01	04	08	07	14	--	10	13	04	18	29	--	01	22	17	39	30	--	26	11	07	22	30	--

[a]ABS:BW/WN = Attitude Behavior Scale: Black-White/White-Negro (or Black); from Williams (1970, p. 69).

Table 18. Correlation matrices and Q^2 values for original and best simplex approximations on the ABS-DU, all categories, initial scale[a]

Original Simplex Matrix Total All Categories All Groups					
--				$Q^2 = 0.98$	
.55	--			matrix 18.1	
.39	.27	--			
.27	.25	.70	--		
.24	.24	.62	.86	--	
.21	.24	.59	.82	.88	--
Best Simplex Matrix Total All Categories All Groups					
--				$Q^2 = 0.98$	
.55	--			matrix 18.2	
.39	.37	--			
.27	.25	.70	--		
.24	.24	.62	.86	--	
.21	.24	.59	.82	.88	--

[a]ABS-DU = Attitude Behavior Scale: Drug Users, from Kaple (1971, p. 102).

internal-external locus of control over reinforcement. The ABS:IE proposes to measure the IELC construct. Anastasi (1969, p. 114) states that "construct validity of a test is the extent to which the test may be said to measure a theoretical construct or trait."

Concurrent and predictive validity was tested by correlating the ABS:IE with the Rotter I-E Scale and the Efficacy Scales. These scales have already been established as measures of IELC. Concurrent validity was also tested by the "known group" method. It was hypothesized that the four criterion groups, ordered by amount of formal education, do possess "known degrees" of IELC. It is suggested that the degree of IELC of these groups fall along a continuum from an external to an internal locus of control. The older, more experienced, more highly educated, more skilled and knowledgeable subjects are projected to score more internal on the ABS:IE. Data were collected on nine predictor variables which provide "correlational" evidence of the validity of the ABS:IE content, in that groups with known characteristics responded as expected. Jordan (1972b) reported evidence for concurrent validity in that three ABS:MR studies (Jordan, 1971a; Morin, 1969; and Vurdelja, 1971) have differentiated groups with known differences of attitudes toward mental retardation in several languages.

Reliability

Reliability estimates (Table 21) for the six levels were obtained by the Hoyt (1941, pp. 153-160) method described by Winer (1962). This method uses analysis of variance to produce a reliability

Table 19. ABS-IE: Basic variable list[a] by IBM card and column

		Variable	Score Range	IBM Card	IBM Column	ABS:IE Items
Attitude-Behaviors	1.	Stereotype	10-40	1	21-30	1-10
	2.	Norm	10-40	2	21-30	11-20
	3.	Moral evaluation	10-40	3	21-30	21-30
	4.	Hypothetical	10-40	4	21-30	31-40
	5.	Feeling	10-40	5	21-30	41-50
	6.	Action	10-40	6	21-30	51-60
Value	7.	Efficacy	9-36	1-6	32-40	61-69
IELC	8.	Rotter[b] IES	0-23	1-6	41-69	70-98
Demographic	9.	Sex[c]	1-2	1-6	70	99
	10.	Age	1-5	1-6	71	100
	11.	Education	1-5	1-6	72	101
	12.	Income	1-5	1-6	73	102
	13.	Marital	1-5	1-6	74	103
	14.	Religion	1-5	1-6	75	104
	15.	Religion--Imp.	1-5	1-6	76	105
	16.	Race	1-5	1-6	77	106
	17.	Youth--Urbanity	1-5	1-6	78	107
Identity	18.	Nation (U.S.)	133	1-6	1-3	--
	19.	Interest group[d]	01-99	1-6	4-5	--
	20.	Adm. group[e]	01-99	1-6	6-7	--
	21.	Subject no.	001-999	1-6	8-10	--
	22.	Card no.	1-6	1-6	11	--

IBM Column	Item and Internal Score[b]	IBM Column	Item and Internal Score	IBM Column	Item and Internal Score
42	71-2	51	80-1	61	90-2
43	72-1	52	81-1	62	91-1
44	73-1	53	82-1	63	92-1
45	74-1	55	84-1	65	94-1
46	75-2	56	85-2	66	95-1
47	76-2	57	86-2	67	97-1
49	78-2	58	87-2	68	98-2
50	79-1	60	89-2		

[a]On the 52574 of the ABS:IE.

[b]Rotter I-E Scale "positive" scores; filler items (70, 77, 83, 93, and 96) have been omitted (see Appendix G).

[c]Sex: 1--female; 2--male.

[d]Interest group (columns 4-5):
01-02 Adult Education students,
03-04 High School students,
05-26 College students,
27 Doctoral candidates.

[e]Administration group (columns 6-7):
01 regular class (adult),
02 advanced class (adult),
03 junior class (H.S.),
04 senior class (H.S.),
05-22 Ed. 200 (Sec. 1-18),
23-25 Ed. 325A (Sec. 1-3),
26 Ed. 250,
27 Ph.D. Ed.,
28 Ed. 483.

coefficient equivalent to the Kuder-Richardson measure of internal consistency at each of the six levels of attitude measured.

Hypotheses of the Study

Since the major emphasis of this study is methodological, most of the analysis deals with measurement procedures and the use of facet design and analysis. However, both theoretical and clinical hypotheses are examined. The hypotheses are accepted or rejected at the .05 level of significance. Table 19 contains the variables of the study by name, questionnaire item numbers, and IBM card and column number.

Measurement Hypotheses

H-1: There will be positive correlations among the ABS:IE, Rotter IES, and the Efficacy Scale.

Rationale: The ABS:IE, Rotter IES, and the Efficacy Scale attempts to measure attitudes about the relationship between man and his environment. The scales range from a view that man is at the mercy of his environment to a view that man has complete mastery of his environment.

Instrumentation: ABS:IE, Rotter IES, and Efficacy Scales.

Analysis: Pearson Product Moment correlations.

H-2: The six levels of the ABS:IE will form a Guttman simplex for each of the groups and categories.

Rationale: According to Guttman's (1950) contiguity hypothesis, attitude levels closer to each other in the semantic scales of their definitions will be closer statistically. Previous studies, Hamersma (1973) and Kaple (1971) obtained simplex relationships.

Instrumentation: Six levels of the ABS:IE.

Analysis: The Kaiser Q^2 test.

H-3: The Rotter IES will correlate higher with the stereotypic level of the ABS:IE than any of the other levels.

Rationale: A semantic analysis of the Rotter IES indicates that it is primarily written at the stereotypic level of the Guttman paradigm.

Instrumentation: The Rotter IES and the ABS:IE.

Analysis: Pearson Product Moment correlations.

Clinical Hypotheses

H-4: On the Rotter internal-external continuum, the categories will rank in the following order (from low to high on the locus of control dimension): (a) adult education students, (b) high school students, (c) college students, and (d) doctoral candidates.

Rationale: Previous research indicates that amount of education influences the extent of control people perceive they have over their environment.

Instrumentation: ABS:IE, Rotter IES, and the amount of education item in the personal data questionnaire.

Analysis: Analysis of variance and Sheff'e post-hoc.

H-5: The standard deviation will be greater than 2.00 for the six levels of the ABS:IE throughout the categories.

Rationale: Internal-external locus of control is probably dependent on the amount of control people desire to have over their environment in relation to the amount of control they see themselves possessing. Consequently, although the criterion groups were chosen for the projected "mean score" location on the IELC continuum, it is postulated that a "range" of scores will still be obtained within each group. The review of literature indicates that the standard deviation was usually greater than 2.00 on the Rotter IES.

Instrumentation: ABS:IE.

Analysis: Chi square test of variance.

H-6: There will be no significant difference between Blacks and Whites in responding to general statements about IELC when viewed as "intention to act" (level 4). However, Blacks will score more external than Whites when answering items about their own life experiences (level 6). Therefore, the difference between scores on levels 4 and 6 will be significantly different for Blacks and Whites.

Rationale: Most Americans have been taught (ideological) that internal forces are the major determinants of success (hard work, motivation, right attitude, doing what is right). But in real life experiences, prejudice and discrimination have been "proven" to be the major determinants of Black people's success.

Instrumentation: Level 4 and 6 of the ABS:IE.

Analysis: Independent sample test on difference in analysis of variance.

H-7: There will be no significant difference between males and females in internal-external locus of control as measured by the six levels of the ABS:IE.

Rationale: Williams (1972) reported no significant differences between male and female black college students on internal-external locus of control as measured by Rotter's IES.

Instrumentation: ABS:IE.

Analysis: Analysis of variance.

CHAPTER IV

ANALYSIS OF THE DATA

The primary purpose of this study was to develop an Attitude-Behavior Scale:Internal-External (ABS:IE). Hence, most of the data were analyzed using item analysis, validity, reliability, and simplex approximation procedures. Originally, the 29 item pairs of the Rotter I-ES were semantically written at level 1 (i.e., stereotype) of the Guttman-Jordan paradigm resulting in 58 items. Through item analysis, 20 of these items were selected for a tentative attitude-behavior internal-external scale. These 20 items were then written across the six levels (i.e., stereotype through personal action) resulting in 120 items. The scale was administered to a population sample of college students and item analysis was again employed. Ten items were selected for the final ABS:IE. These 10 items were also maintained across the six levels resulting in 60 items for the final scale.

As stated in Chapter III, four population categories (adult education, high school, college, and doctoral students) were used in the present study. Each population category was divided into two groups, according to their classification, except the doctoral students. There were blacks and whites in each category. Table 20 presents demographic characteristics of the "total" research sample.

Table 20. Demographic characteristics of sample for ABS:IE study

Variables	Sample N	Sample %	Variables	Sample N	Sample %
1. Sex			2. Age		
Female	295	58.18	16 & under	17	3.35
Male	208	41.02	17 to 20	180	35.50
Error	4	0.78	21 to 30	242	47.73
			31 to 40	49	9.66
			41 & over	17	3.35
3. Education			Error	2	0.39
9 & less	20	3.94			
12 & less	81	15.97			
Some college	251	49.50	4. Income		
B.S. degree	82	16.17	$3,000 & less	55	10.84
Grad school	68	13.41	$3,001-$5,000	62	12.22
Error	5	0.98	$5,001-$8,000	84	16.56
			$8,001-$11,000	114	22.48
			$11,001 & above	192	37.86
5. Marital					
Married	149	29.38			
Single	285	56.21	6. Religion		
Divorced	41	8.08	No answers	43	8.48
Widowed	14	2.76	Catholic	120	23.66
Separated	14	2.76	Protestant	170	33.53
Error	4	0.78	Jewish	18	3.55
			Other/None	147	28.99
			Error	6	1.18
7. Race					
Black	82	16.17			
White	351	69.23			
Oriental	38	7.49			
Indian	10	1.97			
Others	15	2.96			
Error	11	2.16			

Not all the demographic data are used in the study, but are included in Table 20 to give the reader a better understanding of the nature of the sample.

Reliability of the ABS:IE

Reliability estimates for the four categories were calculated at each level (1-6) of the ABS:IE by Hoyt (1941) procedures. This method employs analysis of variance to produce a reliability coefficients equivalent to the Kuder Richardson formula 20 (Mehrens and Ebel, 1967) measure of internal consistency. The Hoyt reliability coefficients are presented in Table 21. By usual psychometric standards Table 21 indicates that the ABS:IE is reliable in terms of internal consistency. In fact, the reliabilities presented in Table 21 compare equally to those of many tests used for individual diagnosis, evaluation, and selection described by Anastasi (1968).

Table 21. Hoyt reliability estimates by groups for the final ABS:IE

	Levels					
Category	1	2	3	4	5	6
1. Adult education students	.78	.59	.55	.90	.94	.90
2. High school students	.77	.64	.65	.86	.74	.77
3. College students	.76	.81	.72	.79	.85	.78
4. Doctoral students	.74	.81	.79	.83	.80	.71
Total sample	.74	.75	.70	.88	.81	.85

Hypothesis Testing

H_1: Correlations Between the ABS:IE, the Rotter I-ES, and the Efficacy Scale

Hypothesis 1 stated that there would be positive correlations among the ABS:IE, the Rotter I-ES, and the Efficacy Scale. Table 22 depicts the actual size, direction and significance levels of the correlations obtained among these three variables. The levels of the ABS:IE (i.e., stereotypic to personal action) are presented separately. Two of the correlations were not significant at the .05 level: between Efficacy and level 4 and Efficacy and level 6.

Table 22. Actual correlations and significance levels[a] obtained between the Rotter I-ES, Efficacy Scale and ABS:IE (total sample)[b]

Levels of ABS:IE and Efficacy Scales	Rotter I-ES	Efficacy Scale
Level 1	.13 (.003)	.23 (.0005)
Level 2	.15 (.001)	.15 (.0009)
Level 3	.41 (.0005)	.15 (.0008)
Level 4	.39 (.0005)	-.003 (.95)
Level 5	.13 (.003)	-.13 (.003)
Level 6	.39 (.0005)	.02 (.68)
Efficacy	.18 (.0001)	

[a]Significant levels in parentheses.

[b]N = 502.

All correlations were obtained from the variable to level analysis carried out on the total (N = 502) sample (i.e., all groups at all levels). Examination of Table 22 indicates only two negative correlations: between levels 4 and Efficacy and level 5 and Efficacy. There were positive correlations among the ABS:IE, Rotter I-ES, and the Efficacy Scale. Hypothesis 1 was primarily supported, however, all correlations were small in size.

H_2: Level to Level Correlations and Q^2 Evaluation to Test Simplex Approximation of ABS:IE

Hypothesis 2 stated that the six levels of the ABS:IE would form a Guttman simplex for each of the groups and categories. In other words, the size of the correlation coefficient would increase with the increase in number of contiguous facets in the variables. The STATROUT computer program at Michigan State University computer center was used to produce level-to-level correlations for all categories and groups. There is no direct test of significance to interpret the simplexes obtained. However, Kaiser (1962) has developed a method whereby the obtained simplex is submitted to a procedure that arranges the correlations in the "best simplex" order, and also calculates a value that "evaluates" the obtained correlation matrix. This value has been labeled Q^2. The program also rearranges adjacent pairs of coefficients into the "best possible simplex order" and computes an "improved approximation" Q^2. Tables 23 through 27 present the correlation matrices and Q^2 values for both the original and improved matrices for groups and categories to which the ABS:IE was administered. In some cases there

are negative correlations in the simplexes, but they are not accounted for in the simplex structures, and relatively few occurred in this study. Kaiser (1962) suggested reflecting the correlations and then treating them as positive (e.g., -.30 is interpreted as .30). Sampling errors, small sample size, and other confounding variables may account for the negative correlations.

According to Hamersma (1969) a Q^2 value of .70 is accepted as reflecting a satisfactory simplex approximation according to the Hamersma 6 reversal criteria. Hamersma (1969) accepted six order reversals as the maximum a 6 x 6 matrix could contain and still be accepted as approximating a simplex. He considered a Q^2 value of .60 was minimal and that preferably a value of .70 should be used to satisfy a matrix as approximating a simplex. Examination of Tables 23 through 27 reveals that four correlation matrixes failed to exceed a value of .70 (Group 1 of category 1 and Group 2 of category 3 were substantially below the criteria value. However, Group 1 of category 2 and category 3 were .03 below the criterion value of .70 for a satisfactory simplex approximation. No specific reason can be given for these groups failing to achieve a Q^2 value of .70 or greater. However, Group 1 of category 1 was relatively small ($N = 30$) and completed a portion of the scale without supervision. It is suggested that scoring error was responsible for the relatively low Q^2 values obtained on those correlation matrices.

The total sample (i.e., all groups in all categories) obtained a Q^2 value of .90 which is clearly within the .70 or greater criterion discussed previously. Table 23 presents the correlation matrices and Q^2 value for the total sample. Hypothesis 2 (the ABS:IE will form a Guttman simplex) tended to be supported by both the total Q^2 value of .90, and the individual group Q^2 values presented in Tables 23 through 27. The simplex structure obtained in this study also indicates construct validity.

Table 23. Correlation matrices and Q^2 values for original and improved simplex approximation, all categories and groups

Original Simplex Matrix							
Stereo	1	---					Q^2 = .90
Norm	2	.64	---				
Moral	3	.21	.28	---			
Hypo	4	.01	.08	.63	---		
Feeling	5	.20	.15	.28	.58	---	
Action	6	.01	.08	.58	.87	.68	---
		1	2	3	4	5	6
Improved Simplex Matrix							
Stereo	1	---					Q^2 = .92
Norm	2	.64	---				
Moral	3	.21	.29	---			
Hypo	4	.21	.15	.29	---		
Feeling	5	.01	.08	.64	.68	---	
Action	6	.01	.08	.58	.58	.87	---
		1	2	3	4	5	6

Table 24. Correlation matrices and Q^2 values for original and improved simplex approximation, adult education sample

Original Simplex Matrix Category 1 Group 1							
Stereo	1	---					Q^2 = .83
Norm	2	.69	---				
Moral	3	.55	.51	---			
Hypo	4	.62	.41	.62	---		
Feeling	5	.23	.10	.12	.42	---	
Action	6	.52	.26	.41	.63	.45	---
		1	2	3	4	5	6
Improved Simplex Matrix Category 1 Group 1							
Stereo	1	---					Q^2 = .97
Norm	2	.51	---				
Moral	3	.69	.55	---			
Hypo	4	.41	.62	.62	---		
Feeling	5	.26	.41	.52	.63	---	
Action	6	.10	.12	.23	.42	.45	---
		1	2	3	4	5	6
Original Simplex Matrix Category 1 Group 2							
Stereo	1	---					Q^2 = .31
Norm	2	.70	---				
Moral	3	.35	.42	---			
Hypo	4	.40	.59	.64	---		
Feeling	5	.02	.13	.07	.15	---	
Action	6	.52	.50	.67	.49	.00	---
		1	2	3	4	5	6

Table 24--Continued

Improved Simplex Matrix Category 1 Group 2							
Stereo	1	---					Q^2 = .84
Norm	2	.13	---				
Moral	3	.15	.59	---			
Hypo	4	.07	.42	.64	---		
Feeling	5	.02	.70	.40	.35	---	
Action	6	.00	.50	.79	.67	.52	---
		1	2	3	4	5	6
Original Simplex Matrix Category 1: Groups 1 and 2 Combined							
Stereo	1	---					Q^2 = .74
Norm	2	.68	---				
Moral	3	.45	.46	---			
Hypo	4	.51	.51	.63	---		
Feeling	5	.14	.10	.04	.19	---	
Action	6	.51	.37	.51	.70	.30	---
		1	2	3	4	5	6
Improved Simplex Matrix Category 1: Groups 1 and 2 Combined							
Stereo	1	---					Q^2 = .96
Norm	2	.46	---				
Moral	3	.45	.68	---			
Hypo	4	.63	.51	.51	---		
Feeling	5	.51	.37	.51	.70	---	
Action	6	.04	.10	.14	.19	.30	---
		1	2	3	4	5	6

Table 25. Correlation matrices and Q^2 values for original and improved simplex approximation, high school sample

Original Simplex Matrix Category 2 Group 1							
Stereo	1	---					Q^2 = .67
Norm	2	.33	---				
Moral	3	.15	.00	---			
Hypo	4	.18	.32	.39	---		
Feeling	5	.15	.35	.44	.93	---	
Action	6	.22	.34	.56	.86	.93	---
		1	2	3	4	5	6
Improved Simplex Matrix Category 2 Group 1							
Stereo	1	---					Q^2 = .83
Norm	2	.33	---				
Moral	3	.32	.18	---			
Hypo	4	.35	.15	.93	---		
Feeling	5	.34	.22	.86	.93	---	
Action	6	.00	.15	.39	.44	.56	---
		1	2	3	4	5	6
Original Matrix Category 2 Group 2							
Stereo	1	---					Q^2 = .84
Norm	2	.73	---				
Moral	3	.42	.33	---			
Hypo	4	.46	.49	.77	---		
Feeling	5	.10	.03	.37	.50	---	
Action	6	.22	.26	.68	.66	.30	---
		1	2	3	4	5	6

Table 25--Continued

Improved Simplex Matrix Category 2 Group 2							
Stereo	1	---					Q^2 = .94
Norm	2	.73	---				
Moral	3	.49	.46	---			
Hypo	4	.33	.42	.77	---		
Feeling	5	.26	.22	.66	.68	---	
Action	6	.03	.10	.50	.37	.35	---
		1	2	3	4	5	6
Original Simplex Matrix Category 2: Groups 1 and 2 Combined							
Stereo	1	---					Q^2 = .67
Norm	2	.48	---				
Moral	3	.03	.00	---			
Hypo	4	.16	.26	.61	---		
Feeling	5	.24	.37	.52	.89	---	
Action	6	.23	.38	.66	.89	.87	---
		1	2	3	4	5	6
Improved Simplex Matrix Category 2: Groups 1 and 2 Combined							
Stereo	1	---					Q^2 = .80
Norm	2	.48	---				
Moral	3	.37	.24	---			
Hypo	4	.33	.23	.87	---		
Feeling	5	.26	.16	.89	.89	---	
Action	6	.00	.03	.52	.66	.61	---
		1	2	3	4	5	6

Table 26. Correlation matrices and Q^2 value for original and improved simplex approximation, college sample

Original Simplex Matrix Category 3 Group 1							
Stereo	1	---					Q^2 = .86
Norm	2	.66	---				
Moral	3	.25	.23	---			
Hypo	4	.16	.14	.60	---		
Feeling	5	.00	.00	.20	.52	---	
Action	6	.17	.21	.48	.78	.50	---
		1	2	3	4	5	6
Improved Simplex Matrix Category 3 Group 1							
Stereo	1	---					Q^2 = .91
Norm	2	.66	---				
Moral	3	.25	.23	---			
Hypo	4	.17	.21	.48	---		
Feeling	5	.16	.14	.60	.78	---	
Action	6	.00	.02	.20	.50	.52	---
		1	2	3	4	5	6
Original Simplex Matrix Category 3 Group 2							
Stereo	1	---					Q^2 = .51
Norm	2	.68	---				
Moral	3	.00	.14	---			
Hypo	4	.40	.23	.61	---		
Feeling	5	.55	.34	.27	.80	---	
Action	6	.43	.26	.57	.91	.78	---
		1	2	3	4	5	6

Table 26--Continued

Improved Simplex Matrix Category 3 Group 2							
Stereo	1	---					Q^2 = .68
Norm	2	.68	---				
Moral	3	.55	.34	---			
Hypo	4	.43	.26	.78	---		
Feeling	5	.40	.23	.80	.91	---	
Action	6	.00	.14	.29	.57	.61	---
		1	2	3	4	5	6
Original Simplex Matrix Category 3 Groups 1 and 2							
Stereo	1	---					Q^2 = .81
Norm	2	.67	---				
Moral	3	.15	.21	---			
Hypo	4	.10	.00	.62	---		
Feeling	5	.25	.14	.29	.71	---	
Action	6	.09	.02	.55	.87	.68	---
		1	2	3	4	5	6
Improved Simplex Matrix Category 3 Groups 1 and 2							
Stereo	1	---					Q^2 = .85
Norm	2	.67	---				
Moral	3	.21	.15	---			
Hypo	4	.14	.25	.29	---		
Feeling	5	.02	.09	.59	.68	---	
Action	6	.00	.10	.62	.71	.87	---
		1	2	3	4	5	6

Table 27. Correlation matrices and Q^2 values for original and improved simplex approximation, doctoral sample and education 483

Original Simplex Matrix Category 4							
Stereo	1	---					Q^2 = .68
Norm	2	.77	---				
Moral	3	.41	.56	---			
Hypo	4	.27	.47	.80	---		
Feeling	5	.17	.01	.27	.24	---	
Action	6	.45	.55	.45	.82	.26	---
		1	2	3	4	5	6
Improved Simplex Matrix Category 4							
Stereo	1	---					Q^2 = .89
Norm	2	.77	---				
Moral	3	.55	.45	---			
Hypo	4	.56	.41	.75	---		
Feeling	5	.47	.27	.82	8.09	---	
Action	6	.01	.17	.26	2.76	.24	---
		1	2	3	4	5	6
Original Simplex Matrix Ed. 483							
Stereo	1	---					Q^2 = .57
Norm	2	.24	---				
Moral	3	.00	.32	---			
Hypo	4	.07	.15	.92	---		
Feeling	5	.68	.20	.15	.00	---	
Action	6	.03	.34	.85	.89	.19	---
		1	2	3	4	5	6

Table 27--Continued

Improved Simplex Matrix Ed. 483							
Stereo	1	---					Q^2 = .63
Norm	2	.07	---				
Moral	3	.24	.15	---			
Hypo	4	.03	.89	.34	---		
Feeling	5	.00	.92	.32	.85	---	
Action	6	.68	.00	.20	.19	.15	---
		1	2	3	4	5	6

H_3: Correlation Between Rotter I-ES and the Six Levels of the ABS:IE

Hypothesis 3 stated that the Rotter I-ES would correlate higher with the stereotypic level than any other level of the ABS:IE. This hypothesis was not supported. In fact, the Rotter I-ES correlated lower with the stereotypic than any other level of the ABS:IE. The Rotter I-ES correlated highest (Table 22) with levels 3, 4, and 6, although there is not much difference among the correlations of the ABS:IE levels with the Rotter I-ES. The six levels correlated with the Rotter I-ES in the following order from high to low: (a) moral evaluation, (b) personal action and hypothetical action, (c) societal norm, (d) personal feeling and (e) stereotype.

Jordan (1968) suggests that most attitude scales are written at the stereotypic level of the Guttman-Jordan paradigm. Hence, it was hypothesized that the Rotter I-ES would correlate higher with the stereotypic level of the ABS:IE, but the hypothesis was not supported.

H_4: Ranking of Sample Categories on IELC Continuum

Hypothesis 4 states that the sample categories would rank in the following order (from low to high in internal control on the IELC dimension): (a) adult education students, (b) high school students, (c) college students, and (d) doctoral candidates. Table 28 presents the mean scores for the ABS:IE, Rotter I-E, and the Efficacy measure in the present study.

Table 28. Means for the sample categories on the ABS:IE, Rotter I-E and Efficacy Scales

	Variable	Adult Education Mean	High School Mean	College Mean	Ph.D. Mean
Attitude Behavior	1. Stereo	25.74	26.39	26.47	25.41
	2. Norm	25.57	25.60	25.71	25.28
	3. Moral eval.	28.72	27.18	28.42	27.68
	4. Hypo.	28.23	24.60	29.35	30.41
	5. Feeling	28.57	25.47	29.62	31.71
	6. Action	27.27	23.99	28.23	28.83
Value	7. Efficacy	23.05	24.18	24.30	22.97
I-E	8. Rotter I-E	36.00	25.25	35.98	35.91
	Sample size	66	66	306	63

Analysis of variance (ANOVA) was used to determine whether the apparent differences in category means in Table 28 indicate the presence of true category differences. Separate one-way ANOVAs were computed for

each ABS:IE level, and for the Rotter I-E and Efficacy Scales since interest in these individual measures was greater than interest in category differences as a whole. The analyses (Table 29) resulted in nonsignificant F-ratios on levels 1, 2, and 3 of the ABS:IE and the Rotter I-E; however, differences among sample categories were found for levels 4, 5, and 6 of the ABS:IE and the Efficacy Scale.

The Scheffe post hoc procedure was used to uncover the sample categories which were contributing to the significant results found on levels 4, 5, and 6, and on Efficacy. Two categories were tested at a time according to Scheffe's formula:

$$\left| \frac{\bar{x}_j - \bar{x}_{j'}}{\sqrt{MS_W \left(\frac{1}{n_j} + \frac{1}{n_{j'}}\right)}} \right| \geq S$$

where $S = \sqrt{3 \, F_{.95, 3, 498}}$ for the .05 level of significance. The four sample categories: (a) adult education, (b) high school, (c) college, and (d) doctoral candidates were compared. All possible pairs of differences between the sample category means for ABS:IE levels 4, 5, and 6 were of interest. Table 30 presents the pairwise comparisons of interest.

Any Scheffe ratio which exceeded $S = \sqrt{3 \, F_{.95, 3, 498}} = \sqrt{3(2.62)} = 2.80$ in size (i.e., if the ratio were above 2.80 or below -2.80) led to the conclusion that a difference existed between the two groups compared.

Table 29. Six ANOVA summary tables for sample categories on the ABS:IE, Efficacy and Rotter I-ES

Levels	Source of Variation	Sum of Squares	df	MS	F
1	Between groups	61.76	3	20.59	1.16
	Within groups	8,949.76	498	17.97	
2	Between groups	5.06	3	1.69	0.09
	Within groups	8,830.72	498	17.73	
3	Between groups	100.70	3	33.57	1.84
	Within groups	9,065.81	498	18.20	
4	Between groups	1,387.88	3	462.63	13.20*
	Within groups	17,444.27	498	35.03	
5	Between groups	1,399.73	3	466.58	10.57*
	Within groups	21,990.78	498	44.16	
6	Between groups	1,029.64	3	343.21	10.35*
	Within groups	16,508.73	498	33.15	
Efficacy	Between groups	111.89	3	37.30	2.78
	Within groups	6,672.18	498	13.40	
Rotter IE	Between groups	22.29	3	7.43	0.42
	Within groups	8,726.33	498	17.52	

*Significant at the .05 level.

Table 30. Categories and pairwise comparisons of interest for levels 4, 5, and 6 of the ABS:IE

Categories	Estimate of Comparison	
1 Adult Education ($\bar{X}_1$)	$\bar{X}_1 - \bar{X}_2$	$\bar{X}_2 - \bar{X}_3$
2 High School ($\bar{X}_2$)	$\bar{X}_1 - \bar{X}_3$	$\bar{X}_2 - \bar{X}_4$
3 College ($\bar{X}_3$)	$\bar{X}_1 - \bar{X}_4$	$\bar{X}_3 - \bar{X}_4$
4 Doctoral ($\bar{X}_4$)		

Table 31 presents the Scheffe ratio values for each pairwise comparison. High school students are significantly less internal than college students and doctoral students on the hypothetical level, the personal feeling level and the personal action level of the ABS:IE. In addition, high school students are significantly less internal than adult education students on both the hypothetical and personal action levels of the ABS:IE. No other statistically significant category differences were found for the ABS:IE and the significance found for the Efficacy Scale could not be identified with any simple comparison of only two groups. Thus the IELC ordering of sample categories that was hypothesized is largely unsupported by the data. Reversals in the hypothesized ordering and the absence of category differences occur.

Table 31. Pairwise comparison and Scheffe' value on levels 4, 5, and 6 for the ABS:IE study

Hypothetical Level (4)	
Pairwise Comparison	Scheffe' Values
Adult Education vs High School	3.52*
Adult Education vs College	-1.39
Adult Education vs Doctorate	-2.09
High School vs College	-5.91*
High School vs Doctorate	-5.57*
College vs Doctorate	-1.29
Personal Feeling Level (5)	
Pairwise Comparison	Scheffe' Values
Adult Education vs High School	2.68
Adult Education vs College	-1.16
Adult Education vs Doctorate	-2.68
High School vs College	-4.60*
High School vs Doctorate	-5.33*
College vs Doctorate	-2.27
Personal Action Level (6)	
Pairwise Comparison	Scheffe' Values
Adult Education vs High School	3.27*
Adult Education vs College	-1.23
Adult Education vs Doctorate	-1.54
High School vs College	-5.43*
High School vs. Doctorate	-4.77*
College vs Doctorate	-0.75

*Significant at the .05 level.

H_5: Standard Deviation Within the Four Categories

Hypothesis 5 stated that the standard deviations would be greater than 2.00 for the six levels of the ABS:IE throughout the four categories. Although the criterion categories were chosen for their projected "mean score" location on the IELC continuum, it was postulated that a range of scores with a standard deviation greater than 2.00 would be obtained within each category. Tables 32 through 36 present the sample sizes, means, and standard deviation values for the categories on the ABS:IE, Rotter I-E, and the Efficacy Scales. Because the data are approximately normal, the chi square test of variance was used to test this hypothesis. It is apparent that the standard deviations are greater than 2.00 for all categories on the six levels of the ABS:IE, Rotter I-E and the Efficacy Scales.

Table 32. Sample sizes, means and standard deviation for total sample on the ABS:IE, Rotter I-E and Efficacy Scales.

	Variables	N	Mean	SD
Attitude Behavior	1. Stereotype	502	26.16	4.24
	2. Norm	502	25.60	6.71
	3. Moral evaluation	502	28.16	4.09
	4. Hypothetical	502	28.69	6.00
	5. Feeling	502	29.26	6.71
	6. Action	502	27.58	5.79
Value	7. Efficacy	502	23.86	3.52
I-E	8. Rotter I-E	502	35.77	3.87

Table 33. Sample sizes, means and standard deviation, adult education students on the ABS:IE, Rotter I-E and Efficacy Scales (Category 1)

	Variables	Group 1			Group 2			Group 1 and 2		
		N	M	SD	N	M	SD	N	M	SD
Attitude Behavior	1. Stereotype	31	25.74	5.24	35	25.74	5.03	66	25.74	5.09
	2. Norm	31	24.83	3.76	35	26.75	4.24	66	25.57	4.78
	3. Moral	31	28.55	5.16	35	28.87	4.22	66	28.72	4.65
	4. Hypoth.	31	27.39	5.66	35	28.98	4.68	66	28.23	5.18
	5. Feeling	31	28.37	5.62	35	28.75	3.96	66	28.57	4.78
	6. Action	31	26.55	5.86	35	27.91	3.94	66	27.27	4.94
Value	7. Efficacy	31	22.32	3.75	35	23.69	3.91	66	23.05	3.87
I-E	8. I-ES	31	35.57	4.24	35	36.39	3.32	66	36.00	3.78

Table 34. Sample sizes, means and standard deviation, high school students on the ABS:IE, Rotter I-E and Efficacy Scales (Category 2)

	Variables	Group 1			Group 2			Group 1 and 2		
		N	M	SD	N	M	SD	N	M	SD
Attitude Behavior	1. Stereotype	36	27.18	4.45	30	25.31	3.11	66	26.39	4.02
	2. Norm	36	26.47	3.63	30	24.41	2.74	66	25.60	3.42
	3. Moral	36	25.92	3.19	30	28.89	3.81	66	27.18	3.75
	4. Hypoth.	36	20.79	6.41	30	29.79	4.27	66	24.60	7.14
	5. Feeling	36	20.97	8.93	30	31.58	4.90	66	25.47	9.13
	6. Action	36	19.71	5.97	30	29.79	4.08	66	23.99	7.24
Value	7. Efficacy	36	24.41	3.96	30	23.86	2.56	66	24.18	3.43
I-E	8. I-ES	36	34.74	4.52	30	35.95	2.59	66	35.25	3.84

Table 35. Sample size, means and standard deviation, college students on the ABS:IE, Rotter I-E and Efficacy Scales (Category 3)

	Variables	Group 1			Group 2			Groups 1 and 2		
		N	M	SD	N	M	SD	N	M	SD
Attitude Behavior	1 Stereotype	199	26.42	4.01	107	26.56	4.16	306	26.47	4.05
	2 Norm	199	25.91	4.01	107	25.35	3.87	306	25.71	3.96
	3 Moral	199	29.21	3.77	107	26.96	3.75	306	28.14	3.91
	4 Hypoth	199	30.83	4.32	107	26.65	6.94	306	29.35	5.75
	5 Feeling	199	30.86	5.06	107	27.34	8.37	306	29.62	6.63
	6 Action	199	29.60	4.50	107	25.72	6.62	306	28.23	5.65
Value	7 Efficacy	199	29.60	4.50	107	25.72	6.62	306	28.23	5.65
I-E	8 I-ES	199	36.70	3.68	107	34.65	3.66	306	35.88	3.80

Table 36. Size, means and standard deviation, doctoral students on the ABS:IE, Rotter I-E, and Efficacy Scales (Category 4)

	Variable	N	Mean	SD
Attitude Behavior	1. Stereotype	63	25.41	3.956
	2. Norm	63	25.28	4.55
	3. Moral evaluation	63	27.68	4.13
	4. Hypothetical	63	30.41	5.01
	5. Feeling	63	31.71	4.28
	6. Action	63	28.83	4.13
Value	7. Efficacy	63	22.97	3.78
I-E	8. Rotter I-ES	63	35.91	3.91

H_6: Scores on Levels 4 and 6 for Blacks and Whites

Hypothesis 6 states that there will be no significant differences between Blacks' and Whites' scores on level 4 of the ABS:IE, but there will be a significant race difference on level 6. Figure 4 presents a graphic representation of the IELC mean scores for Blacks and Whites. A small ordinal interaction is depicted between levels 4, 6, and the races: Blacks' and Whites' scores are closer in value on level 4 than they are on level 6. An independent sample test on differences in analysis of variance was employed to determine whether this type of interaction was statistically significant. The test (reported in Table 37) shows no statistical evidence of such an interaction.

Table 37. Means, standard deviations, and independent sample test in ANOVA for Blacks and Whites on levels 4 and 6

Variable	N	Means	S.D.
Blacks	80	1.55	3.98
Whites	347	1.06	2.78

Independent Sample Test in Analysis of Variance

Source	df	Sum of Squares	Mean Squares	F
Between groups	1	15.78	15.578	1.69*
Within groups	425	3,921.11	9.23	

*Not significant at the .05 level.

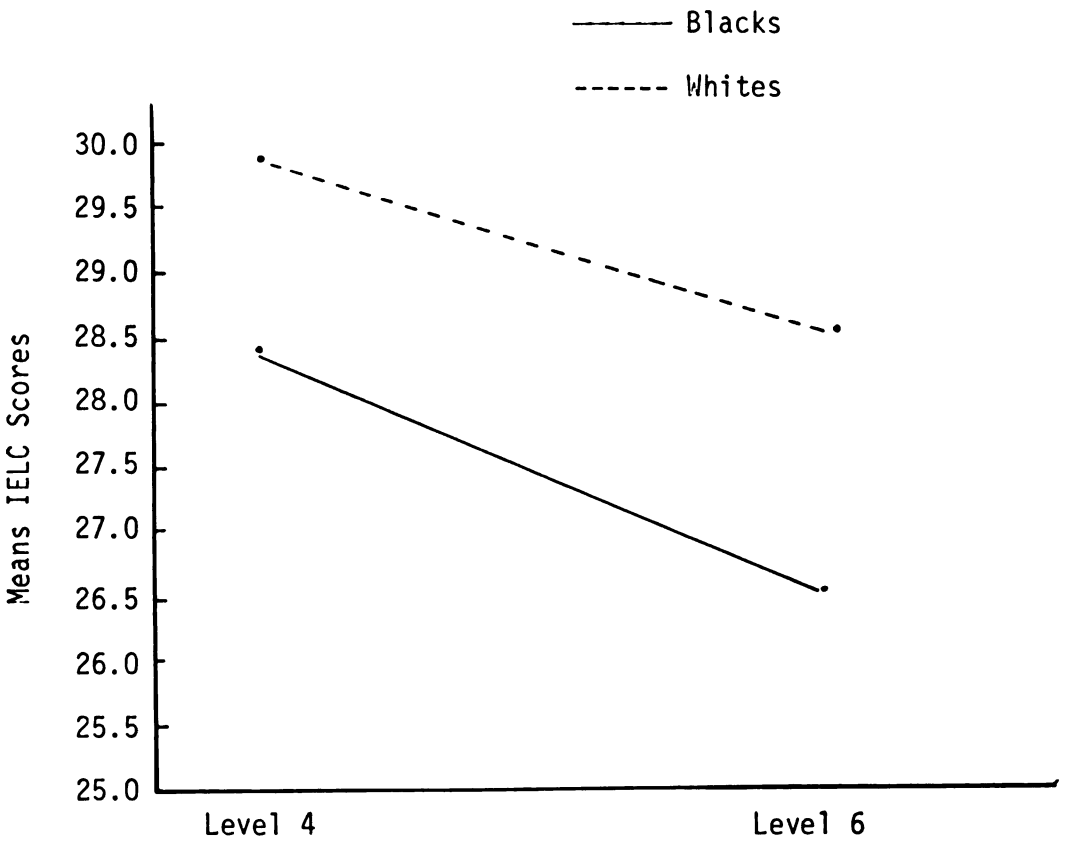

Figure 4. Graphic representation of the mean IELC scores for Blacks and Whites on levels 4 and 6.

H_7: Sex and Internal-External Locus of Control

Hypothesis 7 stated there would be no significant difference between males and females in IELC as measured by the ABS:IE. Analysis of variance indicated no significant difference (.05 level) between males and females on levels 1 and 3 of the ABS:IE. However, a significant sex difference was found on levels 2, 4, 5, and 6 of the ABS:IE. Table 38 presents the ANOVA summary tables for the sex variables on the ABS:IE. No significant sex differences were found on IELC as measured by Rotter I-E and the Efficacy Scale (see Table 39). The ANOVA summary tables were calculated using the total sample (N = 502). In summary, no significant sex difference in IELC was found when measured by Efficacy, Rotter I-E, and levels 1 and 3 of the ABS:IE. However, a significant sex difference was found on levels 2, 4, 5, and 6 of the ABS:IE. No precise conclusion can be drawn about hypothesis 7, but statistically, the data tend not to support the hypothesis.

Females scored significantly more internal than males of levels 4, 5, and 6. Males scored significantly more internal on level 2 of the ABS:IE. Table 40 presents the mean scores for males and females for the ABS:IE, Efficacy, and the Rotter I-E Scales.

Table 38. Six ANOVA summary tables for the sex variable on the ABS:IE

Levels	Source of Variation	Sum of Squares	df	MS	F
1	Between groups	47,27	1	48.28	2.69
	Within groups	8,963.24	500	17.93	
2	Between groups	117.02	1	117.02	6.71*
	Within groups	8,718.76	500	17.44	
3	Between groups	67.60	1	67.60	3.71
	Within groups	9,098.93	500	18.20	
4	Between groups	548.24	1	548.24	15.00*
	Within groups	18,283.91	500	36.57	
5	Between groups	1,160.95	1	1,160.95	26.11*
	Within groups	22,229.57	500	44.46	
6	Between groups	818.47	1	818.47	24.48*
	Within groups	16,719.91	500	33.44	

*Significant at the .05 level.

Table 39. Analysis of variance and significant level for the sex variable on the Efficacy and Rotter I-E Scales

Scales	Source of Variation	Sum of Squares	df	MS	F	Sig.
Efficacy	Between groups	17.48	1	17.48	1.29	.26
	Within groups	6,766.52	500	13.53		
Rotter I-E	Between groups	0.28	1	0.28	0.02	.90
	Within groups	8,748.05	500	17.50		

Table 40. Means scores for males and females on the ABS:IE, Rotter I-E and Efficacy Scales

	Variable	Means	
		Males	Females
	1. Stereotype	25.90	26.54
	2. Norm	25.14	26.15
	3. Moral evaluation	28.42	27.65
	4. Hypothetical	29.51	27.33
	5. Feeling	30.47	27.30
	6. Action	28.59	25.93
Value	7. Efficacy	23.65	24.04
I-E	8. Rotter I-ES	35.68	35.72

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The first four chapters dealt with the nature of the problem, purpose, theoretical framework, methodology, analysis of data, and the testing of hypotheses. The present chapter will attempt to put the first four chapters in perspective. Chapter V is divided into three parts: (a) a brief summary of the study, (b) discussion and conclusion, and (c) limitation and recommendations.

Summary of the Study

Purpose

The primary objectives of this study were to (a) replicate the six-level attitude scale construction of Jordan using Guttman facet design and analysis, and to test that construction; (b) to develop, according to the Guttman-Jordan formulations, an attitude-behavior, internal-external locus of control scale ABS-IE; (c) to determine the relationships between specific levels of the ABS:IE with predictor variables; and (d) to determine the relationship between the levels of the ABS:IE, the Rotter I-ES, and the Efficacy Scale.

ABS:IE Analysis

The content of the ABS:IE Scale was selected by item analysis from the Rotter I-ES and written across the five facets and six levels of the Guttman-Jordan paradigm. Guttman facet design and analysis provided the semantic, logical a priori method by which the ABS:IE was constructed. Construct validity was assumed since a simplex approximation was produced. Content validity was assumed since the content was taken directly from the Rotter I-ES and since facet theory was used to guide the ABS:IE item construction. Predictive validity was assessed by the "known group" method along the external-internal continuum. Reliability was calculated by the Hoyt reliability method, which indicated high reliability for the ABS:IE.

Literature

Rotter (1966) described individuals as internals who maintain a generalized expectancy that the reinforcements they receive are determined by factors under their personal control (skill, ability, etc.). Persons who believe that forces beyond their personal control (fate, luck, chance, etc.) are the determinant factors in the occurrence of reinforcements are referred to as externals. Research has found that internal-external locus of control (IELC) is measurable as a personality characteristic. Research with the IELC dimension has stimulated diverse interest of persuasions that the research is growing in new and different directions. Many theoretical interpretations of locus of control are presented in the literature, and substantive knowledge about locus of control has been generated. However, there has been inconclusive and

contradictory evidence about the predictor variables used in previous IELC research. The scales prior to this research were not developed by the multidimensional semantic facet theory proposed by Guttman (1959).

Methodology

Guttman (1950) defined an attitude as "a delimited totality of behavior with respect to something." In 1959 Guttman selected three relevant facets and presented their respective elements in an attitude paradigm. These facets and elements were then related to four levels: stereotype, norm, hypothetical interaction, and personal action. Jordan (1968) accepted the three facets of Guttman, but added two new ones to produce a five facet paradigm. These facets have six corresponding levels: societal stereotype, societal norm, moral evaluation, hypothetical interaction, personal feeling, and personal action. Jordan placed more emphasis on the affective and conative elements of attitude-behavior. The present study used the six level approach of Jordan to construct the ABS:IE.

Procedures

The original 58 item attitude-behavior scale was administered to students living in two dormitories at Michigan State University. Inter-item and item-to-total correlation matrices were calculated. The 20 items which correlated highest with the total scores were selected for the construction of an initial ABS:IE across the six levels of the Guttman-Jordan paradigm. The scale was administered to students in the College of Education at Michigan State University.

Again, inter-item and item-to-total correlation matrices were calculated. The ten "best" items were chosen for inclusion in the final ABS:IE Scale (Appendix E). These ten items were then written across the six ABS:IE levels.

Four populations were involved in the study: (a) adult education students, (b) high school students, (c) college students, and (d) doctoral students. The scales (ABS:IE, Rotter I-ES, and Efficacy Scale) were group administered in the above order.

Research Findings

There were positive relations among the Rotter I-ES, the ABS:IE, and the Efficacy Scales. However, the relationship (correlationals) were small in size for all the ABS:IE levels. Internal reliability of the ABS:IE was supported by the Hoyt (1941) procedures.

The attitude data for eight of the twelve samples did approximate a Guttman simplex. The Q^2 values for the group and category totals were greater than Hamersma's (1969) .70 criterion Q^2 value required for an acceptable simplex approximation. The Q^2 values of the ABS:IE suggest construct validity.

The Rotter I-ES correlated lower with the stereotypic level of the ABS:IE than any other level. It correlated highest with levels 3, 4, and 6.

The population samples ranked in the following order on the IELC dimension from external to internal: (a) high school students, (b) adult education students, (c) college students, and (d) doctoral students.

The IELC ordering of sample categories that was hypothesized was largely supported. However a reversal in the hypothesized orderings occurred and category differences were absent on some ABS:IE levels.

The standard deviations for all categories and groups were greater than 2, although homogeneous groups were chosen for the population.

Blacks tended to score significantly more external than Whites on levels 4 and 6; however, Blacks' and Whites' scores were closer in value on level 4 than they were on level 6.

There was a statistically significant difference (.05) between females and males on the IELC continuum as measured by norm, hypothetical, personal feeling, and personal action levels of the ABS:IE. No significant differences were found between females and males on the Rotter I-ES, the Efficacy Scale, and stereotype and moral evaluation levels of the ABS:IE. Females scored more internal on levels 4, 5, and 6 of the ABS:IE.

Discussion and Conclusions

The discussion and conclusion portion of this chapter is divided into three parts: (a) a general discussion about the overall study, (b) discussion of hypothesis testing, and (c) limitations and recommendations.

Discussion of the Results

Most of the data were analyzed using test construction procedures, since the primary aim of the research was test construction. Application of Guttman's facet analysis to the IELC construct generated five content facets. The present study plus Gurin et al. (1969) suggests that IELC is multidimensional in nature. Recent studies by Guttentag (1972), MacDonald and Tseng (1971), and Minton (1972), all confirm the multidimensionality of the Rotter I-ES. However, Rotter (1966) reported the scale to be a unidimensional instrument.

The methodological and theoretical findings (simplex order, reliability, and validity) suggest that the ABS:IE can serve as a useful research instrument.

Inter-item analysis and item-to-total analysis were the main procedures used to select the "best" items for the final ABS:IE. Item content is also important in item selection to assure a wide range in the item content of the construct under consideration. The content of ABS:IE covers a wide range of IELC concepts (see Table 13), hence each attitude content was not measuring the same thing. The ten items selected for the final ABS:IE came from all the content facets of the Rotter attitude domain. For the final ABS:IE, the subscale correlations of the individual items with the total scale scores were .40 and above.

The moral evaluation level (level 3) of the ABS:IE correlated highest with the Rotter I-ES. It was first thought that level 3 would be one of the weaker levels of the ABS:IE because this level was the most difficult to write on the IELC dimension. It is not clear at this

point if the respondents were "placing" a moral evaluation on the content of the items or just indicating that the items were "right" or "wrong" as factual statements. In any event, there was a high positive correlation between the moral evaluation level and the Rotter I-ES.

Previous attitude-behavior studies have had "personal" attitude-objects as subjects (ethnic groups, drug users, mental retardates) toward whom the respondents would indicate their attitude. In the present study there is no direct "personal" subject: the attitude object is "conceptual" in nature. The ABS:IE attempts to measure one's philosophy of life in terms of his beliefs about his and other people's control over reinforcement.

Previous attitude-behavior scales employed four choices for each item at level 6. These were: (a) no experience, (b) no, (c) uncertain, and (d) yes. Kaple (1971) asked the respondents not to answer items on level 6 unless they had had experiences or contact with the "attitude-object." In the present study the regular choices were used at level 6: (a) strongly agree, (b) agree, (c) disagree, and (d) strongly disagree, because everyone has had experiences receiving reinforcements. The effect, if any, of this slight difference in semantic structure is not known. The choice of "undecided" was not added as one of the alternatives. It was projected that many people would mark "undecided" because it is a noncommital answer. It was projected that people would take the "middle of the roal" or "easy way out" if they have to commit themselves to a particular position, although they may have definite attitudes or opinions on the subject.

Hypotheses Discussion

The following is a discussion of the results of hypothesis testing.

H-1: Pearson product moment correlations were used to test the hypothesis that a positive correlation existed among the ABS:IE, the Rotter I-ES, and the Efficacy Scale. The results indicated that positive correlations do exist among several levels of the scales, although they were small in size. There were negative correlations between levels 4 and 5 and the Efficacy Scale. Each of these scales attempts to measure attitudes concerning relationships between the respondent and his environment. The scales range from a view that the respondent is at the mercy of his surroundings to a view that he has complete mastery of his environment. While the three scales appear to be measuring IELC in general, they seem to be taping different aspects of IELC.

It has been suggested by Minton (1972) that IELC is a multidimensional construct. Hersh and Scheibe (1967) have called attention to the fact that locus of control scores may reflect more than a view of the world as controlling. One may view the world as controlling and cruel in nature or as controlling and kind. Levenson (1972) proposed that each facet of externality (chance, fate, powerful other) be measured separately. The different levels of the ABS:IE were designed to measure different aspects of the IELC construct. In summary, the positive relationships (correlations) among the Rotter I-ES, the ABS:IE and the Efficacy Scale can be interpreted as the ability of the

different scales to measure different aspects of the IELC. The Rotter I-ES and the Efficacy Scale has already been validated in the literature as measures of IELC. The small correlation between the scales suggest that they are measuring different aspects of the IELC construct. Which aspect each scale measures needs to be resolved by further research.

H-2: The Guttman simplex approximation hypothesis was confirmed by the Kaiser Q^2. Hamersma (1969) suggested a Q^2 value of .70 or above as a satisfactory level to conclude that data has reached the simplex approximation. The possible range of scores is 0.00 to 1.00. Eight of the twelve matrices in this study exceeded the .70 Q^2 value. Two of the four groups which had Q^2 values below .70 were below by only .03. An interpretation, based on Guttman's (1950) "contiguity hypothesis," is that attitude levels closer to each other in their semantic scales or their definitions will also be closer statistically. The relationships between each of the levels of the ABS:IE is ordered on a continuum of increasing subject-object strength of relationships. The simplex approximation suggests that the structure of the ABS:IE is as postulated, which indicates construct validity of the scale.

H-3: The Rotter I-ES did <u>not</u> correlate higher with the stereotypic level of the ABS:IE than with the other levels. Hence, H-3 was not supported. The correlation between the Rotter I-E and the stereotypic level was less than the Rotter I-ES correlations with the other levels of the ABS:IE. Jordan (1968) suggested that most scales are written at the stereotypic level of the Guttman-Jordan paradigm. Hence it was hypothesized in the present study that the Rotter I-ES

would correlate higher with the stereotypic level than the other levels. Also, a semantic examination of the Rotter I-ES suggested it to be written at the stereotypic level. It has been suggested in recent years (Guttentag, 1972; MacDonald and Tseng, 1971; and Minton, 1972) that the Rotter I-ES is a multidimensional scale. It is postulated that the multidimensionality of the Rotter I-ES attributed to it low correlation with the ABS:IE. The correlations between Rotter I-ES and levels 3, 4, and 6 ranged from .39 to .41, while the correlations for levels 1, 2, and 5 were lower, ranging from .13 to .18.

H-4: Analysis of variance and Scheffe's post-hoc procedures were used to analyze how the four subject population categories would rank on the IELC dimension. The results indicate that the categories rank from low to high, in the following order along the IELC continuum (from external to internal): high school, adult education, college, and doctoral students. Amount of formal education seems to influence the extent of control people perceive they have over their environment. However, age and experience also appears to influence IELC. The adult education students scored more internal than high school students although the high school students had received more formal education. It is suggested that age and more life experiences may account for the difference.

H-5: The chi-square test was used to test for difference between the six levels of the ABS:IE throughout the population categories. The hypothesis that the standard deviations would be greater than 2.00 for the six levels throughout the categories was supported.

Although the criterion groups were chosen for their projected "mean score" location on the IELC continuum, a sizeable spread in socres was still obtained within each category.

It is suggested that one explanation for the spread in scores within categories may be that the amount of internal or external control people perceive themselves as having is dependent on the amount of control they desire over their environment. For example, a high school teacher who had a desire to be chairman of a college department, but was not accepted into graduate school may view the environment as very controlling and hence score more externally on the ABS:IE. However, a high school teacher who had always wanted to be a high school teacher and is happy with his job, may score very internally on the ABS:IE. The IELC construct ranges from very external to very internal, and the range of scores varies along that continuum for most groups.

H-6: A statistically significant difference was found between Blacks and Whites on the hypothetical and personal action levels of the ABS:IE. Hence the hypothesis that no significant difference will occur between the races on the hypothetical level was not supported. However, Blacks' and Whites' scores were closer on the hypothetical level than they were on the personal action level. This tends to suggest that Blacks and Whites respond somewhat alike when responding to general statements about IELC when viewed as "intention to act." However, there is greater difference in the responses of Blacks and Whites when responding to statements about personal action (see Table 37).

On other measures of IELC Blacks generally have scored more externally than Whites (Battle and Rotter, 1963; Lefcourt and Ladwig, 1965, 1966; and Scott and Phelon, 1969). These studies had small sample groups from primary segregated institutions. The ABS:IE tends to support the finding of the studies mentioned above. Gurin and Ottinger (1969) have raised serious questions as to whether it would be functional for minority groups to become more internal. They argue that internality creates support for the status quo among groups that are subject to social injustice. In real life experiences minorities find prejudice, discrimination, and other obstacles to be major determinants in the amount of reinforcement a minority group gets for its efforts.

H-7: Analysis of variance procedures produced significant (.05) differences between males and females on levels 2, 4, 5, and 6 of the ABS:IE (Table 38). No significant difference was found between males and females on the Rotter I-ES, the Efficacy Scale, and levels 1 and 3 of the ABS:IE. Williams (1972) did not find any significant sex differences in IELC as measured by the Rotter I-ES. In previous research and in the present study no sex difference was found in IELC when measured by the Rotter I-ES. However, the ABS:IE does detect a significant sex difference on four of the six levels. Table 38 contains the ANOVA data for the sex variable on the ABS:IE. Females scored more internally than males on the hypothetical, personal feeling, and personal action levels of the ABS:IE. Table 40 contains the means scores of males and females on the ABS:IE, Efficacy, and Rotter I-E Scales. Males scored more internal on the societal norm level (2) which is a cognitive level.

Females scored more internal on the hypothetical and personal feeling levels (4 and 5), which are affective levels of the ABS:IE. Females also scored significantly more internal on the personal action level (6).

The scale was administered during the height of the women's liberation movement. It is projected that the influence of this movement may have attributed to the high internal scores for women. As was pointed out in Chapter II, minority groups and women are becoming more assertive in determining their own destiny since the equal rights movement has become a power movement in the United States.

Limitations of the Study

The ABS:IE which was developed in this study is not recommended for people with less than seven years formal education or its equivalence. It is not a good instrument for children or mentally retarded individuals. During the study, the ABS:IE was administered to a remedial class in the adult education program, but the students were not literate enough to complete the scale.

Although many of the hypotheses were statistically supported, the rationale for forming the hypotheses were not "proven or disproven." The study is a correlational and methodological one, hence, it did not test "causal" relationships.

The forced choice format is used in the ABS:IE, although the scale is a multidimensional instrument. Hence, it has all the weaknesses of the forced-choice format. The forced-choice format is often projected to be more subject to social desirability response set than

are other formats. Item analysis leading to ABS:IE final set of items yielded items worded toward externality so that high external scores may be earned if the subjects have a "yes-saying" tendency. However, in this study it was felt that the forced choice format was more desirable than alternative procedures.

It should also be noted that the subjects in this study were all pursuing further formal education. The subjects seem to be striving to have greater control of their environment. The samples studied are unique subgroups of college and doctoral students (in particular). Generalization to all such college or doctoral students is not warranted on the basis of these data.

Recommendation for Further Research

An improved attitude-behavior internal-external scale could be developed by using the mapping sentence presented in Figure 3. The content of the present ABS:IE was taken from the Rotter I-ES. Some of these items have double meanings. They could be interpreted in two ways. Hence, it was difficult to semantically write some of the items across the six levels of the Guttman-Jordan paradigm. The mapping sentence presented in Figure 3 was derived from a definitional statement of IELC. This statement defines IELC as a "belief regarding the nature of causal relationship between behavior and its consequences as it might affect a variety of behavior choices in different life situations."

A larger sample size for some of the groups is recommended. There were 31 subjects from the regular adult education class (Group 2,

Category 1). There were 30 subjects from the high school senior class (Group 2, Category 2). Although these samples sizes are minimally large enough for the statistical analysis employed in this study, greater confidence could be placed in the obtained reliabilities if the two groups mentioned above had larger samples sizes. Random sampling procedures are also recommended for use in further research when possible. Although the sample selection and procedures of the present study are logical for the present study, greater confidence could be placed in samples that were randomly selected.

The present study should be replicated using other socially relevant groups believed to differ on IELC: prisoners, religious groups, etc. This would test the generalizability of the finding of the present study.

The influence of the directionality of items should be examined in future studies. For example, do positively worded items elicit different responses than negatively worded items. Similarly, do internally worded items elicit different responses than externally worded items.

As stated by Levenson (1972) our understanding and prediction of IELC might be considerably increased if each content of externality was studied separately; e.g., fate, chance, powerful others, etc.

APPENDICES

APPENDIX A

GLOSSARY

APPENDIX A

GLOSSARY[1]

Approximation--see "simplex approximation."

Attitude--"Delimited totality of behavior with respect to something" (Guttman, 1950, p. 51).

Attitude-behavior--the hyphenated term denotes that attitude is a subclass of behavior rather than an intervening variable or a "predisposition" to behavior.

Content--situation (action, feeling, comparison, circumstances) indicated in an attitude item; generally corresponds to "lateral struction."

Definitional statement--specification of characteristics proper to an item of a given Level member, typically stated in phrase or clause form.

Definitional system--ordered group of definitional statements or of the corresponding Level members; typically either the group constituting a "semantic path" or the complete group of 12 Level members in the "semantic map."

Directionality--characteristic of an item, sometimes called positive or negative, determining agreement with the item as indicating favorableness or unfavorableness toward the attitude object.

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[1]Credit is given to Maierle (1969) for most of the work in developing this glossary.

Element--one of two or more ways in which a facet may be expressed; in the present system, all joint facets are dichotomous, expressed in one of two ordered elements.

External control--an expectancy that reinforcement received are determined by factors not under personal control, for example, fate, chance, other persons or other external forces.

Facet--one of several semantic units distinguishable in the verbal expression of an attitude; in the present system, five dichotomous facets are noted within the joint struction.

Facet profile--see "struction profile."

Internal control--the generalized expectancy that reinforcements received are determined by factor under personal control, for example, determined by skill, ability, or other internal factors.

Joint struction--see also "struction," "lateral struction"--"operationally defined as the ordered sets of . . . five facets from low to high across all five facets simultaneously" (Jordan, 1968, p. 76); that part of the semantic structure of attitude items which can be determined independently of specific response situations.

Lateral struction--see also "struction," "joint struction"--that part of the semantic structure of attitude items which is directly dependent on specification of situation and object; a more precise term than "content."

Level--degree of attitude strength specified by the number of strong and weak facets in the member(s) of that Level; in the present

system, six ordered Levels are identified: Level 1 is characterized by the unique member having five weak facets; Level 2, by members having four weak and one strong facet . . . Level 6, by the unique member having five strong facets.

Level member--one of one or more permutation(s) of strong and weak facets which are common to a given Level; in the present system, 12 Level members have been identified: three on Level 2, four on Level 3, two on Level 4, and one each on Levels 1, 5, and 6.

Locus of control--a generalized expectancy regarding the degree to which a person's own behavior is seen to be the controlling factor in securing reinforcements.

Map--see "semantic map."

Member--see "Level member."

Path--see "semantic path."

Profile--see "struction profile."

Reversal--change in a specialized order of Levels or of correlations, involving only the two indicated Levels or correlations.

Semantic--pertaining to or arising from the varying meanings, grammatical forms, or stylistic emphasis of words, phrases, or clauses.

Semantic map--two-dimensional representation of hypothesized relationships among six Levels and among 12 Level members.

Semantic path--ordered set of Level members, typically six, such that each member has one more strong facet than the immediately preceding member and one less strong facet than the immediately following member.

Semantic possibility analysis--linguistic discussion of the implications of the five dichotomous joint facets identified in the present system; of 32 permutations, only 12 are considered logically consistent.

Simplex--specific form of (correlation) matrix, diagonally dominated and decreasing in magnitude away from the main diagonal.

Simplex approximation--matrix which approaches more or less perfectly the simplex form; existing tests (Kaiser, 1962; Mukherjee, 1966) reflect both ordering of individual entries and sizes of differences between entries and between diagonals.

Strong(er)--opposite of weak(er)--term functionally assigned to one of two elements, to a facet expressed by its strong element, or to a Level member characterized by more strong facets than another Level member; the strong-weak continuum is presently examined as unidimensional.

Struction--see also "joint struction," "lateral struction"--semantic pattern identifiable in any attitude item, or the system of such identifications.

Struction profile--specification, typically indicated by small letters and numerical subscripts, of the permutation(s) of weak and strong elements or facets in a Level member or a set of Level members; or of permutations of lateral elements or facets.

Weak--opposite of "strong" (which see).

APPENDIX B

DIRECTION FOR ADMINISTRATION

APPENDIX B

DIRECTIONS

Re: Administration of ABS:IE using IBM answer sheets.

NONE: It is recommended that IBM answer sheets be employed only when respondents are likely to have had previous contact with such answer form. If subjects are not familiar with the IBM answer sheets, a thorough explanation on how to mark the answers on an IBM answer sheet should be given. Examples are given on the cover sheets of the questionnaire booklets. It is also recommended that IBM answer sheets be employed with a captive audience that will take the scale under supervision.

Materials Needed: Sufficient questionnaire booklets, answer sheets and pencils for each respondent, a desk, table or suitable surface for each respondent to write on.

Procedure: Say "Do Not write on these yet."

Hand out one ABS:IE questionnaire and one IBM answer sheet to each respondent. Read the following after each respondent has received the questionnaire and an answer sheet.

> "This booklet contains statements of how people behave in certain situations or feel about certain things. You, yourself, or other persons often behave in the same way in certain situations. You also have some general ideas about yourself and about other persons. Sometimes you feel or behave the same way as others and sometimes you feel or behave differently than others.
>
> "This questionnaire has statements about ideas and about behavior. Each statement of this questionnaire is different from every other section, although some of the statements in each section are similar. Your answers in one section, therefore, may be the same as answers in another section, or your answers may differ from section to section. Here is a sample statement":

Sample 1

Other people believe the following things:

1. Getting ahead in life depends on luck.

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

If other people strongly agree with this you should make a heavy dark line on the IBM answer sheet between the two lines after the number 1 as follows:

1. 1 ▮ 2 || 3 || 4 || 5 ||

Read the directions to each session carefully.

Say: "Do Not write on the questionnaire booklets. Are there any questions?"

After questions are answered, ask: "Who needs a pencil?"

Dispense the pencils to those who need them and say:

> "There is no time limit. Place your answer sheets inside th- questionnaire booklet and put them here (designate) when you have finished. Be sure to follow the direction at the top of each page carefully. You may begin."

After all the questionnaires and answer sheets have been turned in, clearly label the group that has responded and date and location of administration (e.g., adult education, June 2, 1974, Continued Education Building, Lansing, Michigan).

APPENDIX C

ATTITUDE BEHAVIOR SCALE-I-E

(INITIAL VERSION)

APPENDIX C

ATTITUDE BEHAVIOR SCALE-I-E

Directions

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

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

Sample 1

Other people believe the following things:

1. Getting ahead in life depends on luck.

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

If other people strongly agree with this you should circle the number 1 as shown above or if you are using an IBM answer sheet make a heavy dark line on the answer sheet between the two lines after the number 1 as follows:

1. 1 ▌ 2 || 3 || 4 || 5 ||

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

ABS-I-IE

Directions: Section I

This section contains statements about ideas which other people have about certain things in life. Circle or fill in the answer sheet number that indicates what others believe in the situation.

Other people believe the following things:

1. Others believe that children get into trouble because their parents punish them too much.

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

2. Others believe that the trouble with children is that parents are too easy with them.

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

3. Others believe that the unhappy things in people's lives are due to bad luck.

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

4. Others believe that people's misfortunes result from the mistakes they make.

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

5. Others believe that we have wars because people don't take enough interest in politics.

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

ABS-I-IE

Other people believe the following things:

6. Others believe there will always be wars, no matter how hard people try to prevent them.

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

7. Others believe that in the long run people get the respect they deserve in this world.

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

8. Others believe that an individual's worth passes unrecognized no matter how hard he tries.

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

9. Others believe that teachers are not fair to students.

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

10. Others believe that students do not realize the extent to which grades are influenced by accidental happenings.

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

11. Others believe that without the right breaks one cannot be an effective leader.

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

ABS-I-IE

Other people believe the following things:

12. Others believe that capable people who fail to become leaders have not take advantage of their opportunities.

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

13. Others believe that no matter how hard you try some people just don't like you.

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

14. Others believe that people who can't get others to like them don't understand how to get along with others.

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

15. Others believe that heredity plays the major role in determining one's personality.

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

16. Others believe that it is one's experiences in life which determine what they're like.

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

17. Others believe that what is going to happen will happen.

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

ABS-I-IE

Other people believe the following things:

18. Others believe that trusting to fate never turns out as well as making a decision to take a definite course of action.

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

19. Others believe that in the case of the well prepared student there is no such thing as an unfair test.

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

20. Others believe that exam questions tend to be so unrelated to course work that studying is useless.

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

21. Others believe that success is a matter of hard work and does not depend on luck.

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

22. Others believe that getting a good job depends on being in the right place at the right time.

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

23. Others believe that the average citizen can have an influence in government decisions.

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

ABS-I-IE

Other people believe the following things:

24. Others believe that the world is run by a few powerful people, and there is nothing the little guy can do about it.

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

25. Others believe that when people make plans, they are certain they can make them work.

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

26. Others believe that it is not wise to plan far ahead because things turn out to be a matter of good or bad fortune anyhow.

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

27. Others believe there are certain people who are just no good.

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

28. Others believe there is some good in everybody.

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

29. Others believe that getting what a person wants has nothing to do with luck.

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

ABS-I-IE

Other people believe the following things:

30. Others believe that people might just as well decide what to do by flipping a coin.

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

31. Others believe that who gets to be the boss depends on who was lucky enough to be in the right place first.

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

32. Others believe that getting people to do the right thing depends upon ability; luck has nothing to do with it.

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

33. Others believe that as far as world affairs are concerned, people are the victims of forces they can neither understand nor control.

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

34. Others believe that by taking an active part in political and social affairs people can control world events.

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

35. Others believe that people don't realize the extent to which their lives are controlled by accidental happenings.

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

ABS-I-IE

Other people believe the following things:

36. Others believe there really is no such thing as "luck."

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

37. Others believe that people should always be willing to admit mistakes.

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

38. Others believe that it is best to cover up one's mistakes.

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

39. Others believe that it is hard to know whether or not a person really likes you.

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

40. Others believe that how many friends a person has depends on how nice that person is.

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

41. Others believe that in the long run the bad things that happen to people are balanced by the good things.

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

ABS-I-IE

Other people believe the following things:

42. Others believe that misfortunes are the result of lack of ability, ignorance, laziness, or all three.

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

43. Others believe that with enough effort political corruption can be wiped out.

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

44. Others believe that it is difficult for people to have control over the things politicians do in office.

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

45. Others believe that it is difficult to understand how teachers arrive at the grades they give.

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

46. Others believe there is a direct connection between studying hard and the grades one gets.

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

47. Others believe that a good leader expects people to decide for themselves what they should do.

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

ABS-I-IE

Other people believe the following things:

48. Others believe that a good leader makes it clear to everybody what their jobs are.

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

49. Others believe that people believe they have little influence over the things that happen to them.

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

50. Others believe that it is impossible for people to believe that chance or luck plays an important role in their lives.

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

51. Others believe that people are lonely because they don't try to be friendly.

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

52. Others believe there is no use in trying to please people, if they like you, they like you.

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

53. Others believe there is too much emphasis on athletics in high school.

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

ABS-I-IE

Other people believe the following things:

54. Others believe that team sports are an excellent way to build character.

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

55. Others believe that what happens to people is their own doing.

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

56. Others believe that people believe they don't have enough control over the direction their lives are taking.

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

57. Others believe that people can't understand why politicians behave the way they do.

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

58. Others believe that in the long run the people are responsible for bad government on a national as well as on a local level.

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

ABS-I-IE

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

59. Please indicate your sex.

1. Female
2. Male

60. Please indicate your age as follows:

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

61. About how much education do you have?

1. 6 years of school or less
2. 9 years of school or less
3. 12 years of school or less
4. Some college or university
5. A college or university degree

62. What is your approximate yearly income or that of your family if you are single?

1. less than $3,000
2. $3,001-$5,000
3. $5,001-$8,000
4. $8,001-$11,000
5. $11,001 and over

63. What is your marital status?

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

ABS-I-IE

64. What is your religion?

1. I prefer not to answer
2. Catholic
3. Protestant
4. Jewish
5. Other or none

65. Please indicate to which racial group you belong.

1. Black
2. White
3. Oriental
4. Indian (American)
5. Other

APPENDIX D

ATTITUDE BEHAVIOR SCALE: IE

(SECOND VERSION)

APPENDIX D

ATTITUDE BEHAVIOR SCALE: IE

Directions

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

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

Sample 1

Other people believe the following things:

1. Getting ahead in life depends on luck.

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

If other people strongly agree with this you should circle the number 1 as shown above or if you are using an IBM answer sheet make a heavy dark line on the answer sheet between the two lines after the number 1 as follows:

1. 1 ▮ 2 || 3 || 4 || 5 ||

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

ABS-I-IE

Directions: Section 1

This section contains statements about beliefs which other people have about certain things in life. Circle or fill in the answer sheet number that indicates how others believe in the situation.

Other people believe the following things:

1. Others believe that the unhappy things in people's lives are due to bad luck.

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

2. Others believe that an individual's worth passes unrecognized no matter how hard he tries.

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

3. Others believe that teachers are not fair to students.

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

4. Others believe that without the right breaks one cannot be an effective leader.

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

5. Others believe that trusting to fate never turns out as well as making a decision to take a definite course of action.

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

ABS-I-IE

Other people believe the following things:

6. Others believe that success is a matter of hard work and does not depend on luck.

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

7. Others believe that the world is run by a few powerful people, and there is nothing the little guy can do about it.

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

8. Others believe that it is not wise to plan far ahead because things turn out to be a matter of good or bad fortune anyhow.

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

9. Others believe that getting what a person wants has nothing to do with luck.

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

10. Others believe that people might as well decide what to do by flipping a coin.

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

11. Others believe that who gets to be the boss depends on who was lucky enough to be in the right place first.

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

ABS-I-IE

Other people believe the following things:

12. Others believe that getting people to do the right thing depends upon ability; luck has nothing to do with it.

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

13. Others believe there really is no such thing as "luck."

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

14. Others believe that in the long run the bad things that happen to people are automatically balanced by the good things.

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

15. Others believe there is a direct connection between studying hard and the grades one gets.

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

16. Others believe that people have no influence over the things that happen to them.

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

17. Others believe there is no use in trying to please people; if they like you, they like you.

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

ABS-I-IE

Other people believe the following things:

18. Others believe that people have no control over the things politicians do in office.

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

19. Others believe that getting a good job depends on being in the right place at the right time.

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

20. Others believe that what is going to happen will happen.

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

ABS-I-IE

Directions: Section 2

This section contains statements which people generally believe others would experience in certain situations in life. Please choose the answer that indicates what you think most others believe about different life situations.

Most people generally believe the following:

21.1 Others generally believe that the unhappy things in people's lives are usually due to bad luck.

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

22.2 People generally believe that an individual's worth is not usually recognized no matter how hard he tries.

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

23.3 People generally believe that teachers are not usually fair to the students.

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

24.4 Others generally believe that without the right breaks one usually cannot be an effective leader.

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

25.5 Generally, people believe that trusting to fate never turns out as well as making a decision to take a definite course of action.

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

ABS-II-IE

Most people generally believe the following:

26.6 People often believe that success is a matter of hard work and does not depend on luck.

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

27.7 Others generally believe that the world is run by a few powerful people and there is nothing the little guy can do about it.

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

28.8 People generally believe that it is not wise to plan far ahead because things turn out to be a matter of good or bad fortune anyhow.

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

29.9 Others generally believe that getting what a person wants has nothing to do with luck.

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

30.10 Others generally believe that people might just as well decide what to do by flipping a coin.

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

31.11 People generally believe that who gets to be boss depends on who was lucky enough to be in the right place first.

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

ABS-II-IE

Most people generally believe the following:

32.12 Others generally believe that getting people to do the right thing depends upon ability; luck has nothing to do with it.

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

33.13 People generally believe there is no such thing as "luck."

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

34.14 Others generally believe that in the long run the bad things that happen to people are automatically balanced by the good things.

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

35.15 People generally believe there is a direct connection between studying hard and the grades that one gets in school.

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

36.16 Others generally believe they have no influence over the things that happen to them.

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

37.17 Others generally believe there is no use in trying to please people; if they like you, they like you.

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

ABS-II-IE

Most people generally believe the following:

38.18 Others generally believe that people have no control over the things politicians do in office.

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

39.19 Others generally believe that getting a good job depends on being in the right place at the right time.

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

40.20 Others generally believe that what is going to happen will happen.

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

ABS-III-IE

Directions: Section 3

This section contains statements of the right or wrong way others believe. You are asked to indicate what you think is right or wrong for others to believe.

In respect to the following statements, what do you think is right or wrong for others to believe.

41.1 When others believe that unhappy things in people's lives are due to bad luck they are:

1. right
2. usually right
3. usually wrong
4. wrong

42.2 When people believe that an individual's worth passes unrecognized no matter how hard he tries, they are:

1. right
2. usually right
3. usually wrong
4. wrong

43.3 When others believe that teachers are not fair to students, they are:

1. right
2. usually right
3. usually wrong
4. wrong

44.4 When people believe that without the right breaks one cannot be an effective leader they are:

1. right
2. usually right
3. usually wrong
4. wrong

45.5 When others believe that trusting to fate never turns out as well as making a decision to take a definite course of action they are:

1. wrong
2. usually wrong
3. usually right
4. right

ABS-III-IE

In respect to the following statements, what do you think is right or wrong for others to believe.

46.6 When others believe that success is a matter of hard work and does not depend on luck they are:

1. wrong
2. usually wrong
3. usually right
4. right

47.7 When others believe that the world is run by a few powerful people, and there is nothing the little guy can do about it they are:

1. right
2. usually right
3. usually wrong
4. wrong

48.8 When others believe that it is not wise to plan far ahead because things turn out to be a matter of good or bad fortune anyhow they are:

1. right
2. usually right
3. usually wrong
4. wrong

49.9 When others believe that getting what a person wants has nothing to do with luck they are:

1. wrong
2. usually wrong
3. usually right
4. right

50.10 When others believe that people may just as well decide what to do by flipping a coin they are:

1. right
2. usually right
3. usually wrong
4. wrong

ABS-III-II

In respect to the following statements, what do you think is right or wrong for others to believe.

51.11 When others believe that who gets to be the boss depends on who was lucky enough to be in the right place first they are:

1. right
2. usually right
3. usually wrong
4. wrong

52.12 When others believe that getting people to do the right thing depends upon ability and luck has nothing to do with it they are:

1. wrong
2. usually wrong
3. usually right
4. right

53.13 When others believe there is no such thing as "luck" they are:

1. wrong
2. usually wrong
3. usually right
4. right

54.14 When others believe that in the long run the bad things that happen to people are automatically balanced by the good things they are:

1. right
2. usually right
3. usually wrong
4. wrong

55.15 When others believe there is a direct connection between studying hard and the grades one gets they are:

1. wrong
2. usually wrong
3. usually right
4. right

ABS-III-IE

In respect to the following statements, what do you think is right or wrong for others to believe.

56.16 When others think that people believe they have little influence over the things that happen to them they are:

1. right
2. usually right
3. usually wrong
4. wrong

57.17 When others believe there is no use in trying to please people, if they like you, they like you, they are:

1. right
2. usually right
3. usually wrong
4. wrong

58.18 When others believe that people have no control over the things politicians do in office they are:

1. right
2. usually right
3. usually wrong
4. wrong

59.19 When others believe that getting a good job depends on being in the right place at the right time they are:

1. right
2. usually right
3. usually wrong
4. wrong

60.20 When others believe that what is going to happen will just happen they are:

1. right
2. usually right
3. usually wrong
4. wrong

ABS-IV-IE

Directions: Section 4

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

In respect to the following statements what would you yourself expect:

61.1 I expect that the unhappy things in my life will be due to bad luck.

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

62.2 I expect my individual worth to pass unrecognized no matter how hard I try.

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

63.3 I expect that teachers will not be fair to students.

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

64.4 Without the right breaks, I could not expect to be an effective leader.

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

65.5 I expect my trusting to fate would never turn out as well as making a decision to take a definite course of action.

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

ABS-IV-IE

In respect to the following statements what would you yourself expect:

66.6 I expect that my success would be a matter of hard work and will not depend on luck.

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

67.7 I expect the world to be run by a few powerful people and there will be nothing I can do about it.

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

68.8 I expect it would not be wise for me to plan far ahead because things will turn out to be a matter of good or bad fortune anyhow.

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

69.9 I expect that getting what I want will have nothing to do with luck.

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

70.10 I expect that I might just as well decide what to do by flipping a coin.

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

71.11 I expect that if I got to be the boss, it would depend on my being lucky enough to be in the right place first.

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

ABS-IV-IE

In respect to the following statements what would you yourself expect:

72.12 I expect that getting people to do the right thing would depend upon ability; luck has nothing to do with it.

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

73.13 I expect to act as if there really is no such thing as "luck."

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

74.14 I expect that in the long run the bad things that happen to me will automatically be balanced by the good things.

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

75.15 I expect a direct connection between studying hard and the grades I get.

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

76.16 I expect to have little influence over the things that will happen to me.

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

77.17 I expect there will be no use in my trying to please people, if they like me, they like me.

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

ABS-IV-IE

In respect to the following statements what would you yourself expect:

78.18 I expect that I have no control over the things politicians do in office.

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

79.19 I expect that getting a good job would depend on my being in the right place at the right time.

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

80.20 I expect that what is going to happen to me will just happen.

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

ABS-V-IE

Directions: Section 5

This section concerns actual feelings that you yourself have under certain circumstances. You are asked to indicate how you would feel.

Indicate how you actually feel about the following situations:

81.1 If the unhappy things in my life were due to bad luck, my feelings would be:

1. strongly positive
2. positive
3. negative
4. strongly negative

82.2 If my individual worth passes unrecognized no matter how hard I try, my feelings would be:

1. strongly positive
2. positive
3. negative
4. strongly negative

83.3 If teachers are not fair to me, my feelings would be:

1. strongly positive
2. positive
3. negative
4. strongly negative

84.4 If without the right breaks, I cannot be an effective leader, my feelings would be:

1. strongly positive
2. positive
3. negative
4. strongly negative

85.5 If making a decision to take a definite course of action does not turn out as well as trusting to fate, I would feel:

1. strongly positive
2. positive
3. negative
4. strongly negative

ABS-V-IE

Indicate how you actually feel about the following situations:

86.6 If my success was a matter of hard work and did not depend on luck, I would feel:

1. strongly negative
2. negative
3. positive
4. strongly positive

87.7 If the world was run by a few powerful people and there was nothing I could do about it, my feelings would be:

1. strongly positive
2. positive
3. negative
4. strongly negative

88.8 If it were not wise for me to plan far ahead because things turned out to be a matter of good or bad fortune anyhow, my feelings would be:

1. strongly positive
2. positive
3. negative
4. strongly negative

89.9 If getting what I wanted had nothing to do with luck, my feelings would be:

1. strongly negative
2. negative
3. positive
4. strongly positive

90.10 If I might just as well decide what to do by flipping a coin, my feelings would be:

1. strongly positive
2. positive
3. negative
4. strongly negative

91.11 If my getting to be boss depended on my being lucky enough to be in the right place first, my feelings would be:

1. strongly positive
2. positive
3. negative
4. strongly negative

ABS-V-IE

Indicate how you actually feel about the following situations:

92.12 If my getting people to do the right thing depended upon my ability; and luck had nothing to do with it, my feelings would be:

1. strongly negative
2. negative
3. positive
4. strongly positive

93.13 If there really were no such thing as "luck" my feelings would be:

1. strongly negative
2. negative
3. positive
4. strongly positive

94.14 If in the long run the bad things that happen to me were automatically balanced by the good things, I would feel:

1. strongly positive
2. positive
3. negative
4. strongly negative

95.15 If there is a direct connection between studying hard and the grades I get, my feelings would be:

1. strongly negative
2. negative
3. positive
4. strongly positive

96.16 If I had little influence over the things that happened to me, my feelings would be:

1. strongly positive
2. positive
3. negative
4. strongly negative

97.17 If there was no use in me trying to please people, for if they liked me, they liked me, my feelings would be:

1. strongly positive
2. positive
3. negative
4. strongly negative

ABS-V-IE

Indicate how you actually feel about the following situations:

98.18 If it were difficult for me to have control over the things politicians did in office, I would feel:

1. strongly positive
2. positive
3. negative
4. strongly negative

99.19 If my getting a good job depended on my being in the right place at the right time, my feelings would be:

1. strongly positive
2. positive
3. negative
4. strongly negative

100.20 If what is going to happen to me will just happen, my feelings would be:

1. strongly positive
2. positive
3. negative
4. strongly negative

ABS-VI-IE

Directions: Section 6

This section concerns actual experiences you have had. Try to answer the following statements from knowledge of your own experiences.

I have experienced or found:

101.1 I have found that the unhappy things in my life are due to bad luck.

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

102.2 I have experienced that my individual worth passes unrecognized no matter how hard I try.

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

103.3 I have experienced that teachers are not fair to me.

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

104.4 I have found that without the right breaks I cannot be an effective leader.

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

105.5 I have experienced that trusting to fate never turns out as well as making a decision to take a definite course of action.

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

ABS-VI- IE

I have experienced or found:

106.6 I have seen that my success is a matter of hard work and does not depend on luck.

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

107.7 I have found that the world is run by a few powerful people, and there is nothing I can do about it.

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

108.8 I have found that it is not wise to plan far ahead because things turn out to be a matter of good or bad fortune anyhow.

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

109.9 I have experienced that getting what I want has nothing to do with luck.

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

110.10 I have found that people might just as well decide what to do by flipping a coin.

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

111.11 I have seen that who gets to be boss depends on who was lucky enough to be in the right place first.

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

ABS-VI-IE

I have experienced or found:

112.12 I have experienced that getting people to do the right thing depends upon ability; luck has nothing to do with it.

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

113.13 I have found that there really is no such thing as "luck."

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

114.14 I have experienced that in the long run the bad things that happen to me are automatically balanced by the good things.

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

115.15 I have experienced that there is a direct connection between studying hard and the grades I get.

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

116.16 I have found that I have no influence over the things that happen to me.

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

117.17 I have found that there is no use in my trying to please people, if they like me, they like me.

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

ABS-VI-IE

I have experienced or found:

118.18 I have found that I have no control over the things politicians do in office.

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

119.19 I have found that getting a good job depends on my being in the right place at the right time.

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

120.20 I have experienced that what is going to happen to me will just happen.

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

ABS-IE-D

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

121.1 Please indicate your sex:

1. female
2. male

122.2 Please indicate your age as follows:

1. 16 years old and under
2. 17-20
3. 21-30
4. 31-40
5. 41 and over

123.3 About how much education do you have?

1. 9 years of school or less
2. 12 years of school or less
3. some college or university
4. a college or university degree
5. master degree and above

124.4 What is your approximate yearly income or that of your family if you are a dependent?

1. less than $3,000
2. $3,001-$5,000
3. $5,001-$8,000
4. $8,001-$11,000
5. $11,001 and over

125.5 What is your marital status?

1. married
2. single
3. divorced
4. widowed
5. separated

ABS-IE-D

126.6 What is your religion?

1. I prefer not to answer
2. Catholic
3. Protestant
4. Jewish
5. Other or none

127.7 Please indicate to which racial group you belong:

1. Black
2. White
3. Oriental
4. Indian (American)
5. Other

128.8 Where were you mainly reared or "brought up" in your youth (that is up to age 18)?

1. country
2. country town
3. town
4. city suburb
5. major city

APPENDIX E

ATTITUDE BEHAVIOR SCALE: IE

(FINAL SCALE)

APPENDIX E

ATTITUDE BEHAVIOR SCALE: IE

Directions

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

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

Sample 1

Other people believe the following things:

1. Getting ahead in life depends on luck.

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

If other people strongly agree with this you should circle the number 1 as shown above or if you are using an IBM answer sheet make a heavy dark line on the answer sheet between the two lines after the number 1 as follows:

1. 1 ▮ 2 || 3 || 4 || 5 ||

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

ABS-I-IE

Directions: Section 1

This section contains statements about beliefs which other people have about certain things in life. Circle or fill in the answer sheet number that indicates how others believe in the situation.

Other people believe the following things:

1. Others believe that the unhappy things in people's lives are due to bad luck.

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

2. Others believe that an individual's worth passes unrecognized no matter how hard he tries.

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

3. Others believe that without the right breaks one cannot be an effective leader.

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

4. Others believe that the world is run by a few powerful people, and there is nothing the little guy can do about it.

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

5. Others believe that people might as well decide what to do by flipping a coin.

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

ABS-I-IE

Other people believe the following things:

6. Others believe that who gets to be the boss depends on who was lucky enough to be in the right place first.

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

7. Others believe there is a direct connection between studying hard and the grades one gets.

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

8. Others believe that people have no influence over the things that happen to them.

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

9. Others believe that people have no control over the things politicians do in office.

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

10. Others believe that getting a good job depends on being in the right place at the right time.

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

ABS-II-IE

Directions: Section 2

This section contains statements which people generally believe others would experience in certain situations in life. Please choose the answer that indicates what you think most others believe about different life situations.

Most people generally believe the following:

11.1 Others generally believe that the unhappy things in people's lives are usually due to bad luck.

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

12.2 People generally believe that an individual's worth is not usually recognized no matter how hard he tries.

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

13.3 Others generally believe that without the right breaks one usually cannot be an effective leader.

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

14.4 Others generally believe that the world is run by a few powerful people and there is nothing the little guy can do about it.

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

15.5 Others generally believe that people might just as well decide what to do by flipping a coin.

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

ABS-II-IE

Most people generally believe the following:

16.6 People generally believe that who gets to be boss depends on who was lucky enough to be in the right place first.

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

17.7 People generally believe there is a direct connection between studying hard and the grade that one gets in school.

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

18.8 Others generally believe they have no influence over the things that happen to them.

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

19.9 Others generally believe that people have no control over the things politicians do in office.

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

20.10 Others generally believe that getting a good job depends on being in the right place at the right time.

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

ABS-III-IE

Directions: Section 3

This section contains statements of the right or wrong way others believe. You are asked to indicate what you think is right or wrong for others to believe.

In respect to the following statements, what do you think is right or wrong for others to believe.

21.1 When others believe that unhappy things in people's lives are due to bad luck they are:

1. right
2. usually right
3. usually wrong
4. wrong

22.2 When people believe tha an individual's worth passes unrecognized no matter how hard he tries, they are:

1. right
2. usually right
3. usually wrong
4. wrong

23.3 When people believe that without the right breaks one cannot be an effective leader they are:

1. right
2. usually right
3. usually wrong
4. wrong

24.4 When others believe that the world is run by a few powerful people, and there is nothing the little guy can do about it they are:

1. right
2. usually right
3. usually wrong
4. wrong

25.5 When others believe that people may just as well decide what to do by flipping a coin they are:

1. right
2. usually right
3. usually wrong
4. wrong

ABS-III-IE

In respect to the following statements, who do you think is right or wrong for others to believe.

26.6 When others believe that who gets to be boss depends on who was lucky enough to be in the right place first they are:

1. right
2. usually right
3. usually wrong
4. wrong

27.7 When others believe there is a direct connection between studying hard and the grades one gets they are:

1. right
2. usually right
3. usually wrong
4. wrong

28.8 When others think that people believe they have little influence over the things that happen to them they are:

1. right
2. usually right
3. usually wrong
4. wrong

29.9 When others believe that people have no control over the things politicians do in office they are:

1. right
2. usually right
3. usually wrong
4. wrong

30.10 When others believe that getting a good job depends on being in the right place at the right time they are:

1. right
2. usually right
3. usually wrong
4. wrong

ABS-IV-IE

Directions: Section 4

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

In respect to the following statements what would you yourself expect in the future.

31.1 I expect that the unhappy things in my life will be due to bad luck.

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

32.2 I expect my individual worth to pass unrecognized no matter how hard I try.

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

33.3 Without the right breaks, I could not expect to be an effective leader.

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

34.4 I expect the world to be run by a few powerful people and there will be nothing I can do about it.

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

35.5 I expect that I might just as well decide what to do by flipping a coin.

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

ABS-IV-IE

In respect to the following statements, what would you yourself expect:

36.6 I expect that if I got to be the boss, it would depend on my being lucky enough to be in the right place first.

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

37.7 I expect a direct connection between studying hard and the grades I get.

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

38.8 I expect to have little influence over the things that will happen to me.

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

39.9 I expect that I have no control over the things politicians do in office.

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

40.10 I expect that getting a good job would depend on my being in the right place at the right time.

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

ABS-V-IE

Directions: Section 5

This section concerns actual feelings that you yourself have under certain circumstances. You are asked to indicate how you would feel.

Indicate how you actually feel about the following situations:

41.1 If the unhappy things in my life were due to bad luck, my feelings would be:

1. strongly positive
2. positive
3. negative
4. strongly negative

42.2 If my individual worth passes unrecognized no matter how hard I try, my feelings would be:

1. strongly positive
2. positive
3. negative
4. strongly negative

43.3 If without the right breaks, I cannot be an effective leader, my feelings would be:

1. strongly positive
2. positive
3. negative
4. strongly negative

44.4 If the world was run by a few powerful people and there was nothing I could do about it, my feelings would be:

1. strongly positive
2. positive
3. negative
4. strongly negative

45.5 If I might just as well decide what to do by flipping a coin, my feelings would be:

1. strongly positive
2. positive
3. negative
4. strongly negative

ABS-V-IE

Indicate how you actually feel about the following situations:

46.6 If my getting to be boss depended on my being lucky enough to be in the right place first, my feelings would be:

1. strongly positive
2. positive
3. negative
4. strongly negative

47.7 If there is a direct connection between studying hard and the grades I get, my feelings would be:

1. strongly positive
2. positive
3. negative
4. strongly negative

48.8 If I had little influence over the things that happened to me, my feelings would be:

1. strongly positive
2. positive
3. negative
4. strongly negative

49.9 If it were difficult for me to have control over the things politicians did in office, I would feel:

1. strongly positive
2. positive
3. negative
4. strongly negative

50.10 If my getting a good job depended on my being in the right place at the right time, my feelings would be:

1. strongly positive
2. positive
3. negative
4. strongly negative

ABS-VI-IE

Directions: Section 6

This section concerns actual experiences you have had. Try to answer the following statements from knowledge of your own experiences.

I have experienced or found:

51.1 I have found that the unhappy things in my life are due to bad luck.

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

52.2 I have experienced that my individual worth passes unrecognized no matter how hard I try.

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

53.3 I have found that without the right breaks I cannot be an effective leader.

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

54.4 I have found that the world is run by a few powerful people, and there is nothing I can do about it.

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

55.5 I have found that people might just as well decide what to do by flipping a coin.

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

ABS-VI-IE

I have experienced or found:

56.6 I have seen that wo gets to be boss depends on who was lucky enough to be in the right place first.

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

57.7 I have experienced that there is a direct connection between studying hard and the grades I get.

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

58.8 I have found that I have no influence over the things that happen to me.

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

59.9 I have found that I have no control over the things politicians do in office.

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

60.0 I have found that getting a good job depends on my being in the right place at the right time.

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

APPENDIX F

EFFICACY SCALE

APPENDIX F

LIFE SITUATIONS

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

61. It should be possible to eliminate war once and for all.

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

62. Success depends to a large part on luck and fate.

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

63. Some day most of the mysteries of the world will be revealed by science.

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

64. By improving industrial and agricultural methods, poverty can be eliminated in the world.

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

65. With increased medical knowledge it should be possible to lengthen the average life span to 100 years or more.

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

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66. Some day the deserts will be converted into good farming land by the application of engineering and science.

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

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

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

68. With hard work anyone can succeed.

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

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

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

APPENDIX G

ROTTER I-E SCALE

APPENDIX G

SOCIAL REACTION INVENTORY

Listed below are 29 pairs of statements. You will probably agree with one of the two statements more than you will with the other one. Sometimes neither of the two statements will really say what you would like it to say. If this happens, just choose the one which is closest to what you believe. There are no right or wrong answers.

Please put all of your answers on the answer sheet page. For example, look at item 70 below. If you agree with statement "1" then look at number 70 on the answer sheet and make a heavy dark line on the answer sheet between the first two lines after the number 70. If you agree with statement "2" then mark between the second lines.

70. 1. Children get into trouble because their parents punish them too much.

    2. The trouble with most children nowadays is that their parents are too easy with them.

71. 1. Many of the unhappy things in people's lives are partly due to bad luck.

    2. People's misfortunes result from the mistakes they make.

72. 1. One of the major reasons why we have wars is because people don't take enough interest in politics.

    2. There will always be wars, no matter how hard people try to prevent them.

73. 1. In the long run people get the respect they deserve in this world.

    2. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.

74. 1. The idea that teachers are unfair to students is nonsense.

    2. Most student's don't realize the extent to which their grades are influenced by accidental happenings.

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75. 1. Without the right breaks one cannot be an effective leader.

    2. Capable people who fail to become leaders have not taken advantage of their opportunities.

76. 1. No matter how hard you try some people just don't like you.

    2. People who can't get others to like them don't understand how to get along with others.

77. 1. Heredity plays the major role in determining one's personality.

    2. It is one's experiences in life which determine what they're like.

78. 1. I have often found that what is going to happen will happen.

    2. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

79. 1. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.

    2. Many times exam questions tend to be so unrelated to course work that studying is really useless.

80. 1. Becoming a success is a matter of hard work, luck has little or nothing to do with it.

    2. Getting a good job depends mainly on being in the right place at the right time.

81. 1. The average citizen can have an influence in government decisions.

    2. This world is run by the few people in power, and there is not much the little guy can do about it.

82. 1. When I make plans, I am almost certain that I can make them work.

    2. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

83. 1. There are certain people who are just no good.

    2. There is some good in everybody.

84. 1. In my case getting what I want has little or nothing to do with luck.

    2. Many times we might just as well decide what to do by flipping a coin.

85. 1. Who gets to be the boss often depends on who was lucky enough to be in the right place first.

    2. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.

86. 1. As far as world affairs are concerned, most of us are the victims of forces we can neither understand nor control.

    2. By taking an active part in political and social affairs the people can control world events.

87. 1. Most people don't realize the extent to which their lives are controlled by accidental happenings.

    2. There really is not such thing as "luck."

88. 1. One should always be willing to admit mistakes.

    2. It is usually best to cover up one's mistakes.

89. 1. It is hard to know whether or not a person really likes you.

    2. How many friends you have depends upon how nice a person you are.

90. 1. In the long run the bad things that happen to us are balanced by the good ones.

    2. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

91. 1. With enough effort we can wipe out political corrupiton.

    2. It is difficult for people to have much control over the things politicians do in office.

92. 1. Sometimes I can't understand how teachers arrive at the grades they give.

    2. There is a direct connection between how hard I study and the grades I get.

93. 1. A good leader expects people to decide for themselves what they should do.

    2. A good leader makes it clear to everybody what their jobs are.

94. 1. Many times I feel that I have little influence over the things that happen to me.

    2. It is impossible for me to believe that chance or luck plays an important role in my life.

95. 1. People are lonely because they don't try to be friendly.

    2. There's not much use in trying too hard to please people, if they like you, they like you.

96. 1. There is too much emphasis on athletics in high schools.

    2. Team sports are an excellent way to build character.

97. 1. What happens to me is my own doing.

    2. Sometimes I feel that I don't have enough control over the direction my life is taking.

98. 1. Most of the time I can't understand why politicians behave the way they do.

    2. In the long run the people are responsible for bad government on a national as well as on a local level.

APPENDIX H

PERSONAL INFORMATION QUESTIONS

FINAL VERSION (ADS-IE)

APPENDIX H

FINAL VERSION (ABS-IE)

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

99. Please indicate your sex:

1. female
2. male

100. Please indicate your age as follows:

1. 16 years old and under
2. 17-20
3. 21-30
4. 31-40
5. 41 and over

101. About how much education do you have?

1. 9 years of school or less
2. 12 years of school or less
3. some college or university
4. a college or university degree
5. master degree and above

102. What is your approximate yearly income or that of your family if you are a dependent?

1. less than $3,000
2. $3,001-$5,000
3. $5,001-$8,000
4. $8,001-$11,000
5. $11,001 and over

103. What is your marital status?

1. married
2. single
3. divorced
4. widowed
5. separated

104. What is your religion?

1. I prefer not to answer
2. Catholic
3. Protestant
4. Jewish
5. Other or none

105. About how important is your religion to you in your daily life?

1. I prefer not to answer
2. I have no religion
3. Not very important
4. Fairly important
5. Very important

106. Please indicate to which racial group you belong:

1. Black
2. White
3. Oriental
4. Indian (American)
5. Other

107. Where were you mainly reared or "brought up" in your youth (that is up to age 18)?

1. country
2. country town
3. town
4. city suburb
5. major city

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