This volume may be consulted freely, but the literary rights of the author must be respected. No passage may be copied or closely paraphrased without the previous written consent of the author. If the reader obtains assistance from this volume he must give credit in his own work.

This thesis by Frederick Mark Kravitz has been used by the following persons, whose signatures attest their acceptance of the above restrictions.

<table>
<thead>
<tr>
<th>NAME</th>
<th>ADDRESS</th>
<th>DATE</th>
</tr>
</thead>
</table>
Duke University Library

The use of this thesis is subject to the usual restrictions that govern the use of manuscript material. Reproduction or quotation of the text is permitted only upon written authorization from the author of the thesis and from the academic department by which it was accepted. Proper acknowledgment must be given in all printed references or quotations.
PREDICTING BEHAVIOR: AN EXAMINATION OF THE UTILITIES OF TRAIT AND INTERACTION APPROACHES TO LOCUS OF CONTROL

by

Frederick Mark Kravitz

Department of Psychology
Duke University

Date: 2/28/75

Approved:

Dr. Robert C. Carson, Chairman

Susan Roth

George L. Money

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Arts in the Department of Psychology in the Graduate School of Arts and Sciences of Duke University

1975
ACKNOWLEDGMENTS

I am indebted to Dr. Robert C. Carson, Professor of Psychology, who kindly agreed to be Chairman of my thesis committee and offered critical comments on my efforts to evaluate the various approaches to the study of personality.

Dr. Philip Costanzo, Associate Professor of Psychology, was of great assistance in the design of the experiment. Dr. Susan Roth, Assistant Professor of Psychology, rendered invaluable assistance in the construction of instruments and the statistical analysis of the results. Dr. Roth is also to be thanked for her enthusiasm and encouragement. Dr. William Revelle, Assistant Professor of Psychology, Northwestern University, shared his considerable knowledge of test construction and evaluation with me, allowing for the refinement of my statistical analyses.

I would like to thank Hendey Buckley, Blair Kilpatrick-Tabak, John Gregory, and Carl Cordoni for their efforts as experimenters in this study. Finally, a few words of appreciation are due Beatrice Greenwald who gave me the benefit of her most helpful suggestions and criticisms through every phase of my research.

F. M. K.
# CONTENTS

**ACKNOWLEDGMENTS**  
**LIST OF TABLES**  

### PART I. BASIC APPROACHES TO PERSONALITY

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>EVOLUTION AND EVALUATION OF TYPE, TRAIT, FACTOR AND STATE THEORIES</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Type Approaches to Personality</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Trait Approaches to Personality</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Factor Approaches to Personality</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>State Approaches to Personality</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Conclusion</td>
<td>31</td>
</tr>
</tbody>
</table>

### II. THE BEHAVIORIST CRITIQUE: SITUATIONISM

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radical Behaviorism</td>
<td>34</td>
</tr>
<tr>
<td>Social Learning Behaviorism</td>
<td>42</td>
</tr>
<tr>
<td>Theoretical and Methodological Problems</td>
<td>48</td>
</tr>
</tbody>
</table>

### III. THE EMERGING PERSPECTIVE: INTERACTIONISM

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antecedents</td>
<td>53</td>
</tr>
<tr>
<td>Analysis of Variance Studies</td>
<td>60</td>
</tr>
<tr>
<td>The Basic Approach</td>
<td>65</td>
</tr>
<tr>
<td>Moderator Variables: Another Alternative</td>
<td>68</td>
</tr>
</tbody>
</table>

### PART II. LOCUS OF CONTROL: THE VARIABLE

### IV. DEFINITION AND GENESIS OF THE CONCEPT OF LOCUS OF CONTROL | 72 |

### V. ROTTER'S I-E SCALE: AN EVALUATION OF THE MEASURE | 79 |

### VI. ASSESSING THE UTILITIES OF TRAIT AND INTERACTION APPROACHES | 87 |

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aims of the Study</td>
<td>87</td>
</tr>
<tr>
<td>The Problem of Specificity/Generalizability</td>
<td>90</td>
</tr>
</tbody>
</table>
### PART III. METHOD

#### VII. CONSTRUCTION OF QUESTIONNAIRES  94

- An Interaction Measure of Locus of Control  94
- A Measure of Relevant Self-Report Behavior  101

#### VIII. TESTING PROCEDURES  107

- Subjects  107
- Test Administration  108
- Scoring Procedures  108

### PART IV. RESULTS  110

### PART V. DISCUSSION AND SUMMARY  125

### APPENDIX  133

- Social Reaction Inventory (Rotter's I-E Test)  134
- Attitude Study - Part I (Interaction Test)  139
- Attitude Study - Part II (Behavior Criterion)  146
- Computer Printout of Raw Data  158

### REFERENCES  160
LIST OF TABLES

Table 1. Sample Means and Standard Deviations of Test Scores 111
Table 2. Correlations Between the Two Predictors and the Behavior Measures 112
Table 3. Correlations Between the Two Predictors 114
Table 4. Variance Accounted for by the Better Predictor and Increment Afforded by Adding Second Predictor 114
Table 5. Reliability of the Tests Constructed 116
Table 6. Correlations Between Predictors and Criterion With Correction for Attenuation 116
Table 7. Previous Exposure to Situations Similar to Items On the Self-Report Behavior Questionnaire 118
Table 8. Ratings of Satisfaction with Behavioral Choices Offered on the Self-Report Behavior Questionnaire 120
Table 9. Correlations Between Individual Items on the Interaction Test and Behavior Total Scores 122
Table 10. Analysis of Variance Due to Sex Differences in Rotter Scores 123
Table 11. Analysis of Variance Due to Sex Differences in Interaction Total Scores 123
Table 12. Analysis of Variance Due to Sex Differences in Behavior Total Scores 124
PREDICTING BEHAVIOR: AN EXAMINATION OF THE UTILITIES OF TRAIT AND INTERACTION APPROACHES TO LOCUS OF CONTROL
PART I. BASIC APPROACHES TO PERSONALITY

INTRODUCTION

Speculations about the nature of personality can be found throughout recorded time. There have been numerous, and often contradictory attempts to describe man's personality, character, and temperament. The scientific study of personality has only slowly emerged from these purely speculative roots. Part of this lag can be attributed to the extreme subjectivity inherent in man's analysis of self. William James noted that "the history of philosophy is to a great extent that of a certain clash of human temperaments" (James, 1907, p.6). This observation seems especially relevant to personology in light of the multitude of personality theories expounded.

The term 'personality' comes from the Latin word persona. The Romans used persona to refer to the masks worn in the theatre. Later, the term came to include the wearers of the mask as well. The wearers of a given mask were expected to exhibit a consistent pattern of behaviors and attitudes. Beginning in Roman times, the term has taken on diverse meanings, both denotative and connotative (Burnham, 1968).
The scientific study of man was last to emerge in the history of science. "The heavenly bodies, the objects remotest from man, were the first objects of scientific interest. Speculation advanced slowly through the realm of the inorganic until in the 19th century, detailed observations about animals paved the way for detailed and systematic observations of men" (Peters, 1962, p.38).

The scientific study of personality is thus a young science, still struggling to extricate itself from its speculative roots. The trend in personological works has been towards greater complexity, a gradual movement away from varying common sense notions and sophistic speculations to more parsimonious, observationally-related hypotheses. The modern study of personality clearly reflects Peter's view of scientific progress in general. "We tend to think of science as a 'body of knowledge' which began to be accumulated when man hit upon 'scientific method.' This is a superstition. It is more in keeping with the history of thought to describe science as the myths about the world which have not yet been found to be wrong ... Science consists in conscious attempts to refute other people's stories and in the production of better stories to supplant them. The history of science is the history of stories which have been shown to be false or only partially correct" (Peters, 1962, p.37).

Some of the earlier myths about the nature of personality have endured into the present. Later myths, the myth of the "purity" of the experimental
method and the myth of the "purity" of the correlational approach, have led to a paradigm crisis (Cronbach, 1957) which is still unresolved. However, from this crisis, a new perspective, an interactionist one, is emerging which promises to significantly alter our conceptualizations of personality. The present paper is a review of its antecedents, an examination of this new approach, and an experimental analysis of its potential utility.

I. EVOLUTION AND EVALUATION OF TYPE, TRAIT FACTOR AND STATE THEORIES

TYPE APPROACHES TO PERSONALITY

One of the oldest approaches to personality consists of labeling and classifying people according to their psychological characteristics. Attempts to describe mankind by grouping the many differences among people into categories are as old as human language (Mischel, 1971). Type theories are the oldest and the simplest examples of this approach, dating back to the ancient theory of temperament. Hippocrates, circa 400 B.C., expounded four varieties of temperament (choleric, melanchololic, sanguine, and phlegmatic) and attributed them to the predominance of one of the four bodily humors then
postulated by biologists (yellow bile, black bile, blood, and phlegm.)

Hippocrates' typology was in accord with the scientific speculation of his time, but the "myths" upon which it rested were eventually discredited and newer, more plausible typologies were invented. The later typologies largely deal with constitutional types, endeavoring to formulate associations between physique and indices of temperament. The German psychiatrist Kretschmer devised a formal classification of constitutional types which was later revised by Sheldon (1942).

The basic assumption inherent in the type approach is that behavior is caused by intrapsychic determinants of behavior. "All typologies are based upon the assumption that the personality is characterized by a more or less enduring structure ... intrinsic traits of personality" (MacKinnon, 1944, p.24).

The classifications made by typologists usually assume that the categories to be utilized are discrete and discontinuous. Herein lies the appealing simplicity of typology. If, like Hippocrates, one postulates four types of people (or Jung with his two types - introvert and extrovert) then everyone can be described and understood by reference to one of the four (for Jung, two) classes of personality types. (Eysenck, who views types as series of traits, has combined Allport's 16,000 traits into, for convenience, two types (Eysenck, 1970).) Some typologists have attempted to expand the classification process through a further
elaboration and differentiation of additional types. "The resultant elaborated typology gone to seed is Fourier's (1851) classification of human passions into three classes, twelve orders, thirty-two genera, 134 species, and 404 varieties which in turn yield 810 types of character" (MacKinnon, 1944, p. 24).

While it would be oversimplifying to say that typologists use only discrete categories like male or female, it does not seem unwarranted to state that they describe each individual in light of his resemblance to some typical person, and that the categories utilized are to some extent mutually exclusive. The greater an individual's resemblance to one type, the less his resemblance to others. Thus typology in many ways uses a relative not an absolute system of measurement and evaluation (Anastasi, 1958).

The most important modern typology is Sheldon's constitutional type theory. Sheldon has attempted to construct a basic taxonomy of human beings, drawing on Kretschmer's hypotheses concerning the interrelationship of body build and personality. "...physique and temperament are clearly two aspects of the same thing, and we are not surprised if we are led to expect that the dynamics of an individual should be related to the static picture he presents. It is the old notion that structure must somehow determine function" (Sheldon, 1942, p. 4).

Sheldon has devised three types of body build: 1. endomorphic - obese; 2. mesomorphic - athletic; and 3. ectomorphic - thin, tall, weak. In
classification, he rates each individual on each type on a seven point scale. A 2-7-1, for example, would be predominantly athletic with a little fat and some small amount of thinness. Correlated with these body types are three temperaments: 1. viscerotic (endomorphic body build) - "overly relaxed, gluttonous, overly socialized, too dependent on people, overly complacent or the like" (Sheldon, 1942, p.23); 2. somatorotic (mesomorphic body build) - "overly aggressive and assertive, too energetic, too dominating, too fond of risk, too combative, ruthless, loud, manic or hypomanic, overly active" (Sheldon, 1942, p.23); and 3. cerebrotic (ectomorphic body build) - "overly tense and restrained, too sensitive, overly responsive physiologically, overly secretive, sociophobic and overly inhibited, pathologically intent, emotionally 'tied up in a knot' etc." (Sheldon, 1942, p.23).

Other than the two basic assumptions of typology reviewed above, Sheldon's typology proposes the following three principles: 1. continuous dimension of variation, not either-or body types; 2. a relationship between morphogenotype (measured by the somatotype - the ratings of physique) and the individual's personality dynamics, his temperament; and 3. a consistency of somatotype over time (Pervin, 1970).

The constitutional relationship which Sheldon seeks implies that a common hereditary base determines both physique and behavior. In addition, the
relationship has been attributed to social stereotypes (Sheldon's personality types are clearly derived from social 'common sense') and a variety of psychosomatic and somatopsychological relations (Anastasi, 1958).

Sheldon's typology, like all typologies, is guilty of much sloppy thinking. First, in an effort to abandon the antiquated notion of discrete categories, Sheldon has employed a more quantitative, varigated measuring system. But how do we describe the temperament of someone basically athletic (mesomorphic) and almost equally fat (endomorphic)? According to Sheldon's categories of temperaments, said individual would be both overly relaxed and overly aggressive, gluttonous and too energetic, too dependent on others and too dominating, overly complacent and too fond of risk and combat. There is no reason to presume that differential rating of the two dominant types would help clarify this situation.

In addition, there is no reason to presume, as Sheldon must, that there are no changes in physique over time. Clearly people do gain and lose weight, clearly some people do build up muscles through exercise and energetic activity, while others lose their developed musculature due to lowered rates of activity. The aging athlete is often times much like the equally endomorphic and mesomorphic individual discussed above. Can we presume that such an individual's temperament would shift 180 degrees as physical activity declines and his weight increases? This is an untenable assumption, but one fundamental to Sheldon's typology.
But above and beyond these problems we still have Sheldon's basic postulate, that physique causes temperament. The athlete is, presumably, the recipient of genes favorable to athletic activity and this in turn engenders attitudes consistent with this bent. This type of reasoning is similar to earlier notions psychologists have held concerning obesity. Since all obese people were found to have glandular deficiencies, psychologists tacked on the statement "caused by." Ergo, obese people had glandular deficiencies which caused the obesity. What was not realized at the time was that overeating itself, regardless of "cause", would result in glandular deficiency. Glandular deficiency, then, is a result of overeating which in turn may or may not be caused by a prior glandular deficiency. When Sheldon sees a muscular person he presumes that this was "caused" by some muscular gene (or the like) whereas in fact he can only justifiably make the common-sense observation that this individual has participated in athletics or body-building because of a number of possible reasons: interest in/or enjoyment of athletics, concern with health or appearance, quest for recognition et al. Sheldon's typology thus is contradicted by our understanding of the wide physical capabilities people enjoy, their variegated interests and reasons for acting and not acting, and changes in physique that are not uncommon over time. Given these insurmountable problems confronting any constistutional typologist, Sheldon's statement that "it is rather astonishing that in the past so little relation has been discovered between the shape of a man and the way he
behaves" (Sheldon, 1942, p.4) does not seem either astonishing or surprising.

TRAIT APPROACHES TO PERSONALITY

Like type approaches to personality, trait theories also endeavor to label and classify people according to their psychological characteristics. However, where typologies usually employ some variant of discontinuous categories, traits are continuous dimensions upon which differences between people can be arranged in terms of the amount of the characteristic an individual possesses. Type theories always have some biosocial reference, traits do not. A man can be said to have a trait, but he cannot be said to have a type i.e. he fits a type. "This bit of usage betrays the important fact that types exist not in people or in nature, but rather in the eye of the observer. Type includes more than is in the individual. Traits, on the contrary, are considered wholly within the compass of the individual" (G.W. Allport, 1937, p.295).

Trait theory is thus, from conception, on a better founding than typology. Whereas the latter must somehow demonstrate the integrity of its global categories, trait theorists need only posit a number of characteristics and then measure them. No higher order abstraction is necessarily demanded of the trait theorist. An individual can idiosyncratically be high or low or
intermediate on any traits being postulated without the theory being undermined.

But what is a trait?

There are numerous, and contradictory, uses of the term. Part of this on-going debate can be attributed to the clash of differing temperaments, but, in addition, definitions have evolved over time. Clearly trait theorists have not been reluctant to shift their emphasis, to postulate new mechanisms, so as to preserve their assumptions in the face of disconfirmatory evidence.

At the simplest level, a trait is merely the difference between characteristics or behaviors of two or more people on some dimension. Guilford employs this usage. "A trait is any distinguishable, relatively enduring way in which one individual differs from others" (Guilford, 1959, p.6). In this perspective, a trait is a summary label for the individual differences observed or inferred.

Traits can also be defined as personality constructs created for the explanatory convenience and power that they afford the theorist (Mischel, 1968). While this usage of trait has historical justification, most trait theorists go beyond this level, defining traits as real properties of people, not merely theoretical constructs. "Traits are not creations in the mind of the observer, nor are they verbal fictions; they are here accepted as biophysical facts, actual psychophysical dispositions related - though no one yet knows how - to persistent neural systems of stress and determination" (G.W. Allport, 1937, p.339).
In addition, trait theorists conceptualize traits both as psychological realities rooted in the individual and as the causes of behavior. "A trait has more than nominal existence ... and is dynamic, or at least determinative, in behavior" (G.W. Allport, 1966, p.1).

Trait theories share with type theories an emphasis on intrapsychic determinants of behavior. It is the "determinative" trait embedded within the individual that directs his behavior. Despite Allport's claim that unlike types which exist in the observer, traits have psychological reality; traits must be inferred by the observer as well. "Traits are not directly observable; they are inferred (as any kind of determining tendency is inferred.) Without such an inference the stability and consistency of personal behavior could not possibly be explained" (G.W. Allport, 1937, p.340). This fact tends to argue for Mischel's view of traits as useful constructs, Allport's claims to the contrary notwithstanding.

How then can one truly infer a psychologically real trait? There are no clear guidelines. In fact, trait theorists suggest that it is easier to infer a trait than to disprove one. "Acts, and even habits, that are inconsistent with a trait are not proof of the nonexistence of the trait" (G.W. Allport, 1931, p.372). One important criticism of trait theories has concerned itself with this problem - the inability to change traits already postulated. "Perhaps the impression of behavioral constancy and consistency is most strongly maintained by the difficulty
of obtaining disconfirming data. Most psychological constructs have such broad and ambiguous semantic meanings, and such diverse behavioral referents, that they are virtually impossible to disconfirm definitively" (Mischel, 1968, p.56).

In addition, trait labeling has pervasive effects on later perceptions of an individual. This area affords an excellent example of personology’s persistent problem of maximal closeness to its subject matter. In a sense, it is this lack of objectivity which both creates a serious problem for the trait psychologist and affords his theory much of its common-sense wisdom.

Our everyday impression that a particular individual behaves consistently in different situations is undoubtedly aided by our case in recognizing him regardless of the context in which he is observed. This sense of identification can be attributed both to his highly stable idiosyncratic characteristics (appearance, speech et.al.) and to social roles which tend to remain relatively stable (Mischel, 1968).

Therefore, there are important constancies in people's appearances and manners that are well-noted by other individuals. In addition, much research and theorizing on cognitive incongruity, cognitive dissonance and cognitive balance suggests that people generally reduce inconsistency between dissonant cognitions (Mischel, 1968). People minimize and avoid inconsistencies in cognitions about themselves and others (which makes them psychologically
uncomfortable) and reconstrue discrepant events so as to impose compatibility upon them (Festinger, 1957). This clearly tends to bias further observations about people who have previously been labelled or categorized. Contradictory evidence often fails to dislodge categories that no longer appear to be either warranted or correct. (This constraining effect of categorizing is demonstrated in the following papers: on impression formation in person perception - Anderson, 1965; Asch, 1946; Wishner, 1960; on hypothesis testing in problem solving - Davidson, 1964; Wyatt and Campbell, 1951; on thinking - Bruner, Olver, and Greenfield, 1966; on clinical diagnosis - Rubin and Shontz, 1960; Sines, 1959; on psychological research - Rosenthal, 1963. All cited in Mischel, 1968. Clearly, psychologists are far from immune to the pitfalls of prior categorization.)

From (1960) claims that it is impossible for us to perceive behavior as such; what we think we see is always dependent on the intentions we ascribe to the individual being observed. Unexpected behaviors on the part of the other lead observers to presume that the other has made a mistake or changed his mind. Rarely do we think that our interpretation has been wrong. M.D. Vernon (1952) suggests that the prime function of perception is to maximize the stability and consistency in the world while also developing some sensitivity to unfamiliarity that might be harmful or significant to us.

The important message for psychologists in all this is that any tendency to create consistency from inconsistency must not be confused with actual differ-
ences in behavior. The common-sense justification for the positing of traits does not accord well with any of the stated goals of personology. Psychologists, as scientists, should not attempt to validate inadequate conceptualizations, but rather attempt to perceive, record, and then amend as the facts demand.

Mischel (1968) suggests that ratings and judgments about the personality structure of others can provide us with information about the rater's semantic and conceptual system. "Statements about personality traits may help us understand the construct system of the respondent, as well as widely shared semantic stereotypes and pervasive judgmental halo effects, even when they do not yield reliable and accurate information about the behavior of the person who is being described" (Mischel, 1968, p. 72). Much of the foregoing discussion of traits is in accord with the view of traits as constructs inferred by a more or less judicious observer.

Just as people do not tend to discard their assumptions about others readily, so scientists do not tend to simply discard theories under assault. Trait psychologists have, over the years, (as more and more studies documented the lack of consistency found in behavior) attempted to bolster their case with an assortment of hypotheses, each less disprovable than the last. "Not all the processes of personality that we may infer from the observation of behavior have any known correlates in brain functioning as yet. Supposing as we must, that such correlates must ultimately be discovered, we are free to conceptualize brain processes to
explain our observations, taking care that our conceptualizations do not contra-
dict what is known about brain functioning" (Sanford, 1963, p.554).

Sanford's statement is interesting mostly for its candor. If trait
psychology is going to be able to retain its most cherished assumptions it must
embellish them with new myths; so long as these revisions are not brazen untruths,
the exercise is, Sanford suggests, both necessary and correct. Sanford is by no
means alone in this belief. Allport, the principle spokesman of trait theory,
appears to subscribe to Sanford's dictum. In 1937, Allport stated that a trait
was "a generalized and focalized neuropsychic system (peculiar to the individual)
with the capacity to render many stimuli functionally equivalent, and to initiate
and guide consistent (equivalent) forms of adaptive and expressive behavior"
(G.W. Allport, 1937, p.295). By 1966, with trait theory on the defensive,
Allport not only resorted to higher-level "scientizing" but also added a new
element to his definition of trait. "Traits are cortical, subcortical, or postural
dispositions having the capacity to gate or guide specific phasic reactions. It
is only the phasic aspect that is visible; the tonic is carried somehow in the still
mysterious realm of neurodynamic structure" (G.W. Allport, 1966, p.3).

Allport is clearly in accord with Sanford's call for free conceptualiz-
ing of brain processes if it helps bolster the theory. (One might term this the
"medical model" syndrome.) In addition, Allport has embraced the unforeseeable
genotype as a further avenue of defense. "If a child is a hellion at home, an
angel outside, he obviously has two contradictory tendencies in his nature, or perhaps a deeper genotype that would explain the opposing phenotypes" (G.W. Allport, 1966, p.2). (Italics added.) While such theorizing may afford trait psychologists some added peace of mind, it does little to cover up the flaws inherent in trait theory.

What type of explanation is contained in the trait approach to personality? Traits started out as adverbs of action ('He behaves recklessly') then generalized to adjectives employed to describe an individual ('He has a reckless disposition') and finally were abstracted into nouns ('He has a trait of recklessness') (Carr and Kingsbury, 1938). The problem with this progression is that it implies that we can, at the last step, regard the trait as an entity which makes a person always behave consistently.

The trait explanation of personality is akin to the "need-reduction" explanation of motivation. To say that one has the trait of recklessness is to say that one has a need to be reckless. The problem with such functional explanations is that they are redescriptive rather than explanatory. Most "need-reduction" explanations have appealed to a broadened homeostatic model of some sort i.e. one must do this, or else. "... it might be said that people dominate others because it reduces a need in them to do so. But what is the condition being restored apart from that of the presence of others being dominated? What in this
type of case is the equivalent of the temperature level which is restored by sweating? The homeostatic model of explanation is retained, but in the absence of specific states required to define what constitutes the equilibrium it becomes entirely metaphysical" (Peters, 1969, pp. 19-20).

Peters goes on to refer to such theorizing as "justification masquerading as high-level explanation" (Peters, 1969, p. 20) and to point out the "supervenient states of quiescence and satisfaction (which) abound in psychological theories of motivation" (Peters, 1969, p. 20). Trait explanations are basically of the same nature as "need-reduction" theories, and suffer the same difficulties. The trait approach, like the "need-reduction" approach, accepts nature and endeavors to measure what it has done, but cannot tell us where the trait (however correct or incorrect the inference) came from (Cronbach, 1957).

The close relationship between traits and needs is most evident in the writings of Henry Murray. Murray suggests that the individual functions in terms of needs and that the environment (press) serves to satisfy or frustrate these needs. Need is, however, as speculative a quantity as trait. "A need is a hypothetical process the occurrence of which is imagined in order to account for certain objective and subjective facts" (Murray, 1938, p. 54). Where the need came from is unknown here too. "It seems that it (need) is a force which (if
uninhibited) promotes activity which (if competent) brings about a situation that is opposite (as regards its relevant properties) to the one that aroused it" (Murray, 1938, p.42).

P.E. Vernon, an early collaborator of Allport's, has abandoned trait theory. Vernon feels that traits will continue to be useful for describing abilities, interests, attitudes, and biogenic factors. "But it (trait theory) is unsatisfactory for general personality description: (a) because it involves non-operational theoretical constructs which are anybody's choice; (b) because behavior varies too widely in different situations to be covered adequately by a limited number of traits, etc., although certainly showing some stability and consistency: (c) because it has not worked; it has failed to yield any satisfactory system of assessment" (P.E. Vernon, 1964, p. 18).

FACTOR APPROACHES TO PERSONALITY

The factor approach to personality is an outgrowth of the trait approach. The early factor analysts of personality attempted to combine a trait philosophy with the new psychometric method of factor analysis which had led to striking success in determining units of intelligence. Spearman's factor analysis
of the intercorrelations of intelligence test scores was taken as a model for personality work. The shift from components of intelligence to components of personality was made uncritically (MacKinnon, 1944).

The factor analysts did start out with a trait notion. "A trait, whether unique or common, is a collection of reactions or responses bound by some kind of unity which permits the responses to be gathered under one term and treated in the same fashion for most purposes" (Catell, 1946, p. 61). This definition is, generally, in accord with those employed by Allport and his colleagues. But where trait theorists have completed their task, factor analysts have only begun. Their next task is to determine those factors, and clusters of factors, which are central to the organization of personality. "Unitary patterns('traits') are to be discovered by studies of covariation, first at the level of correlation clusters, or surface traits and, more analytically, by factor analysis leading to source traits unique or common (Catell, 1950, p. 628).

The factor analysts' quest, then, is to determine, on statistical grounds, the hierarchical structure of personality. On a general level, here too, we find a significant clash of human temperaments. A perusal of the exhaustive factor surveys of Guilford (1959) and Eysenck (1970) reveals Guilford's desire to demonstrate the diversity of human traits, and Eysenck's aim of accounting for numerous clusters by only a few major factors.

What assumptions does factor analysis make? First, in general terms,
factor analysis assumes that there is a linear relationship among the variables being analyzed and that factors combine additively instead of by a more complex interaction. These assumptions are at the core of the statistical reasoning of the factor analytic method, but have no clear theoretical justification in personality investigation. These assumptions are heavy constraints on personality theorizing, illustrating some of the problems inherent in the uncritical application of statistical methodology to fields as broad as personality.

The "purity" of the factor analytic approach is, in many ways, another myth that psychologists have embraced. In the simplest sense, factor analysis can only produce what has been put into it. "If researchers start with different principles and use different variables, the observed factors can differ substantially." (Pervin, 1970, p. 425) Factor analysis, then, like trait and type theories, may more clearly reflect judge's constructs than underlying personality structure.

Why then have factor analysts continued their work, believing factor analysis to be a sine qua non for the development of scientific psychology? "In belief, Catell (and other factor analysts) would argue that it is necessary to discover the fundamental dimensions of personality before one can discover the laws governing the combinations and interrelationships which exist among them. The discovery of the 'elements' of a field logically precedes the discovery of laws of their combination. The psychology of personality is in need of some analog
of the periodic table of elements in chemistry" (Brody, 1972, p. 13).

This is a compelling argument in factor analysis' favor, but the results are far from compelling. Brody's (1972) survey of factor analytic studies indicates that there is little basis for assuming a neat factor structure of personality given the inability of factor analysts to replicate their findings on either different kinds of subjects or using different testing methods. Catell's argument (1950) that factors derived from self-report measures are invariant with factors derived from behavior ratings does not appear to be warranted (Becker's survey (1960) cited by Brody (1972).)

Burt (1941) defines factor analysis as a logical method rather than a statistical one. The mathematics involved, he suggests, are more closely related to a science of logical relations, than to a science of quantity. Burt defines factors as "what factor analysts seek and find" (Burt, 1941, p. 210). This is logically akin to the traits that trait psychologists infer and the types that type psychologists infer. Factors then are not entities existent in people, but convenient descriptive categories utilized for their simplicity, descriptive accuracy and predictive power.

Factor analysis does not yield any definitive set of factors. The factors extracted in an analysis are not the only ones possible. "An infinite number of factorizations of any given set of variables is possible, the relative
merits of which have to be decided on logical and mathematical grounds" (MacKinnon, 1944, p. 35). While the logical problems should be obvious, it should also be noted that the conflict and controversy rampant in the field of factor theory strongly indicates that the mathematical grounds are by no means unproblematic.

Factor approaches to personality seem, then, to have more clearly revealed the logical structure of the personality tests they employ than the underlying structure of personality which they have sought.

STATE APPROACHES TO PERSONALITY

State approaches to personality are those theories which stress the dynamics of the organism as the principle determinant of personality and behavior. The most influential state approach to personality is Freudian psychoanalysis and its offshoots. It was Freud's discovery of the existence of unconscious mental processes, and the important role they play in human functioning, that led to theories emphasizing the interplay of forces as preeminent in determining personality. This dynamic conflict of forces is central to the state approach, whereas type, trait, and factor theories posit what are essentially static structures.

Freudian state theory stresses the importance of biological drives or instincts in propelling the individual to seek gratification or to reduce the tension
that such drives can create. The innate drives are predominantly sexual and aggressive in nature. The forces emanating from these drives are modified by defense mechanisms which the individual has adopted in his attempt to adjust to social pressures. These defense mechanisms reduce the anxiety and guilt which are now associated with the gratification of instinctual drives. Since man represses his conflicts and anxieties into the unconscious segment of the psyche, he is unaware of many of his own impulses and much of his motivation.

Freud espoused the principle of 'psychic determinism', arguing that nothing comes into the mind or no action occurs without a cause. The cause is always to be found deep in the individual's unconscious. "Thus as a rule when we have once succeeded in finding an explanation for 'irrational behavior', closer examination of our interpretation will usually disclose still other problems that can be solved only by searching further and further back into the patient's life history for the wider emotional context that is necessary to explain each new discrepancy" (French, 1944, p. 260).

Having plunged into the unconscious, how does one determine the cause of an event. "It is true that the physician cannot learn of these unconscious processes until they have produced some effect upon consciousness which can be communicated or observed. But this conscious effect may exhibit a psychological character quite different from that of the unconscious process, so that internal perception cannot possibly regard the one as a substitute for the other. The
physician must feel at liberty to proceed by inference from the conscious effect to the unconscious psychical process. He thus learns that the conscious effect was only a remote psychical result of the unconscious process, that the latter has not become conscious as such; and moreover that the latter was present and operative even without betraying its existence in any way to consciousness" (Freud, 1959, p. 612).

Thus in the state approach the judge must infer that which is directly unobservable. Elsa Frenkel-Brunswik argues that Freud's approach is rooted in an operational definition. "As in the case of the unconscious, Freud pursues an essentially operational course in defining the instincts. He does so by pointing to the capacity of the instincts to 'act vicariously for one another' and readily change their object" (Frenkel-Brunswik, 1957, p. 164). Frenkel-Brunswik is, of course, ignoring the minimal requirements of any operational definition: precise delimitation of the experimental situation, precise instruction as to what is to be observed and how the observation is to be objectified and quantified. All of these things are absent in Freudian theory, and without them the practitioner must infer causes on the basis of theoretical speculation.

In state theory, the observable behavior is taken as only an indirect sign of what is really going on. "The phenotypical 'manifest' characteristics provide only indirect cues for inferences concerning the latent genotypical forces of motivation" (Frenkel-Brunswik, 1957, p. 167). The criterion for regrouping
observable facts is one of sameness of need i.e. sameness of assumed internal cause of dynamism. State theories, then, are postulating enduring underlying dispositions which are not necessarily reflected in any consistency of overt behaviors. Therefore, overt behavior is not of prime importance to the state theorist, except as an indirect sign of the underlying disposition which 'caused' it. In fact, state theorists often use a definition of behavior quite different from the commonly accepted usage. "Behavior is broadly defined to include conscious and unconscious thought, affect, and action, which can and do substitute for one another so that behavior is a complex dependent variable" (Rapaport, 1959, p. 109).

Freudian state theory strongly stresses the importance of the past, particularly early infantile development. "Freud's theory conceives of the genesis of character in terms of pregenital drives which, under the influence of social pressures, have changed their aim or object or been otherwise modified by learning in the course of upbringing" (Brown, 1964, p. 23). This emphasis on the past has led one practitioner of Freudian state theory to claim that "...psychoanalysis makes no claims to predict behavior. Rather, like history and embryology, it is postdictive. Given a piece of behavior and its antecedents, it attempts to sift the evidence and order it into a pattern which contains the explanation for the behavior" (Holzman, 1970, p. 5).
One important difference between state theories and trait theories is this emphasis of the former on past development. State theories insist that the energy forces which operate the psyche derive from the primal origins of the individual. Most trait theorists insist upon the development of later, more mature sources of energy. Allport has termed this developmental change the "functional autonomy" of traits. "To understand the dynamics of the normal mature personality a new and somewhat radical principle of growth must be introduced to supplement the more traditional genetic concepts thus far considered" (G.W. Allport, 1937, p. 191). Allport, thus, strongly disagrees with state theory's postulation of present life energies being derived from archaic sources such as the instincts and the never-changing id.

Evaluating state theories empirically is not a simple task. The central importance of an unknowable genotypical (unconscious) basis for behavior and the complex interaction of hypothetical and unmeasurable forces does not favor direct measurement or empirical evaluation. However, Mischel (1968) does cite a couple of studies, testing state theorists assumptions, which deserve further review and note. The first of these is a study by Burwen and Campbell (1957) on attitudes towards authority and peers. State theories postulate generalized attitudes toward classes of people i.e. the problems of sibling rivalry repeating themselves in later peer relations, and the projection of attitudes toward parents onto later authority figures. These assumptions are evident in most state theories
(Holzman, 1970).

Burwen and Campbell studied air force personnel and used a variety of objective and projective measures in order to derive scores on these subjects' attitudes toward their own father, symbolic authority figures, their immediate boss, immediate peers and symbolic peers. The correlations between measures of the same target were low (.2 - .3 range) and the correlations for different types of authority figures showed no consistency whatsoever. Burwen and Campbell concluded that "evidence for generalized attitude toward authority which encompasses attitudes toward father, symbolic authority, and boss is totally negative, suggesting the need for reconsideration of the applicability of commonly held theory in this area" (Burwen and Campbell, 1957, p. 31).

A second important series of studies are Hartshorne and May's (1928, 1929, 1930) inquiries into moral behavior. State theories stress the role of the superego as the incorporation of authority figures during socialization. The superego should regulate consistent patterns of conduct and self-control. Hartshorne and May studied thousands of children (ages eight to sixteen) to determine the dynamics of moral behavior.

Their conclusions were as follows: A. "Deceit is not a unified trait. The results of these studies show that neither deceit nor its opposite, 'honesty', are unified character traits, but rather specific functions of life situations."
Most children will deceive in certain situations and not in others... Even cheating in the classroom is rather highly specific, for a child may cheat on an arithmetic test and not on a spelling test etc." (Hartshorne and May, 1928); B. "The tendencies to be of service to others, to exercise self-restraint, and to overcome obstacles or fatigue are learned just like any other skill. Children do not develop general tendencies in these directions, but specific tendencies according to the experiences they have had" (Hartshorne, May, and Maller, 1929); C. "It seems to be a fair conclusion from our data that honest and deceptive tendencies represent not general traits nor action guided by general ideals, but specific habits learned in relation to specific situations which have made the one or the other mode of response successful" (Hartshorne, May, and Shuttleworth, 1930).

In addition to these, and other studies, which question some of the theoretical assumptions of state theories, one can examine the utility of measures derived from them. "While inherently logical, the utility of the indirect sign approach to dispositions depends on the value of the inferences provided by the clinical judge. Consequently, the reliability and validity of clinicians' judgments become crucial" (Mischel, 1973, p. 254).

Numerous examinations of the utility of psychodynamic judgments have found them lacking. A case in point is Goldberg and Werts' study of the reliability of clinicians' judgments (1966). "These results averaged across four samples of
patients, clearly indicate that an experienced clinician's judgments from one data source do not correlate with another clinician's judgments from another data source, even though both clinicians are diagnosing the very same patient on - ostensibly - the very same trait!" (Goldberg and Werts, 1966, p. 205). The problems with projective tests, state theorists' basic diagnostic tool since they presumably 'screen out' effects of the environment, are clearly noted in Chapman and Chapman's paper on "Illusory Correlation as an Obstacle to the Use of Valid Psychodiagnostic Signs" (1969).

Thus the validity of state assumptions is questionable as is the utility of assessment tools derived from state theory's assumptions. These difficulties combined with the essentially inferential basis for determining dynamic causes do not speak highly for the state approach to personality. Much of P.E. Vernon's (1964) critique of trait theories (page 19 above) is also applicable to state theories i.e. it involves non-operational theoretical constructs which are anybody's choice (evident in a perusal of the conflicting works of neo-Freudians); behavior varies too widely in different situations to be covered adequately by dynamics derived from primal sources; and it has not worked. State methods of assessment do not appear to be satisfactory for the purpose for which they were devised.
CONCLUSION

Type, trait, factor and state theories share the basic assumption that behavior is determined by intrapsychic causes. In the intrapsychic view, personality consists of broad underlying dispositions which influence all aspects of behavior. Behavior, then, is consistent (from some perspective) across situations. The dispositions, whether they be traits, factors, types, or states, are not directly observable but must be inferred from behavioral signs, either directly or indirectly. (In type, trait, and factor theories, indicators are both directly and additively related to inferred dispositions; in state theories, indicators are both indirectly and nonadditively related to inferred states.) With this basic assumption, the above theorists have sought the underlying dispositions responsible for the presumed consistency in an individual's behavior.

In this quest, two basic research strategies have been employed: the nomothetic, the study of particular personality traits among large numbers of people; and the idiographic, the intense study of single individuals (Lazarus, 1971). Type, trait, and factor theories have almost exclusively utilized the nomothetic approach, while state theories have likewise restricted themselves solely to the idiographic. "One of the weaknesses of personality study thus far has been precisely this - studies identifying consistencies and testing their
generality have been carried on largely in the absence of concern for their possible origins, and the studies of causal origins of personality characteristics have been carried on largely in the absence of real concern for their generality" (Child, 1963, p. 597). Neither approach, in isolation, seems to be capable of yielding the type of information sought by personality theorists.

The important question that must be addressed in evaluating the intrapsychic theories is the validity of their assumption that the locus of behavioral control is always contained within the individual, in dispositions basic to his makeup. "The existence of enormous differences among persons is recognized by all psychologists, regardless of theoretical orientation. Critical and controversial issues, however, are the consistency of particular predispositions within an individual and the utility of searching for these generalized predispositional states in the person as the determining sources of his responses to diverse situations" (Mischel, 1968, p. 9).

Rotter has pinpointed a major weakness in the kinds of information that intrapsychic theories can provide. "There is relatively low predictive value to how much aggression a person has in terms of a percentile score (which does not tell when the person will be aggressive and when he will not be aggressive). The psychologists needs to know what kinds of stimuli or what kinds of situations result in aggressive behavior, so that he may make more individual-
ized predictions or have a better understanding of how the subject has been affected by previous experience" (Rotter, 1954, p. 260).

Intrapsychic theories simply have not accorded to the situation, the stimulus, or the environment any significant role in the determination of behavior. They have, at best, paid lip service to it, but have been essentially unable and unwilling to acknowledge its importance in the development and evaluation of personality. Rotter, a strong proponent of the incorporation of the situation into personality study, has summarized the intrapsychic theorist's position as follows: "In the half century or more that psychologists have been interested in predicting the behavior of human beings in complex social situations they have persistently avoided the incontrovertible importance of the specific situation on behavior. They have assumed that if they could only produce a somewhat better schema for attempting to describe an individual's personality from a purely internal point of view they could somehow or other overcome this failure to predict. So they have gone from faculties and instincts and sentiments to traits, drives, needs and the interaction of these within the individual, producing schema for personality organization and classification of internal states, but ignoring an analysis of the psychological situations in which human beings behave" (Rotter, 1955, p. 247).
II. THE BEHAVIORIST CRITIQUE: SITUATIONISM

RADICAL BEHAVIORISM

The situation, long ignored in the 'classic' intrapsychic approach to personality, attains central importance in the behaviorist approach. However, in the view of many critics, this 'corrective' measure is attained at the cost of discarding the integrity of the individual. It does appear that behaviorists have, in general, replaced the assumption of the integrity of the individual with the integrity of the situation.

Radical behaviorism was first formulated by John Watson (1919, 1931). Watson's view of man was in sharp conflict with the trait or state theorists who were then busily engaged in the postulating of complex inner drives and structures. "Man is an animal different from other animals only in the type of behavior he displays" (Watson, 1931, p. IX). A similar trend of thought is evident in B.F. Skinner's later claim that "every discovery of an event which has a part in shaping man's behavior seems to leave so much the less to be credited to the man himself; and as such observations become more and more comprehensive, the contribution which may be claimed by the individual himself appears to approach zero" (Skinner, 1961, p. 7).
The foregoing certainly suggests that more than the incorporation of
the situation as a determining factor is involved in the behaviorist approach.
For an understanding of the behaviorist conceptualization of personality, then,
an examination of the roots and assumptions of 'situationism' is necessary.

Behaviorists have inherited a bias towards environmentalism from
their empiricist and associationist forebearers (Berlyne, 1968). This inheri-
tance is evident in behaviorism's three basic assumptions: 1. behavior is learned
by the building up of associations; 2. man is hedonistic in seeking to obtain
pleasure and avoid pain; 3. behavior is basically environmentally determined
(Pervin, 1970).

Within the field of behaviorism, personality is not viewed as a special
case of concepts, but as behavior in general with, at most, a particular emphasis.
"In their typical view, the study of personality is essentially coterminous with
the study of behavior" (Farber, 1964, p. 4). Therefore, unlike intrapsychic
approaches, the behaviorist view of personality is to approach it in the same
way that one approaches the organism itself. Watson reflects this perspective
when he defines personality as "the sum of activities that can be discovered by
actual observation of behavior over a long enough time to give reliable informa-
tion" (Watson, 1931, p. 274).

Peterson (1968) has derived six basic theses from the radical
behaviorists' theorizing. The first thesis suggests that psychology's ultimate data should be the observation of the behavior of organisms. "The behaviorist asks: Why don't we make what we can observe the real field of psychology? Let us limit ourselves to things that can be observed" (Watson, 1931, p. 6). This thesis is in marked contrast to the intrapsychic theories in which behavior functions as a direct or indirect sign of the underlying dispositions; it is always the latter which is of prime significance, the former functions as signs to the latter's discovery. Skinner also notes this classic 'disregard' for the situation. "Many theories of human behavior, nevertheless, neglect or ignore the action of the environment. The contact between the organism and the surrounding world is wholly disregarded or at best casually described" (Skinner, 1953, p. 129).

The second thesis proposes that either mind does not exist, or is not of any significance to the scientist. "Introspection forms no essential part of its (psychology's) methods ... The time seems to have come when psychology must discard all references to consciousness" (Watson, 1914). "There is nothing wrong with an inner explanation as such, but events which are located inside a system are likely to be difficult to observe. For this reason we are encouraged to assign properties to them without justification. Worse still, we can invent causes of this sort without fear of contradiction" (Skinner, 1953, p. 27).

This thesis in effect undercuts the entire intrapsychic approach. The core of
classic approach is viewed as either unjustifiable or irrelevant to the subject matter. To further divide the two approaches, Skinner states that "the purist form of the psychic explanation is seen in the animism of primitive peoples ... It is only a modest refinement to attribute every feature of the behavior of the physical organism to a corresponding feature of the 'mind' or of some inner 'personality'" (Skinner, 1953, p. 29).

Behaviorism's third thesis is that behavior is strictly determined. While this assumption is shared by the intrapsychic theorists, for the behaviorist it is the situation, and associations built up from past situations, that determines behavior. "The situation we are in dominates us always and releases one or another of these powerful habit systems" (Watson, 1931, p. 276). "But science insists that action is initiated by forces impinging upon the individual" (Skinner, 1961, p. 7).

Behaviorism's fourth thesis is that psychology should restrict itself to stimulus - response relationships. "Since behavior is situation specific and is a function of stimulus conditions in the environment, one establishes laws concerning behavior by relating environmental changes to changes in behavior" (Skinner, 1953, p. 372). This thesis, at sharp odds with the introspectionists, is derived from the behaviorists' avowed quest for the knowledge which will allow them to predict and control behavior, and not merely understand it. "The
interests of the behaviorist in man's doings is more than the interest of the spectator - he wants to control man's reactions as physical scientists want to control and manipulate other natural phenomena. It is the business of behavioristic psychology to be able to predict and control human activity" (Watson, 1931, p. 11).

Behaviorism's fifth thesis is that scientific knowledge in psychology should be accumulated by the experimental analysis of behavior. "The basic assumption of behavioral scientists is that behavior is a function of its antecedents. These antecedents are natural events in a natural world, and the laws relating behavior to its antecedents can be discovered in the manner of other natural sciences, by the observation and analysis of empirical events" (Farber, 1964, p. 6). This thesis is related to the fourth, and in sharp contrast to the methodology employed by the intrapsychic theorists. Whereas the latter employ the correlational approach, accepting nature, measuring its effects, assuming the integrity of the person, the former employs the experimental approach, restricting its interest to variations that it can induce, and presuming the integrity of the situation. This difference in basic research strategy led Cronbach (1957) to speak of "the two disciplines of scientific psychology."

Behaviorism's sixth thesis is that psychological theorizing should be restricted to the formulation of functional relationships between stimulus and
response events. In advocating the discovery of general laws, true for all, behaviorists are disdainful of individual differences (the basic postulate of intrapsychic theorists), as impediments to the discovery of such laws. "But our experience with practical controls suggests that we may reduce the troublesome variability by changing the conditions of the experiment. By discovering, elaborating, and fully exploiting every relevant variable, we may eliminate in advance of measurement the individual differences which obscure the difference under analysis" (Skinner, 1953, p. 372).

A significant feature of the radical behaviorist approach is its claim of having discovered causal relations on a non-inferential basis. Skinner claims that "in turning to the external conditions which shape and maintain the behavior of men, while questioning the reality of inner qualities and faculties to which human achievements were once attributed, we turn from the ill-defined and remote to the observable and manipulable" (Skinner, 1961, p. 17). On one level, this distinction may seem reasonable or even obvious. But it will be recalled that in an earlier section of this paper, on trait theory, mention was made of the degree to which perception tends to be strongly influenced by an assortment of cognitive factors.

Can an observer, then, record objectively another's public behavior? Aldinolfi (1971), among others, clearly does not believe that this is as simple
or as clearcut a process as Skinner suggests. Discussing situationism, Aldinolfi states that "an assumption is made that the stimulus conditions eliciting and maintaining an individual's behavior can objectively be determined by an observer more readily than some kind of 'disposition' underlying the behavior. We have already documented the extent to which personal relevancies and/or biases determine to a great extent the final person percept and indeed the final product of much of perception. Why would these factors not serve to similarly distort the observer's designation of eliciting or maintaining stimulus conditions?" (Aldinolfi, 1971, p. 174).

In light of Aldinolfi's study, and the assortment of studies on perception previously cited, it seems that Skinner's claim is not correct. Just as types, traits, factors, and states may be more accurately considered properties of the observer than the observed, so an observer's depiction of another's behavior may be more a function of his own person than of the target other. The basic difference between the two approaches is the greater level of theorizing and abstracting found in intrapsychic theories. But this difference does not allow us to conceive of the intrapsychic approaches as subjective and inferential, while viewing the behaviorist approach as objective and observational.

Just as a person must be available to perceive and record another's behavior (and thus, from an "objective" viewpoint, taint it), so the individual
himself must perceive the stimulus if it is to have any effect whatsoever. The radical behaviorists have overlooked this, endeavoring to remain outside the organism. "The environmental manipulation approach stresses that variability is 'imposed' by the experiment, but fails to recognize that the organism itself is part of the experiment" (Vale and Vale, 1969, p. 1099). Piaget and Inhelder in a paper entitled "The Gaps in Empiricism" (1969) suggest that the central idea in behaviorist writings is that "the function of cognitive mechanisms is to submit to reality, copying its features as closely as possible, so that they may produce a reproduction which differs as little as possible from external reality" (Piaget and Inhelder, 1969, p. 118). This assumption is, on the basis of the research cited earlier, incorrect.

What behaviorists have done, then, is confuse the effective stimulus, the stimulus as selectively perceived, evaluated, and then responded to, with the physical stimulus. "If a person's reaction of 'response' to an event is determined by his perception of that event, as we have proposed, and not by the objective event itself, it follows that the truly functional 'stimulus' that evokes his response is in part determined by that response, in the sense that one of its component parts is his perceptual representation or 'interpretation' of the stimulus. Thus the functional stimulus is determined by a component of the person's total response to it, and it may be altered by that response. Can we
then hold that the stimulus 'caused' the response, when in fact the converse would be an equally accurate characterization of the situation? " (Carson, 1969, pp. 14-15).

To the extent that an individual must perceive a stimulus (situation) to be able to react to it, then an approach which remains entirely outside the organism is doomed to failure. This lesson was not lost on the later school of behaviorists, the social learning theorists.

SOCIAL LEARNING BEHAVIORISM

Social learning theories combine aspects of the radical behaviorist approach with premises derived from the works of cognitive and social psychologists. While social learning theories retain most of the basic theses of the radical behaviorists, they differ significantly in reaffirming the importance of intrapsychic mechanisms, particularly cognitive processes. "There exists ample evidence that one cannot account satisfactorily for human behavior while remaining entirely outside the organism, because overt behavior is often governed by self-generated stimulation that is relatively independent of environment stimulus effects" (Bandura, 1969, p. 39).
Social learning theorists tend to both accept the phenomena reported by radical behaviorists (behavior, here too, depends on the exact stimulus conditions confronting the individual and on his past history with this particular stimulus) and to also include phenomena attributed to the process of observational learning. Observational learning, cognitive and perceptual in nature, is based solely on contiguity i.e. direct reinforcement, believed to be essential by radical behaviorists, is unnecessary for observational learning to take place. Social learning theorists attribute a significant variety of complex behaviors (including semantic, cognitive, emotional, and motoric behaviors) to the modeling cues underlying observational learning (Mischel, 1968).

Social learning theories postulate a number of cognitive mediators which must be included in any adequate study of behavior. Imaginal mediators are those mediators related to observational learning. Imaginal mediators represent previously observed behaviors and situations. "It is exceedingly difficult to think about the actions of people in given situations or features of one's physical environment without experiencing corresponding visual imagery. The highly influential role of symbolic processes in behavioral change is most evident in vicarious or observational learning" (Bandura, 1969, p. 41).

Verbal mediators are another important group, comprising self-instructions, implicit categorizing, and the like.
Social learning theories have not been reluctant to consider intra-psychic factors as mediators of behavior. But they have been quite ambivalent about the significance of these factors. "Our social learning theory, instead of regarding internal processes as primary links in causal sequences that generate deviant patterns of response, treats such processes as mediating events ... which may be inferred from the conjunction of certain manipulable stimulus conditions and observable response sequences" (Bandura and Walters, 1963, pp. 30-31).

Bowers (1973) has reviewed the varying positions held by social learning theorists on the importance of organismic factors and concluded that "ambivalence regarding cognition has sometimes led situationism into a hesitant and conflictful compromise between equivocating acceptance and outright rejection of mental events as explanations of behavior. The compromise position seems to regard reliance upon perceptual-cognitive explanations of behavior as a temporary expedient, and to consider the extent of their use to be a measure of our ignorance about the real determinants of behavior, which of course are presumed to be properly observable, at least in principle. This delaying tactic permits one to proceed as if perceptions and cognitions are temporarily useful, but ultimately specious" (Bowers, 1973, p. 316).

Bowers' conclusion is in many ways a justifiable one. Social learning
theories have, most often, viewed cognition as a response to external events; a response that is not taken into consideration by radical behaviorists, but one that still need not be accorded the status of a determinant of behavior. A mediating factor cannot initiate, maintain, or explain behavior. It can only modify it. While this has been true in the past, there does seem to have been a recent shift towards the recognition of organismic factors as central to behavior. This position could not have been held a few years ago when social learning theorists' prime interest was in making the behaviorist approaches of Watson and Skinner better equipped to account for the phenomena of personality. But as research studies have proliferated, the mediator status of cognitive and perceptual factors has waned. The move, however, has not been towards their exclusion, but towards their inclusion as central factors in the determination of behavior.

Skinner's stand against central events (they don't help explain, they stand in the way of analysis) seems to have influenced the social learning theorists, making them reluctant to go too far in the intrapsychic direction. But Mischel, who's early work echoes Skinner's dictum, has recently told us that "assessing the acquired meaning of stimuli is the core of social behavior assessment" (Mischel, 1968, p. 190). Further, in one of his latest papers, Mischel has changed the name of his approach from "social learning" to "cognitive social learning" (Mischel, 1973). The implication is obvious.
The question, however, which remains to be answered is how much emphasis social learning behaviorists can place on cognitive and perceptual phenomena without undercutting their behaviorist framework.

Radical behaviorism's prime shortcoming is its inability to account for the individual's influence on the situations in which he is placed. Since social learning behaviorists do not remain entirely outside the organism, they do not share this problem. Social learning theorists do postulate a person effect mediating external stimuli. But does this position go far enough? "...the understanding of any one person's behavior in an interpersonal situation solely in terms of the stimuli presented to him gives only a partial and misleading picture. For to a very large extent these stimuli are created by him ... one can in many cases view consistency as a result of being in particular situations frequently, but situations largely of one's own making and themselves describable as a characteristic of one's personality" (Wachtel, 1973, p. 330).

What Wachtel is proposing is that an individual can create situations himself. This conclusion is shared by Carson in his study of interpersonal behavior. Carson believes that a person can engender the situations he faces. "When a person 'offers' behavior falling within any of the quadrants of the interpersonal circle, he is, in effect 'inviting' the other person to adopt a complementary stance in respect to both of the principle dimensions of the
circle" (Carson, 1969, p. 147). Rausch (1965) came to the same conclusion on the basis of an experimental study of hyperaggressive boys. These hyperaggressive boys engendered hostile environments, being quite successful at changing positive attitudes on the part of others to negative attitudes. Kelley and Stahelski's (1970) study of competitors and cooperators, likewise found that competitors tend to engender competitive behavior in others, thus fostering a congruent environment.

Social learning theories cannot adequately account for this phenomena since they have inherited a belief in the integrity of the situation. The best they can do is state that "psychological functioning, in fact, involves a continuous reciprocal interaction between behavior and its controlling conditions. Although actions are regulated by their consequences, the controlling environment is, in turn, often significantly altered by the behavior" (Bandura, 1969, p. 45). While this statement is interesting, it still presumes the integrity of the situation, affording to the individual, at most, the ability to alter that which confronts him. Wachtel, and others, believe that the individual can create those situations himself; and suggest that people may be most characterizable by the situations they "just happen" to run into. Social learning theories, with their presumption of situational integrity, and their experimenter manipulation of the environment, do not and can not account for this phenomenon.
Despite its shortcomings, the behaviorist approach has begun to dominate the field. In a 1963 paper, Miller noted the continued trait theory dominance of personality work and, with it, the lack of attention given to the situation as a possible determining factor. By 1971, a survey of the field by Carlson found that situationism was now so dominant that "not a single published study (out of 226 studies reviewed) attempted even minimal inquiry into the organization of personality variables within the individual" (Carlson, 1971, p. 209). The increasing behaviorist dominance of the field led Carlson to title her paper "Where is the Person in Personality Research?"

The proliferation of behaviorist studies suggests a need for a more detailed analysis of some of the theoretical and methodological problems inherent in situationism. Bowers has recently (1973) published an article which pinpoints quite well the significant errors to be found in behaviorist thinking.

In examining the metaphysical assumptions of situationism, Bowers concludes that "this situationist or stimulus-response (S-R) analysis of behavior appeals to many psychologists because it appears to be an explicitly causal analysis. Thus situationists are fond of contrasting R-R relationships which are
'merely correlational' to experimentally determined S–R relationships which are deemed properly causal in nature" (Bowers, 1973, p. 309). The correctness of this assertion can be shown by the following comments: "any mental event which is unconscious is necessarily inferential, and the explanation is therefore not based upon independent observations of a valid cause" (Skinner, 1953, p. 30), and "the causal or controlling factors that determine ... correlations of course remain uncertain. Correlations among response patterns do not reveal their controlling conditions; the latter can be clarified through experimental investigations" (Mischel, 1968, p. 95).

Situationism's language pushes for a causal explanation. First comes a stimulus, then a response; the suggestion here, clearly, is that the response is a response to the antecedent event which, then, can be said to have caused it. This notion of causality is not adequate, it is not derived from a theoretical understanding of empirical relations. It is akin to saying that antecedents cause consequences, a mode of analysis that other sciences have long discarded.

Bowers further notes that situationism tends to identify stimulus-response relations with the independent–dependent variable relations of the experimental paradigm (Bowers, 1973). Experimental studies are differentially sensitive to situational variables and basically insensitive to organismic variables. Wachtel feels, then, that "such a model of research, with the behavior
of the experimenter preprogrammed to occur independently of the myriad interpersonal cues of the subject, may be designated as the model of the implacable experimenter" (Wachtel, 1973, p. 331). As Vale and Vale (1969) note, the experimental procedure shows us what an organism can be made to do, not what it normally does. Thus this limitation which is inherent in the experimental paradigm, becomes for the behaviorist, proof of the validity of his assumptions i.e. that individual differences are reducable to envoirmental differences. "The relative insensitivity of the experimental paradigm to orgasmic factors thus becomes almost a virtue to the situationist; for if independent-dependent variable relationships cannot readily 'see' the impact of persons on their behaviors, perhaps it is because they are of relatively little importance" (Bowers, 1973, p. 310).

Situationists have made exclusive use of the experimental method, thus successfully documenting the many ways in which behavior can change. However, like the intrapsychic theorists' reliance on the correlational method, such exclusive reliance on a limited method of approach has its drawbacks. Changed environments should result in behavioral changes. When this fails to occur, the environmental changes are presumed to be insufficient, non-events. The notion that a truly changed environment must produce behavioral change has been likened by Bowers (1973) to the true insight of the early Freud which
would, also by definition, produce behavioral change. When environmental changes fail to produce behavioral changes, the event is not taken as proof of the stability of behavior across situations; can its successes, then, logically prove the instability of behavior across situations?

Mischel states that "when the eliciting and evoking conditions that maintain behavior change - as they generally do across settings - then behavior will surely change else" (Mischel, 1969, p. 1016). Bowers (1973) considers statements of this sort completely circular. What we are told in effect, is that behavior changes when the situation does, and we can tell when the situation changes because, then, behavior changes as well. This approach presumes that behavior is situation-specific, it does not and cannot prove this.

The situationists' errors, then, include mistaking presumed antecedent-consequent relations for causal explanations, presuming that independent observations can simply yield valid causes, and the presumption that a methodology blind to person effects can prove the insignificance of these effects by never finding them.

The situationist approach is not the only alternative to the intrapsychic approach, and the intrapsychic approach is not the only alternative to the situationist. An emerging perspective is attempting to combine the important features of both. "We cannot define the situation operationally except in
reference to the specific organism which is involved; we cannot define the organism operationally, in such a way as to obtain predictive power for behavior, except in reference to the situation. Each serves to define the other, they are definable operationally while in the organism–situational field" (Murphy, 1947, p. 891).
III. THE EMERGING PERSPECTIVE: INTERACTIONISM

ANTECEDENTS

In the past few years, a number of studies have raised serious doubts about both the intrapsychic approach and the situationist approach. These new findings, combined with critical reevaluations of older assumptions, have spotlighted the errors and limitations in both approaches. Out of these findings, a new approach has been gaining support. "It is my argument that both the trait and the situationist positions are inaccurate and misleading and that a position stressing the interaction of the person and the situation is both conceptually satisfying and empirically warranted" (Bowers, 1973, p. 307). But while this interactionist approach, as a school of personological thinking, may be relatively new, it has important forerunners in psychology's past.

Perhaps the most important antecedent of interactionism is the field theory of Kurt Lewin. Many of the principles of the later interactionist position are contained in Lewin's theory. It was Lewin's belief that psychology, like physics, must abandon an Aristotelian mode of thought for a Galilean approach.
What this meant to Lewin was a shift from the discovery of essences as the goal of psychology, to the discovery of laws; from speculative theories to empirical theories; and from seeking the single, isolated causes of phenomena to trying to understand the processes which determine events. (Lewin, 1935) "As far as the content is concerned, the transition from Aristotelian to Galilean concepts demands that we no longer seek the 'cause' of events in the nature of a single isolated object, but in the relationship between an object and its surroundings. It is not thought then that the environment of the individual serves merely to facilitate or inhibit tendencies which are established once and for all in the nature of the person. One can hope to understand the forces that govern behavior only if one includes in the representation the whole psychological situation" (Lewin, 1936, pp. 11-12).

Lewin, thus, was able to combine the situation, as a determiner and not merely a mediator of behavior, with an equally central person influence. His famous quotation, \[ B = f(PE) \], states that behavior is both a function of the person and of his environment. "Every psychological event depends upon the state of the person and at the same time on the environment, although their relative importance is different in different cases" (Lewin, 1936, p. 12).

Unlike the intrapsychic theories, Lewin was able to afford a central role to the situation. Unlike the situationists, he realized that the situation
itself is often a function of the person. "... the stimulus to perception must be assigned not according to its physical intensity but according to its psychological reality" (Lewin, 1935, p. 47).

Despite some brilliant theorizing, Lewin's field theory appears to have died quickly. Part of its demise can be attributed to its arrival on the scene at a time when intrapsychic approaches were immensely popular and largely uncriticized, and at a time when the situationist approach was in the process of being formulated. An alternate conceptualization was not deemed necessary.

In addition, there are significant problems with Lewin's field theory traceable to its formulator's own phenomenological orientation and fascination with topological principles. As regards the latter, the notion of forces acting at a distance in a field is theoretically untenable (F. Allport, 1955).

Lewin's phenomenological orientation is strongly reflected in his theorizing. From a phenomenological point of view, the situation presently existing is never what it was previously, or what it will be in the immediate future. Ergo, Lewin conceived of the momentary structure of the existing situation as the important determinant. "...we shall use the term psychological life space to indicate the totality of facts which determine the behavior of an individual at a certain moment" (Lewin, 1936, p. 12). (Italics added)
Lewin was adamant in his belief in the importance of the momentary situation. "Even when from the standpoint of the physicist the environment is identical or nearly identical for a child and an adult, the psychological situation can be fundamentally different" (Lewin, 1936, p. 24). Lewin's insistence on the uniqueness of the momentary situation creates serious problems for his own professed goal of predicting individual cases. For if the situation that the organism is found in is unique, then all previous observations of his interactions with his environment are not applicable to the present situation.

Lewin further compounds this problem by his deemphasis of historical events. "One could argue that psychological facts are intrinsically of a historical nature ... However, this influence of the previous history is to be thought of as indirect in dynamic psychology. From the point of view of systematic causation, past events cannot influence present events. Past events can only have a position in the historical causal chains whose interweavings create the present situation" (Lewin, 1936, p. 35). (Italics added)

The personologist is thus left without any basis for predicting behavior whatsoever. Past functioning is irrelevant to the situation in which behavior is to be predicted, and that situation is unique, by definition a situation not yet encountered and never to be encountered again. Rotter, while applauding Lewin for his firm dealings with the situation, is aware of this fundamental problem.
"...we cannot tell from Lewin's approach whether the response of a person placed in a given psychological situation is going to be one directed at getting the recognition or love of other social objects present or is going to be directed at destroying them until the organism has acted" (Rotter, 1954, p. 245).

The second important predecessor to interactionism was Cronbach's 1957 presidential address to the American Psychological Association, "The Two Disciplines of Scientific Psychology". In this address, Cronbach considered the different assumptions, emphases and methodologies employed by experimental psychologists and correlational psychologists tantamount to a split of the field into two separate and unrelated disciplines. Cronbach warned of the deleterious effects which would result from a continuation of this split. "A true federation of the disciplines is required. Kept independent, they can give only wrong answers or no answers at all regarding certain important problems. It is short-sighted to argue for one science to discover the general laws of mind or behavior and for a separate enterprise concerned with independent minds, or for a one-way dependence of personality theory upon learning theory" (Cronbach, 1957, p. 673).

Cronbach's suggestion for a federated discipline of psychology resembles Lewin's field approach and is a harbinger of interactionist theory. "It is not enough for each discipline to borrow from the other. Correlational
psychology studies only variance among organisms; experimental psychology studies only variance among treatments. A united discipline will study both of these, but it will also be concerned with the otherwise neglected interactions between organismic and treatment variables. Our job is to invent constructs and to form a network of laws which permit prediction. From observations we must infer a psychological description of the situation and of the present state of the organism. Our laws should permit us to predict from this description the behavior of organism-in-situation" (Cronbach, 1957, pp. 681-682).

In addition to Cronbach, a number of personologists have independently arrived at the same conclusion. What is interesting in reviewing some of these works, is the variety of theoretical perspectives represented, and the mixture of empirical and theoretical examinations which led these psychologists to revise their thinking. Bryne points to the amalgamation of both approaches without explicitly pointing to interaction effects. "It was inevitable that the experimental and psychometric approaches would be combined by some investigators and that the special advantages of each would contribute to the general advancement of behavioral science ... such a fusion is characterized by a simultaneous interest in the manipulation of stimulus variables and the determination of individual difference variables as additional factors influencing dependent variables" (Bryne, 1964, p. 60).
Lazarus more explicitly points to the importance of interaction effects. After reviewing a variety of approaches to personality, Lazarus concludes that "in more general terms, even in the rather automatized, so-called structural behavior of the simpler animals, there is a constant interaction between biological and environmental forces... such interactions between biological and social forces suggest the limited scope of an analysis of personality which is based on an either-or point of view concerning biological and cultural determinants" (Lazarus, 1971, p. 152).

Similarly, MacKinnon in a section of his article entitled "Resolution of the Conflict of Theories" states that "no longer can there be any doubt that there is both specificity and generality of behavior. Both personal consistency and inconsistency must be recognized" (MacKinnon, 1944, p. 43). MacKinnon goes on to point out the "situation error" of presuming that behavior is solely determined by the situation, and the "organism error" of thinking of behavior as fixed attributes of the organism, stable and unchanging. MacKinnon urges a field approach, stressing the interaction of both factors (MacKinnon, 1944).

Stern, Stein, and Bloom's conclusion, in their book Methods in Personality Assessment (1956), adds further impetus for the development of an interactionist perspective. "The psychological press has been described as a composite of what appears to be objectively present, as well as what the
individual feels subjectively to be significant. These subjective meanings are
in turn dependent upon the internal frame of reference which characterizes the
individual. The prediction of performance is based upon a study of the con-
gruence between the environmental press and the individual's personality" (Stern, Stein, and Bloom, 1956, pp. 53-54).

ANALYSIS OF VARIANCE STUDIES

As the behaviorist critique of intrapsychic approaches to personality
gained force, many psychologists abandoned their search for personality traits
to explain phenomena and turned instead to seeking situational factors which could
account for these phenomena. The results were often times more equivocable
than the situationists had expected. A case in point is the study of leadership
(reviewed by Mann, 1959; cited in P.E. Vernon, 1964). Psychologists first
treated leadership as the property of the individual. Later, leadership was
viewed as a property of the social group or situation. Mann cites the small
correlations found in numerous studies between leadership behavior and measured
characteristics (traits) of the individuals concerned. However, studies of group
characteristics as the determinants of leadership behavior have yielded even
smaller correlations. On the basis of these results, Mann suggests that the preferable approach would be to examine the interaction of both components.

With the development of the statistical method of analysis of variance, it seemed possible to determine empirically the relative contribution of person effects, situation effects, and interaction effects. A number of studies were designed and run to assess the significance of these effects (Rausch, Farbman and Llewellyn, 1960; Rausch, Dittman and Taylor, 1959; Moos, 1968, 1969, 1970; Endler and Hunt, 1966, 1968, 1969; Nelson, Grinder and Mutterer, 1969; Argyle and Little, 1972; Endler, 1973).

These eleven studies utilized three different modes of assessing behavior: stimulus-response inventories, self-observations, and observations of actual behavior. The first approach, stimulus-response inventories, accounts for the largest number of studies. The basis of this approach is Endler, Hunt and Rothstein's "Stimulus-Response Inventory of Anxiousness" (1962). Rather than conceptualizing anxiousness as an entity (trait) which people could possess in varying degrees, they felt that anxiousness could vary in at least seven ways: 1. proportion and kinds of situations in which classes of responses are exhibited; 2. kinds of situations in which responses are made; 3. number of different responses within a class which are exhibited; 4. the prevalence of various subclasses of responses within the class involved; 5. the intensity of
responses shown; 6. the duration of responses observed; 7. the relative provocativeness of situations needed to arouse the response (Endler, Hunt and Rothstein, 1962).

Endler, Hunt and Rothstein's inventory was comprised of eleven situations in which it had been determined that anxiety might be aroused, and fourteen possible modes of response - physiological responses, subjective experiences of anxiety responses, and motor activities related to anxiety states. Thus, they avoided the classic assessment of anxiety in terms of high, low, and intermediate levels of anxiousness, for an approach designed to determine what situations would induce anxiety, how the resultant anxiety would be expressed, how severe the response would be etc. This new approach is clearly better suited for the detailed assessment of a variable necessary for the psychologist to gain the ability to predict behavior.

The self-report inventory approach is introspective in nature and utilizes hypothetical situations. This should create a heavier person effect than studies using observed behaviors, since self-report measures are skewed in this direction. However, the studies of inventories of anxiousness found mixed results, situation effects were more significant at times (Endler, Hunt and Rothstein, 1962), while subject effects were more significant at other times (Endler and Hunt, 1966, 1968).
Bowers (1973) has added up the overall variances found in these eleven studies. Person effects account for 12.7% of the variance, situational effects account for 10.2% of the variance, and interaction effects account for 20.8% of the variance. These results were interpreted as having demonstrated the significance of previously-ignored interaction (person x situation) effects.

Rausch, Dittman and Taylor (1959) found that situational factors alone accounted for more variance than person factors, but that interaction effects were greater than the sum of the other two factors combined. From this, they concluded that the question of whether the person or the situation was more important was a meaningless question, that the two were coupled in a manner similar to nature and nurture. (A conclusion shared by Argyle and Little, 1972.) Endler and Hunt, on the basis of a number of their own studies, similarly concluded that "the question of whether individual differences or situations are the major sources of behavioral variance, like many issues in the history of science, turns out to be a pseudo-issue" (Endler and Hunt, 1966, p. 344).

The specific results of these studies, cited above, are only suggestive. Moos (1969) found that for smoking, 42% of the variance was accounted for by the person, and only 7% of the variance was due to the setting; for talking, 10% of the variance was attributed to the person, and fully 68% of the variance was due to the setting. This led him to note that "the percentage of variance
accounted for by different sources of variance varied greatly depending on the particular behavior being considered" (Moos, 1969, p. 409). This difficulty led Moos to point out that in analysis of variance studies "any result is possible ... the major proportion of the variance simply does not appear to be accounted for by individual differences variables. One could certainly, however, easily design studies in which the major proportion of the variance would be accounted for by individual difference variables. Frankly this is why I have stopped doing studies of this sort. It seemed to me that the point has now been amply demonstrated, and it is time to get on with other matters" (Moos, 1972, personal communication, cited in Mischel, 1973, p. 256).

An additional problem with these studies, a flaw inherent in them, is the non-random selection of situations. For an analysis of variance to be statistically valid, both factors, subjects and situations, must be randomly selected. In the studies cited above, the situations were not randomly selected, and in a few of these studies, neither were the subjects.

Both Moos' observation and the recognition of the methodological flaws in these analysis of variance studies, temper any specific conclusions that could otherwise be drawn from them. But the basic finding, nonetheless, has influenced a number of personologists and further hastened the development of an alternative viewpoint. The conclusion drawn parallels Endler's own
conclusion. "Because of the complexity of human behavior it is our belief that a useful paradigm for the trait versus situation issue in personality research is one that examines the relative contribution of situations and individual differences to behavioral variance, and that determines how situations and individuals interact in evoking behavior" (Endler, 1973, pp. 299-300).

THE BASIC APPROACH

Many aspects of the emerging interactionist perspective have already been mentioned in earlier critiques of its intrapsychic and situational predecessors. Interactionism as a school of personological thinking has no set of laws or rules at this point in its development. What it does have are some general principles. These principles, save for the influence of Lewin's field theory, are derived from critical examinations of intrapsychic approaches and, especially, critiques of the now-dominant situationist viewpoint.

Bowers cites as the hallmark of the interactionist view the belief that "situations are as much a function of the person as the person's behavior is a function of the situation" (Bowers, 1973, p. 327). In the preceding review of situationism, these complementary points were made: radical behaviorism erroneously neglects the necessity of a human perceiver to perceive stimuli (or, as George Kelly (1955) would put it, reality exists for a person as a
function of his means and methods for knowing it); and the social learning theories overlook the extent to which people help create the very situations they face.

Interactionism, then, derives its basic credo from the errors of its predecessors. Both the situation and the person play central roles in interaction theory, but in relation to one another, not as separate and unrelated entities. "Interactionism argues that 'reality' is construed, that it emerges out of a continuously revived equilibrium or balance between the knower and the known - between assimilation and accomodation" (Bowers, 1973, p. 330).

Issues which are black and white to intrapsychic theorists and situationists are grey to interactionists. For example, "the two disciplines of psychology" have long debated whether behavior is basically consistent across situations or specific to them. The intrapsychic theorists posit some notion of behavioral consistency, but Mischel's exhaustive review of the available data finds consistency only for ability measures, showing highly inconsistent behaviors for other personality variables (Mischel, 1968).

The situationists posit a great discriminative faculty to account for the highly situation-specific behaviors they postulate. "The 'specificity' so regularly found in studies of non-cognitive personality dimensions accurately reflects man's impressive discriminative faculty and the inadequacy of the assumptions of global dispositions and not merely the distortions of measurement" (Mischel, 1973, p.258).
Or does it? The distortions of measurement are certainly present in the methodologies employed by both paradigms. In addition, the studies of person perception, cognitive consistency and the like do not, if anything, support the behaviorists' assertion. "One is struck by the extent to which enormous discriminatory powers are ascribed to persons, this in the face of numerous studies in person perception literature showing feeble, if any, discriminatory ability" (Aldinolfi, 1971, p. 174).

While both approaches insist on extreme positions in this debate, interactionists are free to posit a mixture of both consistency and 'specificity' in behavior. Arguing for consistency is the degree to which people tend to both perceptually seek harmony in their environment and to create harmony in it. Arguing for 'specificity' (or more appropriately inconsistency) is the degree to which people seek out novel experiences or find them in the environment as well as their inability to always resolve conflicting events. Behavior, then, is both consistent in some cases and inconsistent in others. The issue of consistency versus specificity is thus another pseudo-issue.

Interactionism can perhaps be better defined in terms of what it is not, rather than what it is. For the significance of interactionism lies not so much in its few tentative formulations, as in its act of breaking away from its flawed predecessors. Unlike the social learning theorists, who likewise attempted some
sort of reconciliation of the opposing approaches, interactionism is not bound to one of the competing perspectives. Where the social learning theorists attempted to 'humanize' behaviorism, the interactionists are attempting to replace both perspectives with formulations stressing the mutual dependence of situations and people in any determination of behavior and personality.

The trait versus situation debate has begun to resemble the old nature-nurture controversy. In the latter squabble, it took psychology a couple of hundred years to abandon the rhetoric of both adversaries and recognize the interrelationship that exists between the two of them. Interactionism is attempting to free personology from two limited and limiting paradigms, both of which have outlived their usefulness. Despite past accomplishments, so long as the situation is anathema to intrapsychic theorists, and so long as the person himself is either excluded or considered as merely a mediator in the situationist approach, neither can further advance the study of personality. Interactionism exists as a needed and yet to be formulated alternative.

MODERATOR VARIABLES : ANOTHER ALTERNATIVE

In addition to the interactionist approach, a second alternative to intrapsychic and situationist approaches has emerged in the past few years. This is the
moderator variable strategy, developed by Kogan and Wallach (1964, 1967) in their studies of risk taking. Moderator variables are factors such as the subject's age, sex, I.Q., experimenter's sex, and the like, presumed to be important modifiers of behavior. These variables are to be isolated by an analysis of data. Once the moderator variables can be determined, people can be divided into groups defined by combinations of these variables. Once the population has been divided up appropriately, behavioral consistency will be found within these groups.

Kogan and Wallach found that test-taking anxiety and defensive need for social approval were the moderator variables affecting risk taking behavior. Having isolated these variables by means of a complex moderator analysis, they then separated high anxiety - high defensive individuals from others. This separation of subjects into rational and irrational risk takers yielded substantial correlations between predictors of behavior and behavioral measures. Kogan and Wallach concluded that irrational risk takers (high anxiety, high need for approval individuals) ignore situational differences in their neurotic search for approval; rational risk takers were presumed to be more responsive to the cognitive features of the tasks confronting them (Kogan and Wallach, 1964, 1967).

The moderator variable strategy argues for behavioral consistency, yet against traits as the determinants of the consistency (Bowers, 1973). Alker, a staunch proponent of the intrapsychic viewpoint, has hailed moderator variables
as "a new paradigm for personality research" (Alker, 1972, p. 11). Bem, while challenging Alker's critique of Mischel, shares with Alker the view that moderator variables offer a promising alternative (Bem, 1972).

Despite these endorsements, Wallach and Legget have pinpointed problems with the moderator variable approach: attempts to replicate Kogan and Wallach's results have failed. "Further analyses and additional data collected by us and others suggest that not only are findings ungeneralizable from one sex to the other, but even when, within sex, one simply tries to duplicate the results of a given study, such attempts do not pan out ... the empirical basis for recommending moderator variables as the answer to the search for consistency thus seems more apparent than real" (Wallach and Legget, 1972, p. 313).

Moderator variables do not represent a viable approach for personology. In addition, it is doubtful that moderator variables ever represented an alternative to traits and situations. Wallach has, himself, termed moderator variables not a new paradigm, but a conservative modification of the intrapsychic perspective. "The assumption is kept that it is appropriate to seek evidence for consistency by inferring traits or dispositions from the intercorrelating of behavioral signs. The difference is in the proposal that people only of a particular type, rather than all people, will show these correlations" (Wallach and Legget, 1972, p. 311).

Moderator variables are thus as tied to intrapsychic theories as social learning theories are tied to situationism. Both revisions contain the important
limitations of their predecessors. Neither represents a new paradigm for personality study. The demise of the moderator variable approach should further point towards an interactionist perspective as the only viable alternative to traits and situations.
PART II. LOCUS OF CONTROL: THE VARIABLE

IV. DEFINITION AND GENESIS OF THE CONCEPT OF LOCUS OF CONTROL

The concept of 'expectancy' was formulated by the early social learning theorists (Rotter, 1954, 1966; Phares, 1957; James and Rotter 1958). An expectancy is a cognition derived from an organism's social learning history. "In social learning theory, a reinforcement acts to strengthen an expectancy that a particular behavior or event will be followed by that reinforcement in the future" (Rotter, 1966, p. 2).

The notion of an expectancy is derived from social learning theory's interest in combining behaviorist tenets with cognitive and social factors. From the radical behaviorists, Rotter et.al. borrowed an emphasis on an organism's reinforcement history as helping determine present and future behavior. Unlike the radical behaviorists' insistence on direct reinforcement, the social learning theorists include both direct and indirect reinforcements (observational learning, modeling and the like) as significant determinants of expectancies. In addition, an expectancy is a cognition developed by a person on the basis of his understanding
of past behavior-reinforcement events i.e. not the events themselves.

Locus of control is a special type of expectancy. The variable was derived from studies of the differences in the learning process under skill and chance conditions. In one of these studies, Phares (1957) confronted subjects with a single task, instructing some subjects that success was contingent on their own skill, and others that success was chance controlled. All subjects received the same reinforcement schedule, but Phares noted that subjects with skill directions changed expectancies more frequently and more in the direction of past experience than did subjects instructed that chance alone determined success or failure. From this, Phares concluded that when a task is seen as determined by one's own skills, a subject relies more heavily on past performance in formulating expectancies.

James and Rotter (1958) studied the effects of partial versus 100% reinforcement upon trials to extinction, using the skill versus chance variable. They found more rapid extinction (going from 100% to 0% reinforcement) in the chance condition. James and Rotter presumed that chance subjects perceived such changes as signaling a change in the task situation. Under skill conditions, subjects were more persistent in the face of no reinforcement, presumably attributing non-reinforcement to lack of skill.

In another important study, Phares (1962, cited in Rotter, 1966)
examined perceptual thresholds for shock-associated stimuli in both chance and skill situations. Subjects under the skill condition were more likely to exhibit perceptual behavior which allowed them to cope with potentially threatening stimuli, than did those subjects who felt that chance or other forces outside their control would determine their success.

On the basis of these (and similar) findings, Goldberg concluded that "when operating under skill conditions, a subject appears to make use of past reinforcement history in formulating expectancies, be more responsive to success and failure in a more realistic way i.e. make less unusual shifts, take longer to extinguish when he is convinced that his ability is relevant, and become more vigilant in order to enhance his ability." (Goldberg, 1970, p.6). Similarly, Rotter concluded that "when a subject perceives the task as controlled by the experimenter, chance, or random conditions, past experience is relied upon less. Consequently, it may be said that he learns less, and under such circumstances he may indeed learn the wrong things..." (Rotter, 1966, p. 8).

On the basis of these findings, social learning theorists' postulated that reinforcement itself would be differentially perceived and reacted to depending on the "degree to which the individual perceives that the reward is contingent on his own behavior or attributes vs. the degree to which he feels the reward is controlled by forces outside of himself and may occur independently of his own actions" (Rotter, 1966, p. 1).
Thus the social learning theorists have abstracted from their studies of learning under chance and skill conditions what they believe to be an important modifier of reinforcement: the person's perception (or non-perception) of a causal relationship between his behavior and the reinforcement that follows. It is postulated that an individual who perceives said causal relationship will behave as though he were in a skill situation; and that an individual who does not perceive a causal relationship between his behavior and the reinforcements he may receive, will behave as though he were in a chance situation.

Rotter termed the perception of no causal relationship between behavior and reinforcement 'external control'. "When a reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then, in our culture it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of forces surrounding him" (Rotter, 1966, p.1). Perception of said causal relationship is termed 'internal control'. "If a person perceives that the event is contingent upon his own behavior or his own relatively permanent characteristics we have termed this a belief in internal control" (Rotter, 1966, p. 1).

An expectancy, then, is created on the basis of an individual's construction of his past reinforcement history. An expectancy should not be significantly modified by a reinforcement (non-reinforcement) event perceived by
the individual as not being contingent on his behavior; similarly, an expectancy should be affected by a reinforcement (non-reinforcement) event perceived as contingent upon behavior.

This differential perception of reinforcement was viewed by social learning theorists' as a possible basis for individual differences. "It seems likely that, depending on the individual's history of reinforcement, individuals would differ in the degree to which they attributed reinforcement to their own actions" (Rotter, 1966, p. 2). Locus of control (external control of reinforcement versus internal control of reinforcement) is thus considered both an important variable in understanding learning under different conditions, and a consistent individual difference among people in the degree to which they perceive reinforcements as under their personal control.

For an expectancy of internal or external control to be viewed as a consistent individual difference, expectancies must be presumed capable of generalization. Rotter has recognized this, terming the locus of control variable a 'generalized expectancy'. "Expectancies generalize from a specific situation to a series of situations which are perceived as related or similar. Consequently, a generalized expectancy for a class of related events has functional properties and makes up one of the important classes of variables in personality description" (Rotter, 1966, p. 2).
Locus of control, then, is defined as a generalized expectancy that one's reinforcements will either be contingent on one's acts (under one's personal control) or the result of luck, chance, fate, powerful others and the like (outside of one's personal control).

The popularity of the locus of control variable (Throop and Macdonald's (1971) "Internal - External Locus of Control: A Bibliography" lists 339 articles on the subject to the end of 1969) is probably a result of the major concern in psychological circles with man's ability to control his environment. In this, Rotter's variable is related to the personological works of Alfred Adler and Robert White (Lefcourt, 1966b). Adler postulated a universal 'striving for superiority' based on man's inherent inferiority. Adler's prime concern was the effectiveness man could attain in controlling his world (Ansbacher and Ansbacher, 1956). Robert White, similarly, postulated competence and effectance motivations as basic to man's being in the world (White, 1959). Also related is Richter's (1959) work (cited in Goldberg, 1970) on the phenomenon of sudden death in rats. Richter's study showed that helplessness and loss of escape routes (i.e. externality) may result in sudden death.

Recently, concern with man's control of his environment has been reflected in the learned helplessness literature, which endeavors to induce expectancies of external control of reinforcement (helplessness) in different
situations and examine the consequences. "...helplessness has been offered as an explanation for instances of mysterious and sudden death, for interference with the ability to operate in stressful or dangerous situations, and for the behavior of many prisoners in Nazi concentration camps" (Roth and Bootzin, 1974, p. 253).
V. ROTTER'S I-E SCALE: AN EVALUATION OF THE MEASURE

Social learning theorists have employed two basic research approaches to perceived locus of control. The first utilizes specific situationally-determined expectancies manipulated by instructions to given tasks (the studies reviewed above). The second approach aims at studying the generalized (asituational) expectancies that individuals have developed by means of scales measuring the control dimension (Lefcourt, 1966a). Rotter et al. thus seem to have rather easily made the leap from the experimental study of expectancies of control to the correlational study of generalized expectancies. To do so, Rotter and his associates assumed that expectancies of control could generalize to such an extent that situational factors, crucial to the development of such expectancies, could later be ignored in the analysis of individual differences.

The social learning theorists further assumed that the general control expectancies that individuals' possess could result in characteristic differences in behavior, just as the specific expectancies induced in the experimental studies had led to different responses.

Prior to measurement, Rotter and associates postulated a number of important personality dimensions that they believed could be explained on the basis of different loci of control. Passivity, it was suggested, was akin to a belief in
luck or chance, and thus represented external control of reinforcement; alienation was defined as a feeling of powerlessness (external control); need for achievement, it was suggested, presumed some belief in one's own ability to determine the outcome of one's efforts (internal control); field dependence, it was suggested, was predicated upon external control of reinforcement (Rotter, 1966). While such relations were hypothetical, the simplicity of the logic underlying them doubtlessly lent further encouragement to the social learning theorists' efforts to determine individual differences in locus of control.

A number of scales were developed to measure locus of control. The I-E Scale was developed by Leverant, Seeman and Rotter; it drew upon some of the earlier attempts at test construction and underwent much statistical analysis and refinement. The I-E Scale is a forced choice test containing twenty nine items, six of which are unscored fillers. Each item consists of two statements, one of which is presumed to be indicative of an internal orientation, the other an external orientation. All external responses are scored as one point, internal responses receive a zero. Total scores therefore range from a zero (perfectly internal) to a twenty-three (perfectly external).

The social learning theorists' belief in the generalizability of expectancies of control is reflected in the format of the items. "A careful reading of the items will make it clear that the items deal exclusively with the subject's belief about the nature of the world. That is, they are concerned with the
subject's expectations about how reinforcement is controlled" (Rotter, 1966, p. 10). The test measures general beliefs about the world, and is therefore highly asituational in content. Two examples may help to clarify this: "4a. In the long run people get the respect they deserve in this world. 4b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries ...

15a. In my case getting what I want has little or nothing to do with luck.
15b. Many times we might just as well decide what to do by flipping a coin"
(Rotter, 1966, pp. 11-12). (The complete I-E Scale is included in the Appendix.)

While a number of other scales measuring locus of control have been offered, the I-E Scale is the one most commonly employed. Psychologists have used the test to relate locus of control to a number of personality dimensions. The standard procedure in these studies involves first assessing a group of subjects' locus of control, then determining these individuals' scores on some other personality dimension, and finally comparing the two. Most studies restrict their comparison to those individuals at the extreme ends of the I-E Scale (strong internals and strong externals). The attempt is made to demonstrate significant differences in the criterion scores for these two groups which could presumably be a result of differential expectancies of control.

Goldberg's (1970) review of the locus of control literature lists twelve personality correlates that have been examined: achievement motivation, academic achievement, action-taking, information seeking and utilization, anxiety and maladjustment, repression, conformity, risk-taking, task
preference, hostility, field dependence and Machiavellianism. A perusal of Goldberg's review suggests that perhaps as many as three of these personality dimensions have been positively correlated with internality-externality in replicable studies. However, even here, locus of control may account for no more than four percent of the variance in criterion scores between the two groups (while still producing 'statistically significant' results). A couple of the other dimensions have led to studies with equivocal results. The majority of the dimensions have yielded contradictory results. The experimental findings do not substantiate the social learning theorists' claims.

This failure to demonstrate hypothesized behavioral differences between internals and externals could be due to: 1. inadequacies in the measurement of the locus of control variable; 2. inadequacies in the measurement of the criterion variable (need for achievement, hostility, etc.); 3. no true causal relationship existing between generalized expectancies for control and the hypothesized personality correlates.

The failure of experimental studies to demonstrate the relationships postulated by Rotter and his associates, then, can only be taken as disproof of the theory to the extent that both measurements adequately assess the variables being tested. Inadequacies in the measurement of either or both could mask a true relationship (if indeed one does exist). The failure of studies employing
relatively objective criterion (for example, grade point average, class rank and
the like to assess academic achievement) to demonstrate the hypothesized relationship with locus of control suggests that the measurement of the general expectancy variable itself may be in error. An examination of the I-E Scale appears warranted.

The scale, as mentioned earlier, attempts to assess an individual's
general expectancies of control by means of test items designed to tap his general beliefs about the world. The test is quite asituational; those items which are not global in scope are still very general. Insofar as the test measures general beliefs about the world and ignores the situation as a determining factor, it is analogous to an 'intrapsychic' instrument. As such, it suffers from the same conceptual difficulties which plague all intrapsychic personality assessment instruments. (See Chapter One above.) In particular it should be noted that like other intrapsychic instruments, the I-E Scale presumes that an individual's choice of response between two forced extremes is a significant projection of his true beliefs, where in fact neither alternative may seem correct to him (especially as regards its global implications), and his choice may have been arbitrarily made.

The I-E Scale may also be differentially sensitive to externality and somewhat insensitive to internality. The reported adult population mean on the scale is 8.5 (Lefcourt, 1966b). This means that subjects' scores are skewed
towards the internal end of the scale. This bias could be due to: 1. the scores on the test accurately reflecting cultural values which tend to instill a belief in personal control in people; 2. the confounding of test scores with the greater social desirability of the internal responses over the external responses; 3. a test artifact (other than contamination with social desirability). The bias, then, could reflect a true bias in the population (one above), an instrument-determined response bias (two above), or some other (at present unspecified) instrument bias (three above). One can only assume that the bias is a true bias in the population if one can discount the other two explanations for the phenomenon.

The I-E Scale's reliance on surveying general beliefs in order to assess locus of control may then be in error in: 1. overlooking possible situational determinants still operating at the general expectancy level; 2. presuming that the possibly arbitrary selection between 'poor' response alternatives constitutes a significant projection of true beliefs; 3. eliciting responses based, at least in part, on the social desirability of the choices. Social desirability should logically play a strong role in any instrument which taps general beliefs. (Social desirability may also play a role in choosing responses to specific situations i.e. what is the correct thing to do in this situation, but it is maximally implicated in responses which demand hypotheses about the nature of the world i.e. are maximally distant from an individual's own experiences.) One would expect individuals
to examine the "social implications" and "correctness" (after all this is a test) of admitting that luck determines everything before responding to the item, their own beliefs notwithstanding. Thus I-E scores may tell us more about an individual's understanding of social mores and values, than about his feeling of control over the reinforcements he receives.

"Internals" on the I-E Scale may be individuals more sensitive to the social desirability of their responses than are those individuals with more mixed scores. "Externals" may be individuals consciously defiant of societal values. (Externals could also be members of "deviant" subgroups in which a belief in the omnipotence of forces outside of one's control may have been instilled, or they could be so "pervasively helpless" that they are oblivious to the implications of the test-taking process. In either of these cases, scores at the external end of the scale would be true external scores.)

Since few individuals score at either extreme of the scale, many of the studies reported have used as "internals" individuals a few points removed in scores from "externals". With this small demarcation between the groups, the possible contamination of scores by social desirability seems especially important.

The I-E Scale, then, ignores situational effects, presumes all forced choices are significant projections of true beliefs, tends to elicit responses determined perhaps as much by social desirability as by expectancies of control,
does not appear capable of differentiating individuals (Rotter, 1966), and is not capable of differentiating groups with any assurance.
VI. ASSESSING THE UTILITIES OF TRAIT
AND INTERACTION APPROACHES

AIMS OF THE STUDY

Locus of control is a personality variable which may play a significant role in a number of psychological phenomena. Experimental work to date has not adequately determined the contribution of general expectancies of control to differences in human functioning. The I-E Scale, the principle assessment instrument for locus of control, has been termed a "trait" instrument - one which measures the construct by tapping a subject's general beliefs about the world and presumes that the forced choices made among dichotomous responses represent significant projections of belief. The I-E Scale has been criticized on grounds applicable to any intrapsychic instrument.

This paper's earlier discussion of general approaches to personality (Part I above), suggests that an interactionist approach to locus of control would be preferable to the present trait-based I-E Scale. An interaction locus of control instrument could: 1. correct for the I-E Scale's error of ignoring situational determinants by examining the interaction of person and situation in the evaluation of general expectancies of control; 2. correct for the I-E Scale's
presumption that forced choice responses are significant projections of belief by giving subjects a range of response options to specific situations; 3. correct for the contamination of responses to the I-E Scale with social desirability by making the situations ambiguous and maximally relevant to the subject; 4. correct for the I-E Scale's inability to differentiate individuals by examining person-situation interactions in sufficient number and detail; 5. correct for the I-E Scale's frequent inability to differentiate groups (an instrument capable of registering individual differences should be able to discriminate groups if, in fact, such hypothesized group differences do exist).

The construction of an interaction locus of control instrument could, it is postulated, accomplish the following: 1. evaluate the locus of control construct from a different viewpoint, which may help resolve the question of the significance of the construct; and 2. allow for an experimental comparison of trait and interaction approaches to personality i.e. experimentally evaluate the claim (Part I of this paper) that an interactionist approach to personality is to be preferred to an intrapsychic approach.

Person and situation interactions have only been investigated in the flawed analysis of variance studies cited earlier. It would be useful to be able to test the significance of such interactions using a different design. The determination of the correlation of an interaction-based predictor of behavior with some
relevant measure of behavior would accomplish this. To lend meaning to the above correlation, one could compare the interaction-behavior correlation with a trait-behavior correlation. The interactionist approach would have to do significantly better than its trait counterpart if its promise is to be realized.

The present study was designed to assess the utility of an interaction-based assessment instrument, and to determine whether such an approach could improve upon our present, largely intrapsychic, tests and scales. Locus of control was chosen as the variable to be examined solely on the basis of its potential importance. Numerous other variables could have been explored. The criticisms leveled at the I-E Scale apply, in general, to their assessment instruments as well. In these other cases, too, we are still largely unsure/unconvinced of the relationships between constructs and hypothesized behavioral correlates. To the extent that the present study helps clarify the meaning of the locus of control construct, it should contribute to our understanding of these other variables as well.

It should be noted that this study is considered by the present author to be exploratory in nature. The study endeavors to explore the relationship between intrapsychic and interaction approaches to locus of control. The study will attempt to examine the relationship between the two approaches as well as the relationship of both (as predictors) to a criterion. The study will also explore the relationship among interaction items, a necessity given the dearth of such
instruments in the literature.

The perspective followed in this study is in accord with Campbell and Stanley's (1966) thesis that experimentation is designed to probe, not to prove a theory. Such probes may find a theory lacking or find it capable of escaping disconfirmation. In the latter case, the theory will hold until a better alternative is suggested. (This notion is akin to Peters' view of scientific hypotheses as myths about the nature of the world. See the Introduction to Part I above.) In addition, Campbell and Stanley point out that "...correlation does not necessarily indicate causation, but a causal law of the type producing mean differences in experiments, does imply correlation" (Campbell and Stanley, 1966, p. 64). To the extent that earlier studies of locus of control have not found significant correlations between the control construct and behavioral measures, the theory has been disconfirmed. The present study is intended to probe the hypothesis that some of the difficulty in confirming the theory may be due to the measuring instrument that has been utilized and to the theoretical assumptions (the intra-psychic approach) which underlie that instrument.

THE PROBLEM OF SPECIFICITY/GENERALIZABILITY

Central to the debate between intrapsychic theorists and situationists is the question of how general (consistent across situations) versus how specific
is human behavior. The situationist believes behavior to be specific to the situation which elicited it. The experimental paradigm he employs demonstrates this clearly, and does not allow for the investigation of generalization i.e. the situation only changes when behavior changes, ergo any behavioral consistencies are attributed to the presumably static nature of the situation. Intrapsychic theorists, on the other hand, invest much energy in demonstrating the consistencies in behavior, freely making use of the unseeable to refute what inconsistencies they can't help but see.

The problem of the specificity of behavior versus its generalizability is of central importance in our present study of locus of control as well. Rotter's orientation is more situationist than intrapsychic. Rotter's expectancies are built up on the basis of behavior-outcome events (he does not, then, ignore the initial importance of the situation). However, Rotter does believe that locus of control is a generalized expectancy, a concept which functions like traits do. Situationists warn against this extrapolation; they prefer to deal with more circumspect if-then hypotheses about contingencies (Mischel, 1973).

Situationists, as noted earlier, tend to stress the discriminative aspect of human functioning; the intrapsychic theorists stress the cognitive consistency aspect. An interactionist perspective would recognize both phenomena and suggest that there may be, in general, a lawful relationship between the two which would nonetheless inevitably be modified by the idiosyncratic organization
of human experience. Further study would be necessary to determine the functional similarity of situations, both in general (across people) and for particular individuals.

Rotter's generalized expectancy of control measure presumes that a parsimonious life orientation score can be determined on the basis of responses to a variety of general beliefs about the world items. The foregoing discussion suggests that while expectancies may generalize somewhat, they may have strong limitations as well. An expectancy of control in social situations measure may be a much more useful variable than a generalized expectancy score. Similarly, an expectancy of control in relations with same sex peers (or parents, etc.) measure may be more useful than a social relations I-E score. We do not know at the present time at what level we can legitimately (usefully) generalize locus of control. There is no reason, however, to suggest that subloci of control are not possible, nor that they could not vary among one another greatly. If subloci of control are present, and contradict one another, then our I-E score may be hopelessly muddled. The I-E Test, then, might be useless in predicting behavior not only because of its neglect of the situation in determining I-E, but also because it is too broad in scope.

In light of this problem, the present study will examine both generalized expectancies of control and two subloci, academic locus of control and social
locus of control. A general interaction locus of control score would have to be computed to allow us to compare the utility of Rotter's trait approach to an interaction approach. Were only subareas to be examined, we could very well produce artifactual differences in predictive ability that did not relate to differences in basic conceptualization. The examination of the academic and social subscales could suggest how related subloci of control are to one another and thus how valuable it would be to determine more limited loci of control and to use them in predicting behavior. Our study, then, will attempt to evaluate both the utility of an alternate approach to measuring locus of control, and the utility of limiting the scope of the variable.
PART III. METHOD

VII. CONSTRUCTION OF QUESTIONNAIRES

AN INTERACTION MEASURE OF LOCUS OF CONTROL

In constructing an alternate instrument for measuring locus of control one must determine the basic methodological approach to be taken, the variables to be manipulated, the general content area (domain) to be measured, and the specific format that the measuring instrument will follow. The basic methodological approach refers to those aspects of the instrument which define it as an interaction assessment instrument and which also differentiate it from an intrapsychic instrument (allowing for a comparison of the two approaches). The variables to be manipulated can be identified by an analysis of the control construct i.e. determination of the major components which comprise the construct. The domain to be sampled refers to the presumed scope of the construct - whether we conceive of locus of control as completely generalized (unrestricted domain), or examine subloci of control (restricted domains). The format of the instrument refers to the specific approach the instrument will take in assessing the control construct. The format should be suitable for the realization of the instrument's methodological
goals, for the manipulation of variables deemed worthy of examination, and for the sampling of the relevant domains.

The methodological goals of the instrument, as mentioned earlier, are the assessment of person-situation interactions (requiring the incorporation of situation factors as well as person factors); the assessment of true interactions and not the assessment of social desirability or other extraneous factors (requiring that situations be maximally relevant to subjects, that situations be somewhat ambiguous in nature, and that a range of response choices be offered); and the differentiation of individuals (requiring a sufficient number of items and sufficiently detailed interactions). The first goal above, defines the core of the alternate approach (the examination of person-situation interactions versus the examination of general beliefs), the latter two goals attempt to account for other flaws inherent in the traditional approach.

Locus of control refers to whether a person perceives himself to be responsible for the outcomes of his acts (an internal orientation), or whether he perceives responsibility to lie outside of himself (an external orientation). Rotter and the other early social learning theorists considered skill and luck to be the sole determinants of the control construct, therefore they manipulated only these two variables. Weiner, Frieze, Kukla, Reed, Rest and Rosenbaum (1972) postulate four causal elements: ability (or skill), effort, task difficulty, and luck.
Ability and effort were considered properties of the individual, task difficulty and luck are properties of the environment. (The further classification of these determinants into stable and unstable elements has not been deemed relevant to the present study and is, therefore, unaddressed here. See Weiner et. al., 1972.)

Weiner and his associates suggest that these four elements are utilized to both postdict and predict achievement-related events. An examination of their review of a number of experimental studies finds strong support for the postulation of all four variables. Therefore, it was decided that Rotter's two variables are not sufficient, and that the four elements Weiner has suggested should constitute the variables to be manipulated by the interaction measure of locus of control. Subjects could postdict, or interpret, the outcome of events where ability, effort, task difficulty and luck had been varied. The outcomes could be interpreted in terms of the degree to which internal factors or external factors were perceived as responsible for the outcome.

It is assumed that in real life situations all four factors interact, and that people would vary in terms of the significance they attribute to each factor. This suggests that no situation could be objectively perceived by all subjects, that what we are in fact measuring is the degree to which individuals tend to emphasize or deemphasize these determinants in a target situation. Our subjects' responses, however, can be greatly affected by the degree to which various determinants
are explicitly stressed in the wording of the situations. This allows for the manipulation of our four variables.

Rotter defines locus of control as a generalized expectancy, unlimited in scope. The relevant domain is unrestricted. The construct includes all areas of life in which individuals have expectancies for control of reinforcement. However, in an earlier section of this paper it was suggested that this positing of a general control orientation may obstruct important differences in subloci of control. To probe this hypothesis, more restricted domains could be sampled. The use of college students as subjects argues for the examination of two rather large (but restricted) domains: expectancies for control of reinforcement in academic situations and expectancies for control of reinforcement in social situations. The academic area was chosen because of the resemblance colleges bear to Goffman's notion of "total institutions" (Goffman, 1961). The social area was chosen because of the universal emphasis that theories of psychological development accord to social relationships during late adolescence and early adulthood. These two domains will be sampled and separate subloci of control will be evaluated. Our general expectancy measure will be constructed from a combination of both sub-areas. It is assumed, then, that for college students the social and academic areas, taken together, constitute the major part of the universe of expectancies for control of reinforcement.
The specific format of the interaction locus of control instrument is influenced by Goldfried and D'Zurilla's behavior-analytic model for assessing competence (Goldfried and D'Zurilla, 1969). In developing an instrument to assess competence, Goldfried and D'Zurilla constructed target situations and examined the relevant background information contained in the items, the problematic situations presented, the various responses that could be elicited and the consequences that would result from these responses. They termed their self-report measure of the variable 'cognitive role-playing'. The interaction assessment instrument was constructed along similar lines. Situations were drawn up and an analysis of them was undertaken to assess the relevance and meaningfulness of the situations as regards the control construct being evaluated, the experiences of individuals in the subject pool, and the domains being sampled. An examination of the entire range of possible responses to the situations was not undertaken given the postdictive nature of the interaction instrument. The consequences of response choices were assessed only in relation to the control construct.

The foregoing analysis resulted in the construction of twenty situations. Each of these items is followed by a target perception (interpretation) of the situation to which subjects are asked to respond. A six-point rating scale was constructed for this purpose. The scale has no neutral point, since a response of this nature is uninterpretable. Subjects can agree strongly, agree, agree slightly, disagree slightly, disagree, disagree strongly with the target interpretations. For
example, item five depicts a situation where a number of things have gone wrong in the past week. The interpretation presented suggests that these misfortunes can be attributed to bad luck ("These things happen sometimes, there's not much I can do about them"). Agreement with the statement is scored as an external response, disagreement is scored as an internal response. Responses are scored along a continuum. In the case of item five, strong agreement would receive the maximum score of six, strong disagreement would receive the minimum score of one. (The entire interaction scale, entitled "Attitude Study - Part I", is included in the Appendix.)

The internal - external direction of the response scale was randomized to account for the threat of response sets. Strong agreement with all twenty postdictive statements results in eleven highly internal responses and nine highly external responses.

The test was constructed along rational grounds. Goldberg (1972) has demonstrated that empirical, factor analytic, rational and theoretical approaches to test construction differ only slightly in predictive accuracy. Goldberg argues that the writing of good items is more important in the construction of adequate tests than is the particular approach employed. In light of this, extensive analysis and revision of the items was undertaken.

The interaction assessment instrument follows the linear model of psychometric theory, as does Rotter's I-E Test. This model was chosen not only because
most measures appear to fit it, but also because "the essence of the linear model is that it does not take individual items very seriously. It recognizes that the individual item has considerable specificity and measurement error" (Nunnally, 1967, p. 74). This characteristic of the model makes it especially well-suited for the present task – abstracting a more general control construct from the measurement of a number of specific (and possibly quite different) expectancies for control of reinforcement.

A small pretest of the interaction instrument was run. An examination of the results found that a few situations tended to yield skewed distributions of response scores. Most of the pretest subjects might, for example, disagree with a target statement, thus rendering that item weak as regards its ability to differentiate individuals. The six items where this was the case were slightly modified on the basis of a rational analysis of the background information given, the problematic situations presented, and the target statements as worded. In each case this analysis led to the realization that the situation had, inadvertently, supported one position over another (agreement over disagreement or vice-versa). Minor modifications were made in the information supplied in the item in an effort to increase the ambiguity of the situation. The pretest then functioned to pinpoint any biases in the items.

The interaction instrument, in the form used for this study, does possess a good deal of face validity. Fiske points out that "to measure individual differences
on a personality construct, three criteria must be met: (1) the measure must yield responses determined primarily by an important construct, (2) the responses must vary over people, and (3) the responses must serve well to characterize each person" (Fiske, 1971, p. 272). The instrument's face validity gives us some confidence in the test's ability to meet the first two criteria. The study will help us determine how well the instrument meets the third criterion.

A MEASURE OF RELEVANT SELF-REPORT BEHAVIOR

The design calls for a comparison of the predictive utilities of trait and interaction approaches to locus of control. In operational terms, the design involves computing a trait-based predictor of behavior and an interaction-based predictor of behavior, and comparing both to some measure of behavior relevant to the control construct. An examination of the locus of control literature did not suggest any laboratory measures of behavior which could clearly differentiate internals from externals, let alone allow for the quantification of individuals' scores along an internality - externality continuum. While differential loci of control should be reflected in differences in behavior over time and across situations, it is difficult to conceive of a limited number of laboratory behaviors which would correctly assess these differences. In light of this difficulty, an
effort was made to devise a relevant measure of self-report behavior which would accomplish what previous laboratory measures of construct-related behaviors had not.

The decision to employ a self-report measure of behavior was made with some reluctance. Goldfried and D'Zurilla (1969), whose design format was incorporated in the behavior measurement instrument, argue cogently for the viability of self-report measures. They believe that the real situation can be approximated quite well by self-report measures. Nunnally (1967) also argues for the viability of self-report measures despite a number of persistent difficulties in the interpretation of their results. A self-report measure of behavior is utilized in this study as a useful, temporary alternative to the measurement of actual behaviors. Some sort of behavioral observation should be incorporated in the further study of the utility of trait and interaction assessment strategies, particularly as regards the convergent validity (Campbell and Fiske, 1959) of the control construct.

The key variable in the construction of the measure of self-report behavior is control. Responses to problematic situations could be evaluated in terms of the degree of control over the situation reflected in them. Given situations in which the subject is told explicitly that he wants something (to get a good grade in a course, to make friends with someone, etc.), then an internal locus of control
should lead one to behave as if he were in control of the situations; an external locus of control should lead one to behave as if he had little control over the situations encountered.

The format of the measuring instrument consists of a series of hypothetical situations in which the subject is told that he wants some desired outcome, but problems or difficulties stand in his way. What, the subject is asked, would he do in this situation. It was decided not to use free responses to the situations given the coding problems this procedure would create. Instead, subjects are offered three response choices: one reflecting firm control of the situation (internal response); a second reflecting some attempt at control, but no confidence in this attempt (intermediate response); a third choice reflecting little or no control of the situation (external response).

As an example, in item one, the subject wants to finish his work but an acquaintance interrupts him. The intruder has made a habit of interfering with the subject's studying. How does the subject deal with this situation? The response choices offered are: asking the intruder to come back later, after the work has been finished (internal behavior); talking with the intruder, but expressing annoyance by being abrupt (intermediate behavior); putting the work aside, talking with the intruder, hoping he leaves soon (external behavior). (The entire measure of self-report behavior, entitled "Attitude Study - Part II", is included in the
Appendix.

A small pretest of the behavior measure led to a modification of the format. Pretest subjects were asked not only to choose one of the three response choices offered, but also to tell us what other act, if any, would be preferable to them in this situation. A high proportion of subjects replied that a combination of the response choices offered (doing two of the three behaviors listed) would be preferable to individual choices. This led to the decision to have subjects rate all three behavior choices in terms of the probability of their actually performing these actions. Our criterion for the evaluation of predictor utility then is based on probabilities of behavior, not behavior itself. This, it should be noted, is true of all self-report instruments and behavioral observations, where response sampling is taken to indicate the probabilities of different responses. A four-point scale is used to rate the behavior choices: not do, might do, would seriously consider doing, would definitely do.

The format of the measuring instrument thus consists of eleven problematic situations to each of which subjects are asked how likely it is that they would do each of three behaviors. To control for the threat of response sets, the order in which the behavior choices are presented was randomized. Rating behavior number one highly on all eleven occasions results in four internal responses, three intermediate responses, and four external responses. An attempt was made to control for the social desirability threat by writing all behavioral choices
in as reasonable and constructive a manner as possible. As a further check, a few of the experimenter's peers were asked to rate the social desirability of all behavior choices. No clear patterns resulted. In all eleven situations at least two response choices were rated equally desirable; in most of the situations the third choice was also viewed as a socially desirable response.

In addition to the rating of behavior choices, subjects are asked to rate their satisfaction with the choices offered. This question is included as a check on the adequacy of the choices offered. Another question subjects are asked is whether they have ever actually been in a situation like this, what they did, and what happened. This question is included as a measure of the relevance of the situations to the members of the subject pool.

The items included in the self-report measure of behavior are either academic or social in nature. Five items concern academic situations, five concern social situations. The remaining item, dealing with the subject's relations with a professor, is double scored as both an academic and a social situation. In parallel form to the interaction assessment instrument, half the items on the behavior scale come from the domain of expectancies for control of reinforcement in academic situations and half tap expectancies for control in social situations. The general measure of construct-related behavior is computed by combining all items (both domains). To control for a possible interaction-behavior artifact, all
situations on the behavior rating measure are substantially different from the situations evaluated on the interaction instrument.
VIII. TESTING PROCEDURES

The technique employed was to administer three questionnaires to undergraduate students at Duke University. Two of the questionnaires were designed to assess (predict) expectancies for control of reinforcement; the third questionnaire was designed to evaluate a sample of behavior (self-report behavior) in terms of the control construct. The design calls for the comparison of both predictors of behavior with the criterion measure, and a comparison of both predictors with one another. An examination of the interaction assessment instrument, an instrument suggested by a review of the personality literature and designed specifically for this study, will also be undertaken.

SUBJECTS

The Rotter I-E Test was administered to all undergraduates in the September 1974 testing pool at Duke University. It was included in a packet of test materials which were group administered. Four hundred and fifteen students completed the test. One hundred and two students from the subject pool participated in the experiment, completing both the interaction locus of control instrument and the measure of construct-related self-report behavior.
TEST ADMINISTRATION

Two weeks after the completion of general testing, subjects who signed up for an attitude study were given the interaction assessment instrument to complete. Group testing was used with a graduate student present to hand out the questionnaires, read through the directions, answer any questions, and collect the tests. No time limit was set for the task. The self-report behavior questionnaire was completed a few days later. It too was administered in a group testing situation with a graduate student serving as test administrator, and no time limit enforced.

SCORING PROCEDURES

All three instruments were scored along an internality - externality scale. The higher the score, the more external the response. Total scores on Rotter's I-E Test range from zero (highly internal) to twenty-three (highly external). For the interaction assessment instrument, individual responses were scored from one (highly internal) to six (highly external), and total scores represent the addition of all twenty responses. For the self-report measure of behavior, a scoring
system was devised to account for both the probabilities of response choices as assigned by subjects and the degree of control reflected in the choices themselves. Scores for each item could range from 1.00 (highly internal) to 3.00 (highly external). Total scores were computed by adding up all eleven response scores.

Academic and social subscores were computed for both the interaction instrument and the self-report behavior measure. The academic and social interaction scores each represent the sum of ten responses, with no overlap between them. The academic and social behavior measures each represent the sum of six response scores, with one item appearing in both measures.
PART IV. RESULTS

The results of the present study are analyzed in terms of the relationship between the predictors of locus of control behavior and a self-report measure of locus of control behavior. The two predictors differ in their basic approach to assessing the variable. The data are analyzed to furnish information about:

a) the predictive validity of the assessment instruments; b) the relationship between the predictors themselves; c) the reliability of the tests constructed for this study; and d) the effects of correction for attenuation on predictor-criterion correlations. The adequacy of the criterion measure is evaluated on the bases of subjects' ratings of previous exposure to situations similar to items on the scale, and subjects' ratings of the adequacy of the behavior choices offered on the scale. An analysis of the assessment instrument constructed for the present study is undertaken by examining the relationship between individual items on the test and criterion scores. In addition, the effect of sex differences on predictor and criterion scores is explored, suggesting the degree to which males and females differ on the personality variable of locus of control.
In the following table, basic sample statistics are presented for all seven test scales employed in this study.

Table 1. Sample Means and Standard Deviations of Test Scores

<table>
<thead>
<tr>
<th>Test Scale</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotter</td>
<td>11.53</td>
<td>3.87</td>
</tr>
<tr>
<td>Interaction Total</td>
<td>66.88</td>
<td>7.71</td>
</tr>
<tr>
<td>Interaction Academic</td>
<td>34.05</td>
<td>5.10</td>
</tr>
<tr>
<td>Interaction Social</td>
<td>32.83</td>
<td>4.90</td>
</tr>
<tr>
<td>Behavior Total</td>
<td>20.18</td>
<td>1.78</td>
</tr>
<tr>
<td>Behavior Academic</td>
<td>11.10</td>
<td>0.84</td>
</tr>
<tr>
<td>Behavior Social</td>
<td>11.53</td>
<td>1.43</td>
</tr>
</tbody>
</table>

\( n = 92 \) for each test scale.

The Interaction Total Scale consists of interaction items 1-20 i.e. the entire test. The Interaction Academic Scale consists of interaction items 2, 3, 6, 8, 9, 13, 14, 16, 19 and 20. The Interaction Social Scale consists of interaction items 1, 4, 5, 7, 10, 11, 12, 15, 17 and 18. The Behavior Total Scale consists of behavior items 1-11 i.e. the entire test. The Behavior Academic Scale consists of
behavior items 3, 4, 6, 8, 9 and 11. The Behavior Social Scale consists of behavior items 1, 2, 5, 7, 8 and 10. (All three instruments are included in the Appendix to this paper.)

Table 2. Correlations Between the Two Predictors and the Behavior Measures

<table>
<thead>
<tr>
<th>Criterion Measure^a</th>
<th>Rotter</th>
<th>Interaction</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavior Total</td>
<td>.11</td>
<td>.33^b</td>
<td>.10</td>
</tr>
<tr>
<td>Behavior Academic</td>
<td>.03</td>
<td>.28^c</td>
<td>.04</td>
</tr>
<tr>
<td>Behavior Social</td>
<td>.12</td>
<td>.14^d</td>
<td>.94</td>
</tr>
</tbody>
</table>

^a\(n = 92\) for all three measures

^bInteraction Total

^cInteraction Academic

^dInteraction Social
The Interaction Scales correlate higher with all three behavior measures than does Rotter's I-E Test. The difference between Rotter and Interaction correlations with the criterion measures is statistically significant for only the Behavior Academic measure. The difference in correlations with Behavior Total approaches statistical significance. The difference in correlations with Behavior Social is highly insignificant.

Scores on Rotter's I-E Test correlate more highly with a measure of social behavior than they do with a measure of overall behavior. This is true despite the lower reliability of the smaller subarea criterion measure. Rotter scores are quite poor as predictors of Behavior Academic scores.

The Interaction Test predicts Behavior Total best. The Interaction Academic Scale predicts Behavior Academic almost as well, particularly when taking into account the smaller number of items on each subscale. The Interaction Scale does not predict Behavior Social very well.

The following two tables analyze the data in terms of the relationship between the two predictors.
Table 3. Correlations Between the Two Predictors

<table>
<thead>
<tr>
<th>Interaction Scale&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Rotter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interaction Total</td>
<td>.38</td>
</tr>
<tr>
<td>Interaction Academic</td>
<td>.37</td>
</tr>
<tr>
<td>Interaction Social</td>
<td>.22</td>
</tr>
</tbody>
</table>

<sup>a</sup> n = 92 for all three measures.

Table 4. Variance Accounted for by Better Predictor and Increment Afforded by Adding Second Predictor

<table>
<thead>
<tr>
<th>Criterion Measure&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Better Predictor&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Increment&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavior Total</td>
<td>.10970</td>
<td>.00025</td>
<td>.10994</td>
</tr>
<tr>
<td>Behavior Academic</td>
<td>.07609</td>
<td>.00635</td>
<td>.08243</td>
</tr>
<tr>
<td>Behavior Social</td>
<td>.01973</td>
<td>.00887</td>
<td>.02860</td>
</tr>
</tbody>
</table>

<sup>a</sup> n = 92 for all three measures.

<sup>b</sup>Better Predictor = Interaction Scale for all three measures.

<sup>c</sup>Increment = Increment from inclusion of Rotter Test for all three measures.
The data in Table 3 suggests that the two predictors of behavior have much in common with one another. Yet, despite this relationship, Table 2 shows that for each criterion measure the interaction assessment instrument is more highly correlated with behavior than is Rotter's I-E Test.

Table 4 shows that the interaction instrument is the better predictor of behavior on all three criterion measures. In a multiple regression program, the better predictor is defined as the predictor which accounts for the most variance in criterion scores. In each case, Rotter accounts for a smaller amount of the variance. The increment numbers in Table 4 refer to the additional variance in criterion scores that could be accounted for by adding Rotter's I-E Test to the Interaction Scales, thus using both instruments to predict locus of control behavior. In predicting Behavior Total, the addition of Rotter's I-E Test produces an increment of less than 1% in the variances that can be accounted for (increment= .23%). In predicting Behavior Academic, the addition of Rotter's I-E Test produces an increment of just over 8% (increment=8.34%); in predicting Behavior Social, the increment is more substantial (increment=45.95%). The use of both instruments to predict locus of control behavior is clearly useful only in the Behavior Social case. However, it should be noted that in predicting Behavior Social, both instruments together account for less than 3% of the variance in criterion scores.
Table 5. Reliability of the Tests Constructed

<table>
<thead>
<tr>
<th>Test</th>
<th>Coefficient alpha</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interaction Total</td>
<td>.514</td>
<td></td>
</tr>
<tr>
<td>Behavior Total</td>
<td>.462</td>
<td></td>
</tr>
</tbody>
</table>

\( n=102 \) for both tests

Coefficient alpha is an estimate of test reliability based on the internal consistency of the tests themselves. It is therefore a measure of the homogeneity of the scores obtained. Coefficient alpha estimates the average correlation of all possible split-halves of items on a particular test (Cronbach, 1951). As such, it is the best estimate of test reliability available.

Table 6. Correlations Between Predictors and Criterion With Correction for Attenuation

<table>
<thead>
<tr>
<th>Behavior Total - Degree of Correction for Attenuation</th>
<th>Rotter</th>
<th>Interaction Total</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Correction</td>
<td>.11</td>
<td>.33</td>
<td>.10</td>
</tr>
<tr>
<td>Correction for Attenuation</td>
<td>.16</td>
<td>.48</td>
<td>.008</td>
</tr>
<tr>
<td>Unattenuated Correlation(^a)</td>
<td>---</td>
<td>.67</td>
<td>----</td>
</tr>
</tbody>
</table>

\(^a\)correction for attenuation on both predictor and criterion scores.
The coefficients alpha reported in Table 5 allow us to correct for the attenuation by measurement error of our previously determined predictor-criterion correlations. We can estimate the real validity of the assessment instruments by correcting for the unreliability of the criterion. The issue here, as pointed out by Nunnally (1967), is how well the test works. Correcting for attenuation of the Behavior Total measure produces correlations of .16 with Rotter's I-E Test and .48 with the Interaction Total Test. This means that a totally reliable criterion measure would correlate at these levels with the two prediction instruments. Table 6 shows that the difference between predictor-criterion correlations which failed to reach statistical significance initially is significant beyond the .01 level when the criterion measure is corrected for attenuation.

We can also estimate the unattenuated correlation -- the ideal correlation which would result from the correction for attenuation of both predictor and criterion scores. If both the Interaction Test and the Behavior Total measure were completely reliable, they would correlate .67 with one another. This .67 correlation is an ideal one -- but it does estimate the limit of predictive validity of the interaction instrument as both predictor and criterion are made more reliable. It is not possible to compute the unattenuated correlation for Rotter's I-E Test, since the data necessary for computing the reliability of that test were not available i.e. only total scores, not individual responses, were available.
The following two tables examine the adequacy of the criterion measure.

Table 7. Previous Exposure to Situations Similar to Items On the Self-Report Behavior Questionnaire

<table>
<thead>
<tr>
<th>Situation</th>
<th>% Yes</th>
<th>% No</th>
<th>% Responding</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>90</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>50</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>53</td>
<td>47</td>
<td>99</td>
</tr>
<tr>
<td>4</td>
<td>63</td>
<td>37</td>
<td>99</td>
</tr>
<tr>
<td>5</td>
<td>30</td>
<td>70</td>
<td>99</td>
</tr>
<tr>
<td>6</td>
<td>45</td>
<td>55</td>
<td>100</td>
</tr>
<tr>
<td>7</td>
<td>30</td>
<td>70</td>
<td>100</td>
</tr>
<tr>
<td>8</td>
<td>21</td>
<td>79</td>
<td>96</td>
</tr>
<tr>
<td>9</td>
<td>30</td>
<td>70</td>
<td>99</td>
</tr>
<tr>
<td>10</td>
<td>46</td>
<td>54</td>
<td>94</td>
</tr>
<tr>
<td>11</td>
<td>45</td>
<td>65</td>
<td>100</td>
</tr>
<tr>
<td>Mean</td>
<td>45</td>
<td>55</td>
<td>99</td>
</tr>
</tbody>
</table>
The responses tabulated in Table 7 were subjects' responses to the question "Have you ever been in a situation like this?" From these responses one can estimate the relevance of the situations presented on the self-report behavior questionnaire for the subjects participating in the study. To the extent that most subjects report previous experience with similar situations, we have some evidence that the situation is relevant to the subjects and some confidence that their choices reflect how they would behave in these situations. To the extent that the situations presented are not relevant to the subjects, there is a greater likelihood that their ratings of behavioral choices represent hypothetical or theoretical responses devoid of behavioral significance.

Across the eleven situations, a mean of 45% of the subjects had previous experience with situations similar to the criterion items. While the relevance of a few of the items is adequate, the relevance of the measure as a whole is below the present author's expectations. One possible reason for this is the inclusion within a number of the items of extraneous information which tended to decrease the relevance of the items for the subjects in this study. Subjects, for example, would point out that item nine, in which control over bureaucratic situations was to be tapped, concerned a senior and that they were only a sophomore; or, on item five, where control in relation to one's parents was to be tapped, the issue of going
home for the weekend or studying at school was irrelevant to students who live too far away from home to spend weekends there, or for those whose parents live in or near Durham. Similar responses were recorded for a few other situations, suggesting that the issues which were to be tapped by a number of the items were obscured by extraneous information. This detailed information, originally included in the situations to give them a sense of reality, tended, it would appear, to make some of them unreal to the subjects.

Table 8. Ratings of Satisfaction with Behavioral Choices Offered On the Self-Report Behavior Questionnaire

<table>
<thead>
<tr>
<th>Situation</th>
<th>% Satisfied</th>
<th>% Not Satisfied</th>
<th>% Responding</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>90</td>
<td>10</td>
<td>93</td>
</tr>
<tr>
<td>2</td>
<td>91</td>
<td>9</td>
<td>92</td>
</tr>
<tr>
<td>3</td>
<td>90</td>
<td>10</td>
<td>93</td>
</tr>
<tr>
<td>4</td>
<td>95</td>
<td>5</td>
<td>94</td>
</tr>
<tr>
<td>5</td>
<td>89</td>
<td>11</td>
<td>95</td>
</tr>
<tr>
<td>6</td>
<td>85</td>
<td>15</td>
<td>90</td>
</tr>
<tr>
<td>7</td>
<td>67</td>
<td>33</td>
<td>84</td>
</tr>
<tr>
<td>8</td>
<td>95</td>
<td>5</td>
<td>88</td>
</tr>
<tr>
<td>9</td>
<td>98</td>
<td>2</td>
<td>93</td>
</tr>
<tr>
<td>10</td>
<td>68</td>
<td>32</td>
<td>91</td>
</tr>
<tr>
<td>11</td>
<td>100</td>
<td>0</td>
<td>97</td>
</tr>
<tr>
<td>Mean</td>
<td>88</td>
<td>12</td>
<td>92</td>
</tr>
</tbody>
</table>
The ratings of satisfaction with the behavioral choices are quite high, and consistently so. In only two situations, items 7 and 10, is there a sizeable amount of dissatisfaction with the choices. Both of these items portray interpersonal situations -- an argument about vacation plans with a boyfriend/girlfriend in item 7, and an argument with a roommate in item 10. Most of the objections to the behavior choices on both items tended to involve the nuance of the wording of the choices. Much of the dissatisfaction could be eliminated by a careful rewording of the choices.

The table on the following page is an analysis of the interaction assessment instrument.
Table 9. Correlations Between Individual Items on the Interaction Test and Behavior Total Scores

<table>
<thead>
<tr>
<th>Interaction Test Item</th>
<th>Behavior Test Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item 8</td>
<td>.518</td>
</tr>
<tr>
<td>Item 19</td>
<td>.369</td>
</tr>
<tr>
<td>Item 20</td>
<td>.293</td>
</tr>
<tr>
<td>Item 4</td>
<td>.278</td>
</tr>
<tr>
<td>Item 18</td>
<td>.270</td>
</tr>
<tr>
<td>Item 15</td>
<td>.253</td>
</tr>
<tr>
<td>Item 1</td>
<td>.204</td>
</tr>
<tr>
<td>Item 2</td>
<td>.197</td>
</tr>
<tr>
<td>Item 13</td>
<td>.186</td>
</tr>
<tr>
<td>Item 16</td>
<td>.174</td>
</tr>
<tr>
<td>Item 9</td>
<td>.170</td>
</tr>
<tr>
<td>Item 11</td>
<td>.157</td>
</tr>
<tr>
<td>Item 12</td>
<td>.029</td>
</tr>
<tr>
<td>Item 5</td>
<td>-.005</td>
</tr>
<tr>
<td>Item 3</td>
<td>-.014</td>
</tr>
<tr>
<td>Item 17</td>
<td>-.028</td>
</tr>
<tr>
<td>Item 7</td>
<td>-.033</td>
</tr>
<tr>
<td>Item 10</td>
<td>-.047</td>
</tr>
<tr>
<td>Item 14</td>
<td>-.085</td>
</tr>
<tr>
<td>Item 6</td>
<td>-.137</td>
</tr>
</tbody>
</table>

$a_n=102$ for both instruments.
The above analysis of the interaction instrument shows that item 8 is an extremely good item, and that there are between eight and ten highly adequate items on the test. The remaining items contribute little, and in some cases detract from the correlation between the interaction predictor and the criterion measure.

The following three tables examine whether there is variance due to sex differences in predictor scores or in scores on the criterion measure.

Table 10. Analysis of Variance Due to Sex Differences in Rotter Scores

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>1</td>
<td>18.11</td>
<td>18.11</td>
<td>1.25</td>
<td>.27</td>
</tr>
<tr>
<td>Within</td>
<td>90</td>
<td>1300.79</td>
<td>14.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>91</td>
<td>1318.90</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 11. Analysis of Variance Due to Sex Differences in Interaction Total Scores

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>1</td>
<td>110.74</td>
<td>110.74</td>
<td>1.72</td>
<td>.19</td>
</tr>
<tr>
<td>Within</td>
<td>100</td>
<td>6430.68</td>
<td>64.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>101</td>
<td>6541.41</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 12. Analysis of Variance Due to Sex Differences in Behavior Total Scores

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>1</td>
<td>.006</td>
<td>.006</td>
<td>.002</td>
<td>.97</td>
</tr>
<tr>
<td>Within</td>
<td>100</td>
<td>319.94</td>
<td>3.19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>101</td>
<td>319.94</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

These analyses of variance show that sex differences have no significant effect on scores on any of the three measures.
PART V. DISCUSSION AND SUMMARY

The present study evolved from a review of the literature on basic conceptualizations of personality. The intrapsychic approach to determining personality (and, concurrently, predicting behavior) was identified as the basis for psychology's classic assessment instruments. Most assessment instruments in current use are based on trait theories, others, particularly projective instruments, are derived from state theories. These assessment instruments are, thus, extensions of views of personality which have been labeled deficient. Both the intrapsychic theories and their instruments consistently ignore the role of situational factors in the performance of behavioral acts. The situationists, on the other hand, ignore the effects of person factors, and insist that the situation elicits behavior. An interactionist approach, as proposed here, tries to examine the interplay of person factors and situation factors in motivating and directing behavior.

A person-situation interaction instrument designed to predict locus of control behavior was constructed. This instrument was constructed on rational grounds and underwent little statistical analysis, other than a small pretest, prior to the execution of this study. Despite the numerous difficulties inherent in test
construction, the interaction assessment instrument correlated more highly with a self-report measure of behavior than did Rotter's I-E Test, the classic and most frequently used instrument for assessing locus of control. The overall results were in the predicted direction, but fell short of attaining statistical significance. However, corrections for attenuation due to measurement error on the criterion measure did lead to a difference in predictor - criterion correlations that was highly significant. The unattenuated correlation between the interaction predictor and the criterion measure was reasonably high, and probably also statistically significant. (This can not be determined precisely due to the absence of the information necessary to calculate the coefficient alpha reliability of Rotter's measure.) Thus, the hypothesis that an interaction approach to predicting behavior could improve upon the classic (intrapsychic) approach to predicting behavior was mildly confirmed.

The correlation between the interaction test and the criterion measure is not as high as anticipated. Part of the reason for this may be the limited reliabilities of both measures. The .33 correlation between interaction test and the criterion does rise to .48 when the criterion measure is corrected for attenuation, and to .67 when both measures are made perfectly reliable. But, even at the ceiling .67 correlation, only 45% of the variance in subjects' scores can be accounted for by locus of control. This limitation on the present interaction in-
instrument may very well be due to the nature of the variable being assessed.

Locus of control is an abstract variable that subsumes a good deal. Items written to differentiate internal and external expectancies for control of reinforcement as clearly as possible, are inherently related to other variables - even if the relationship is not systematic throughout the scale. It may be much more difficult to predict behavior related to locus of control, with its many factors, than it is to predict behavior related to simpler personality variables. It seems reasonable to suggest that the difference in utility between classic and interaction predictors of behavior would have been much more obvious had a more operationally defined, less inclusive variable been examined.

A second hypothesis under examination states that subloci of control may differ substantially from one another and that, as a result, a completely generalized measure of expectancies for control of reinforcement may have a limited utility in predicting most construct-related behaviors. This hypothesis presumes that one can simultaneously have a number of different expectancies for control of reinforcement in various types of situations. One may feel, for example, more personal control of social situations than of academic situations. To the extent that one has highly divergent subloci of control, a general expectancy measure may be a useless average.

The results of this study do not clearly confirm or deny this hypothesis.
The total interaction instrument correlates as highly with the total criterion measure as the academic portion of the interaction predictor correlates with the academic criterion items (adjusting for the smaller number of variables on both subscales). The interaction predictor of social behavior has a lower correlation with the social criterion items than either of the above predictors. Total scores from Rotter's I-E Test were compared with the overall criterion measure and with the two submeasures. Rotter scores correlate more highly with the social criterion measure than with the total criterion measure. The correlation with the academic criterion is much lower.

These results do not lend themselves to simple interpretation. It is possible, for example, that Rotter's I-E Test does not predict locus of control behavior in academic situations at all. But it appears more likely that these results are an artifact of the criterion measure employed here, especially in regard to the small number of items constituting the measure's subscales. Further investigation is needed before this second hypothesis can either be confirmed or denied.

The analysis of the interaction instrument shows, among other things, the numerous difficulties encountered in test construction. Seven of the twenty interaction items have a negative correlation with the overall criterion measure. These items, while appropriate on a priori rational grounds, do not work.
Individuals whose responses to these items are more in the internal direction, tend to report more external behavior and vice versa. These items, in particular, should be eliminated from any further examination of the utility of an interaction predictor of locus of control behavior. An interaction instrument, so purified, should correlate more highly with a measure of locus of control behavior.

The self-report behavior measure is also in need of refinement. As suggested earlier, the relevance of the items for college students could be increased by an elimination of some of the extraneous information now contained in the measure. Eliminating such information should lead subjects to refocus their attention on the issues central to the problematic situations. For example, how much behavioral control do they have in situations in which parental demands interfere with other desires they may have? Refocusing subjects' attention on the issue would increase, in turn, the correspondence between their reported responses and the true construct-relevant behaviors they normally enact. Modifying the measure in the suggested way should strengthen it.

In addition, further examinations of the predictive utilities of predictors of locus of control behavior should employ more extensive criterion measures. This is especially true if subloci of control are to be examined. The hypothesis that subloci of control vary significantly among one another can only be reasonably evaluated if there are adequate measures of these subareas.
Other types of behavioral measures are also essential to a further analysis of the utility of interaction approaches to behavior prediction. Utilization of laboratory measures of construct-relevant behaviors, as well as unobtrusive field measures, when possible, could allow for evaluation of the convergent validity of the control construct and for the examination of the predictive validity of the interaction approach by criteria more closely related to the behaviors being predicted.

The variance attributable to sex differences in predictor and criterion scores was examined. There was no significant difference in scores between males and females on either Rotter's I-E Test, the interaction instrument, or the criterion measure. This suggests either that there are no basic differences in male vs. female general expectancies for control of reinforcement, or that the predictors and criterion employed in this study failed to detect these differences. The former possibility is, in fact, much more likely to be the case. There is a good deal more variance in scores among individual subjects than there is between the male and female groups.
SUMMARY

This study investigated the utilities of two different assessment strategies for the prediction of locus of control behavior. One hundred and two undergraduates at Duke University participated in the study. An interaction assessment instrument, suggested by a review of the literature on basic approaches to personality, was constructed. It correlated more highly with various self-report behavior criteria than did the classic locus of control assessment instrument, Rotter's I-E Test. The results tended to confirm the hypothesis that an interaction assessment instrument could improve upon the predictive validity of psychology's classic intrapsychic assessment instruments.

The relations between two predictors of subloci of control, academic and social, were also examined and the utilities of these predictors were compared with the utilities of the more general measures of locus of control. The results were contradictory. They tended neither to confirm nor deny the hypothesis that subloci of control may vary greatly among one another. Further study is required to evaluate this hypothesis and its implications for restricting the range of expectancies for control of reinforcement. Particularly important in future endeavors is the use of more extensive criterion measures than are contained in the present study.
Suggestions are made for the refinement of both instruments constructed for the present study. A shortened interaction assessment instrument is proposed which should correlate more highly with measures of locus of control behavior. The criterion measure should be reworded to eliminate extraneous information which appeared, in this study, to confound some responses.

The incorporation of additional measures of construct-relevant behaviors is suggested. Among others, laboratory measures of behavior and unobtrusive field measures should be included in future studies.

No significant differences in scores on either predictor or criterion measures were found which could be attributed to sex differences.
SOCIAL REACTION INVENTORY

This is a questionnaire to find out the way in which certain important events in our society affect different people. Each item consists of a pair of alternatives lettered a or b. Please select the one statement of each pair (and only one) which you more strongly believe to be the case as far as you're concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you would like to be true. This is a measure of personal belief; obviously there are no right or wrong answers.

Your answers to the items on this inventory are to be recorded on a separate answer sheet which is loosely inserted in the booklet. REMOVE THIS ANSWER SHEET NOW. Print your name and any other information requested by the examiner on the answer sheet; then finish reading these directions. Do not open the booklet until you are told to do so.

Please answer these items carefully but do not spend too much time on any one item. Be sure to find an answer for every choice. Find the number of the item on the answer sheet and black-in the letter a or b which you choose as the statement most true.

In some instances you may discover that you believe both statements or neither one. In such cases, be sure to select the one you more strongly believe
to be the case as far as you're concerned. Also try to respond to each item independently when making your choice; do not be influenced by your previous choices.
REMEMBER

Select that alternative which you personally believe to be more true.

I more strongly believe that:

1. a. Children get into trouble because their parents punish them too much.
   b. The trouble with most children nowadays is that their parents are too easy
      with them.

2. a. Many of the unhappy things in people's lives are partly due to bad luck.
   b. People's misfortunes result from the mistakes they make.

3. a. One of the major reasons why we have wars is because people don't take
     enough interest in politics.
   b. There will always be wars, no matter how hard people try to prevent them.

4. a. In the long run people get the respect they deserve in this world.
   b. Unfortunately, an individual's worth often passes unrecognized no matter
      how hard he tries.

5. a. The idea that teachers are unfair to students is nonsense.
   b. Most students don't realize the extent to which their grades are influenced
      by accidental happenings.

6. a. Without the right breaks one cannot be an effective leader.
   b. Capable people who fail to become leaders have not taken advantage of
      their opportunities.

7. a. No matter how hard you try, some people just don't like you.
   b. People who can't get others to like them don't understand how to get along
      with others.

8. a. Heredity plays the major role in determining one's personality.
   b. It is one's experiences in life which determine what they're like.

9. a. I have often found that what is going to happen will happen.
   b. Trusting to fate has never turned out as well for me as making a decision
      to take a definite course of action.
10. a. In the case of the well-prepared student, there is rarely if ever such a thing as an unfair test.
b. Many times exam questions tend to be so unrelated to course work that studying is really useless.

11. a. Becoming a success is a matter of hard work; luck has little or nothing to do with it.
b. Getting a good job depends mainly on being in the right place at the right time.

12. a. The average citizen can have an influence in government decisions.
b. This world is run by the few people in power and there is not much the little guy can do about it.

13. a. When I make plans, I am almost certain that I can make them work.
b. 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.

14. a. There are certain people who are just no good.
b. There is some good in everybody.

15. a. In my case getting what I want has little or nothing to do with luck.
b. Many times we might just as well decide what to do by flipping a coin.

16. a. Who gets to be the boss often depends on who was lucky enough to be in the first place first.
b. Getting people to do the right things depends upon ability; luck has little or nothing to do with it.

17. a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand nor control.
b. By taking an active part in political and social affairs, the people can control world events.

18. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.
b. There really is no such thing as "luck."
19. a. One should always be willing to admit his mistakes.
   b. It is usually best to cover up one's mistakes.

20. a. It is hard to know whether or not a person really likes you.
   b. How many friends you have depends upon how nice a person you are.

21. a. In the long run the bad things that happen to us are balanced by the good ones.
   b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

22. a. With enough effort we can wipe out political corruption.
   b. It is difficult for people to have much control over the things politicians do in office.

23. a. Sometimes I can't understand how teachers arrive at the grades they give.
   b. There is a direct connection between how hard I study and the grades I get.

24. a. A good leader expects people to decide for themselves what they should do.
   b. A good leader makes it clear to everybody what their jobs are.

25. a. Many times I feel that I have little influence over the things that happen to me.
   b. It is impossible for me to believe that chance or luck plays an important role in my life.

26. a. People are lonely because they don't try to be friendly.
   b. There's not much use in trying too hard to please people; if they like you, they like you.

27. a. There is too much emphasis on athletics in high school.
   b. Team sports are an excellent way to build character.

28. a. What happens to me is my own doing.
   b. Sometimes I feel that I don't have enough control over the direction my life is taking.

29. a. Most of the time I can't understand why politicians behave the way they do.
   b. In the long run the people are responsible for bad government on a national as well as on a local level.
ATTITUDE STUDY - PART I

Directions: The following are a number of hypothetical life situations, some of which may be quite familiar to you. Please read over each situation carefully, and then read the statements which follow. The statement is something you might say about that particular situation. After reading the statement over carefully, please rate your agreement-disagreement with the statement, as it relates to that situation. To register your reaction to the statement, please circle one of the numbers on the scale which follows the statement. For example, if you strongly agree with statement X, then circle number 1 (agree strongly); if you disagree with statement Y, then circle number 5 (disagree). There are no right or wrong answers to any of the items on this test. Please feel free to respond according to your own perception of the situations.

Please print your name in the space provided at the top of the page.

Please put a check next to the appropriate sex in the space above.
1. You have been dating X (your boyfriend, girlfriend) for two years. In the past few weeks, he (she) has seemed to have lost interest in you, and the two of you have been arguing a good deal. Today, X tells you that he (she) has been seeing someone else with whom X has fallen in love. Later that day you see X going out with his (her) new friend.

Statement: "There was little I could have done to avoid the breakup."

(Choose one)  

2. In a course you are now taking, two teachers are team-teaching. One, professor A, is notoriously stringent in his grading; professor B is thought to be less demanding. You spend a few days writing your final exam, and hand it in relieved to be done, somewhat dissatisfied with it, and hoping that professor A will not be the one to grade it. Your paper is one of those graded by professor B, who gives it an "a" and comments "Fine Effort."

Statement: "The paper must have been a lot better than I thought."

(Choose one)  

3. Your professor has given the class a problem to solve. He admits that it is a very difficult problem, and that he doubts that any of his students can do it. You work on the problem, on and off, for a few days, intrigued, but unable to solve it. At the next class, your professor announces that only 3 of the 25 students in the class were able to solve the problem.

Statement: "I could have solved the problem if I'd been more persistent."

(Choose one)  

4. On a Saturday night, you are the only person left in your dorm. You're lonely and a bit depressed. You always end up alone on Saturday night.

Statement: "I am lonely because I don't try to be friendly myself."

(Choose one)  
5. It's been a dismal week. You had an argument with your best friend, a teacher questioned your competence (your term paper earned a C-), and your parents are hassling you again about when you're coming home. On Friday, your weekend plans to go camping with some friends fall through.

Statement: "These things happen sometimes, there's not much I can do about them."

(Choose one)  
1 Agree 2 Agree 3 Agree 4 Disagree 5 Disagree 6 Disagree
Strongly Slightly Slightly Strongly

6. During the past few years you have been writing a number of short stories. While unsure of whether you want to be a professional writer, an important personal goal of yours is to get one of your stories published. You send a few stories to twenty literary journals. Over the next few months, all twenty journals politely refuse to accept any of your stories for publication. While talking with a friend of yours, she mentions a literary journal with which you are unfamiliar. You send them a few stories. They accept one, and promise to print it in their next issue.

Statement: "Luck had little to do with my reaching this personal goal."

(Choose one)  
1 Agree 2 Agree 3 Agree 4 Disagree 5 Disagree 6 Disagree
Strongly Slightly Slightly Strongly

7. A close friend asks you to go with her to the movies. You hesitate because you have some studying to do. She urges you to go with her, not wanting to go alone. Figuring you'd like to see the movie anyway, you decide to go. You don't particularly enjoy the film, and on return, realize that you have even more work to do than you'd imagined.

Statement: "I probably went to the movies to accede to my friend's wishes."

(Choose one)  
1 Agree 2 Agree 3 Agree 4 Disagree 5 Disagree 6 Disagree
Strongly Slightly Slightly Strongly

8. After some uncertainty about post-graduation plans, you decide with some reluctance to take your parents' advice and go to law school. With a month to go before the law school entrance exams, you put in several hours with the books to prepare yourself. You take the exam, and a few weeks later, learn that your low scores may keep you out of law school.

Statement: "Trying hard did not really alter or prevent failure."

(Choose one)  
1 Agree 2 Agree 3 Agree 4 Disagree 5 Disagree 6 Disagree
Strongly Slightly Slightly Strongly
9. Your history professor assigned a thousand pages of reading for your midterm exam. You only have a few days in which to study, so decide to skim the material, concentrating on what seems to you to be important. Due to the press of time, there are a couple of articles you do not get a chance to look over at all. You take the exam and get a very high grade.

Statement: "I was successful because I have the necessary academic ability."

(Choose one)  
1 Agree 2 Agree 3 Disagree 4 Disagree 5 Disagree 6 Disagree

Strongly Slightly Slightly Disagree Disagree

10. At a party, you hear someone you don't know mention your home town. You ask him about it, and find that he grew up there too. While talking you find that he shares your interest in kayaks and sailing. You arrange to meet him at the lake the following Saturday, and within a few weeks, you've become good friends.

Statement: "Close relationships like this are not accidental."

(Choose one)  
1 Agree 2 Agree 3 Disagree 4 Disagree 5 Disagree 6 Disagree

Strongly Slightly Slightly Disagree Disagree

11. While driving around town, you turn into a busy thoroughfare. You have the right of way, passing numerous side streets where stop signs caution motorists crossing the thoroughfare. You're driving along at the speed limit, talking with a friend, when a car suddenly starts across the thoroughfare. Unable to stop quickly enough, you ram into the side of the other car. The other driver acknowledges that he had passed the stop sign without stopping. He claims he didn't see the sign.

Statement: "The other driver was completely responsible for the accident."

(Choose one)  
1 Agree 2 Agree 3 Disagree 4 Disagree 5 Disagree 6 Disagree

Strongly Slightly Slightly Disagree Disagree

12. You've just broken up with your girlfriend (boyfriend) and you're having problems with school. Your parents are urging you to work harder. Your best friend hasn't been by in two weeks. You're lonely and depressed. You find it difficult to do the things required of you, especially with no one to offer understanding.

Statement: "I'm just unlucky not to have friends I can rely on when these troubles arise."

(Choose one)  
1 Agree 2 Agree 3 Disagree 4 Disagree 5 Disagree 6 Disagree

Strongly Slightly Slightly Disagree Disagree

13. Having been appointed chairman of a campus concert, you spend several weeks planning and arranging this annual event. Your problem is to find a good "name" band for your show. You choose three "first" choices, all of which turn out to be unavailable on the night you need them. Having lined up a few lesser name bands, you’re about to sign a contract with one of them, when you learn that a "first" choice band has become available after all, due to a program cancellation elsewhere. You get this change of bands publicized, and the concert is a great success.

Statement: "My success stemmed from the effort I put into the task."

(Choose one) 1 2 3 4 5 6
Agree Agree Agree Disagree Disagree Disagree
Strongly Slightly Slightly Strongly

14. As a part-time job, you analyze data for the economics department. You received training in basic technique before starting the job. One day, you arrive to find an unusual problem placed before you. In looking at the problem, you realize that there are two approaches you could take, each of which seems equally good to you. You choose one, and follow the problem through using this approach. A few days later, you learn from your irate supervisor that your work was completely incorrect. You also learn that the approach you considered, but discarded, would have led to the correct solution.

Statement: "I did poorly on this tough assignment because I lacked the skills necessary to get the job done."

(Choose one) 1 2 3 4 5 6
Agree Agree Agree Disagree Disagree Disagree
Strongly Slightly Slightly Strongly

15. Your dorm group has held weekly meetings for the past couple of months. These meetings are "rap" sessions--where the group, or parts of it, talk about things affecting them. At one meeting, your friend Cathy voices her feeling that lately people in the dorm seem to have turned against her. You respond that maybe she's doing something wrong, putting people off. Cathy falls silent and later you realize that she was upset by your remark.

Statement: "I can't be blamed for not knowing that Cathy would be hurt by what I said."

(Choose one) 1 2 3 4 5 6
Agree Agree Agree Disagree Disagree Disagree
Strongly Slightly Slightly Strongly
16. It's the last week of classes for the year. You're concerned about your grades for the semester and about finding a summer job. On Tuesday, you get a literature paper back, with an "A" on it and a glowing comment. On Thursday, you get a good job offer from one of the eight companies to which you applied for summer employment. You accept the offer immediately, and turn back to studying for Friday's math final. You spend a few hours studying, feeling at the end that you have a good grasp of some of the material, but are confused about other sections. Friday's test seems to go very well—most of the exam covers the material you know best, and the rest is not as difficult as it could have been. You return from the exam feeling pretty good; it's been a fine week.

Statement: "A lot of the good things that happen to me are the results of lucky breaks."

(Choose one)  
\[ \begin{array}{cccc}
1 & 2 & 3 & 4 \\
\text{Agree} & \text{Agree} & \text{Agree} & \text{Disagree} \\
\text{Strongly} & \text{Slightly} & \text{Slightly} & \text{Strongly} \\
\end{array} \]

17. You're planning to attend a rock concert with a group of friends. Another member of the group goes to buy the tickets. There are six of you and only five tickets still unsold. The other five people attend the concert, you do not. You're disappointed.

Statement: "When I get hurt like this, it is usually not a chance situation."

(Choose one)  
\[ \begin{array}{cccc}
1 & 2 & 3 & 4 \\
\text{Agree} & \text{Agree} & \text{Agree} & \text{Disagree} \\
\text{Strongly} & \text{Slightly} & \text{Slightly} & \text{Strongly} \\
\end{array} \]

18. There is a great deal of tension between you and Bob, a member of your class. You don't particularly like Bob and are convinced that he dislikes you. One day, the two of you are assigned to the same group, to put together a research project. You feel uncomfortable about this, but Bob makes an attempt to be friendly. You reciprocate, and the two of you are able to work together without tension. When you meet him in town, a couple of weeks later, he is cordial but distant.

Statement: "Though I tried, I couldn't change Bob's dislike for me."

(Choose one)  
\[ \begin{array}{cccc}
1 & 2 & 3 & 4 \\
\text{Agree} & \text{Agree} & \text{Agree} & \text{Disagree} \\
\text{Strongly} & \text{Slightly} & \text{Slightly} & \text{Strongly} \\
\end{array} \]
19. You are trying to make the dean's list this year. To do so, you need at least an A- in physics. You spend the first half of the semester trying to understand the basic concepts. You took the mid-term exam and did well. But the rest of the semester's work has been much more difficult for you, and you're apprehensive about the final exam. You really want to make the dean's list. At one of his last classes, your professor announces that he was so pleased with the class' mid-term exams, that he has decided not to give a final exam. You're quite happy about this.

Statement: "My own skills were not necessary for overcoming this troublesome obstacle."

(Choose one)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Disagree</td>
<td>Disagree</td>
<td>Strongly</td>
</tr>
<tr>
<td>Strongly</td>
<td>Slightly</td>
<td>Slightly</td>
<td>Slightly</td>
<td>Slightly</td>
<td>Slightly</td>
<td>Strongly</td>
</tr>
</tbody>
</table>

20. You're putting your scientific knowledge to use in an undergraduate senior research project, attempting to determine what causes a particular biochemical phenomenon in frogs. You spend much of your free time tediously separating out blood components and testing them. Your work does not produce any clear results, having only reduced the field of possibilities to some 500 enzymes, each of which would have to be investigated individually. Since you're starting a job two weeks after graduation, you will not be able to continue with this research.

Statement: "Being persistent did not help me complete this difficult task."

(Choose one)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Disagree</td>
<td>Disagree</td>
<td>Strongly</td>
</tr>
<tr>
<td>Strongly</td>
<td>Slightly</td>
<td>Slightly</td>
<td>Slightly</td>
<td>Slightly</td>
<td>Slightly</td>
<td>Strongly</td>
</tr>
</tbody>
</table>
ATTITUDE STUDY - PART II

Directions: The following are a number of hypothetical life situations, some of which may be quite familiar to you. Please read over each situation carefully. Each situation is followed by a question, asking you what you would do in this situation. Three choices are provided. Rate each of the choices (what you would do in this situation) on the following scale:

0 = not do
1 = might do
2 = would seriously consider doing
3 = would definitely do

To record your choice, put either a "0", a "1", a "2", or a "3" in the space provided. After rating all three choices, answer the additional questions:

A, B, C and D.

There are no right or wrong answers to any of the items on this test. Please feel free to respond according to what you would do in this situation.

Please print your name in the space provided at the top of this page.
1. Your dormitory suite has usually been quiet enough for studying; however, one of the boys in your dorm has the habit of interrupting you several times during an evening of studying to talk to you. He is a nice guy, but his interruptions are irritating you.

You are studying one evening and just getting involved in your work when he comes in to talk with you. You feel yourself getting impatient and angry, especially since this is not the first time he has done this.

How likely is it that you would do each of the following?

____ 1. I would talk with him while he was there, but I'd be abrupt—trying to express my annoyance with him.

____ 2. I would put my work aside, talk with him, and hope he'll leave fairly soon.

____ 3. I would politely ask him to come back later, after I'd finished my work.

Please answer the following questions:

A. The behavior(s) you chose, how well does it (do they) capture what you would do in this situation?
   ________________________________

B. Have you ever actually been in a situation like this?
   ________________________________

C. If so, what did you do?
   ________________________________

D. What happened?
   ________________________________
2. It's been a hard month for you. School has become a trial, nothing seems to go right in your classes and it's become difficult for you just to show up, let alone participate. You find it impossible to sit down and do the written work assigned to you, and as the weeks pass, you're falling further and further behind. You find yourself constantly at odds with your friends, and after a few arguments you've stopped seeing most of them, and withdrawn into your room. Studying, going out, and doing most anything has become increasingly difficult. You feel yourself becoming more and more indifferent, no longer bothering to become upset at specific things, but deeply concerned, nonetheless, about this change in your life.

How likely is it that you would do each of the following?

_____ 1. I would hope for the best—things should improve soon if I'm patient.
_____ 2. I would try to find someone to talk to who might be able to help me.
_____ 3. I would try scheduling my time in an effort to get back into my normal routine.

Please answer the following questions:
A. The behavior(s) you chose, how well does it (do they) capture what you would do in this situation? ________________________________

B. Have you ever actually been in a situation like this? ____________

C. If so, what did you do? ________________________________

D. What happened? ________________________________
3. It is nearing the end of the semester. Your literature course has been fairly interesting and you've enjoyed it. You hope to do well in the course but aren't sure where you stand grade-wise on the basis of a couple of short assignments. In class, your professor announces that he will give his students an optional written assignment. Students can either receive a grade based on their earlier assignments solely, or they can write the additional paper and receive a grade based on that as well as previous papers. Your professor has no preference as to what his students do, the choice is theirs.

It seems to you that your professor doesn't really have any clear basis for grading you to date, and that the optional paper might give him a more concrete basis for grading. The topic for the written assignment will be given to those students who choose to complete it at the next class meeting. You are to inform your professor of your choice of options before that class meeting.

How likely is it that you would do each of the following?

_____ 1. I would take the option of doing the additional written assignment.

_____ 2. I'd take the written assignment, work on it, and if it looked like I wouldn't do well on it, I wouldn't hand it in and presumably be graded only on my early papers.

_____ 3. I would go along with the professor's suggestion that we allow him to assign grades for the course on the basis of our earlier papers; I would not take the optional assignment.

Please answer the following questions:

A. The behavior(s) you chose, how well does it (do they) capture what you would do in this situation? ________________________________

B. Have you ever actually been in a situation like this? ________

C. If so, what did you do? ________________________________

D. What happened? ________________________________
4. You are taking your first chemistry course, a course required for your major. You have been studying diligently, putting in at least as much time studying as the other students in the class. You did all right on the first couple of tests, but on the last test you did so poorly that your term grade now, halfway through the semester, has plunged to a D.

The easiest thing to do, would be to drop the course, but you need the credit.

How likely is it that you would do each of the following?

1. I would continue studying diligently, but pay more attention to basic concepts, hoping this would improve my test scores.

2. I would ask someone (my professor, my teaching assistant, or a fellow student) for help in understanding the material.

3. I would continue studying and hope that the last test on which I received a poor grade was just a fluke.

Please answer the following questions:

A. The behavior(s) you chose, how well does it (do they) capture what you would do in this situation? ____________________________

B. Have you ever actually been in a situation like this? __________

C. If so, what did you do? ________________________________

D. What happened? ____________________________________
5. Your parents have been urging you to come home for a weekend. You promised to do so and have tried, unsuccessfully, to go home during the past two weeks. This weekend looks better and, as a result, you called them Wednesday to tell them that they can expect you Friday evening. On Thursday, your anthropology professor schedules an examination for next Tuesday. He apologizes for the lateness of his announcement; he claims he forgot to mention it last Tuesday, as he planned. While you have tried to keep up with the work for the class, you have a great deal of reading to do before the exam. You wish you hadn't promised to go home this weekend; it won't be easy to get much work done at home.

How likely is it that you would do each of the following?

1. I'd go home as I'd promised.
2. I would call my parents and tell them that I'll try to make it home next weekend instead.
3. I'd go home, but leave earlier than I'd planned, return to school and study.

Please answer the following questions:

A. The behavior(s) you chose, how well does it (do they) capture what you would do in this situation? ________________________________

B. Have you ever actually been in a situation like this? __________

C. If so, what did you do? ________________________________

D. What happened? ________________________________________
6. You're taking an undergraduate sociology course. There are only 15 students in the class. As a course assignment, each of the students has written a research paper on some urban problem. The last three weeks of the semester have been set aside for presentation and discussion of student papers. You've put a fair amount of work into your paper, and feel quite satisfied with it. After your presentation, your professor makes some generally favorable comments and then your fellow students ask questions. One student makes a few critical comments about your paper. You realize that his criticism is reasonable, based on a different interpretation of the issue itself. After he is through commenting, it's your turn to respond.

- - - - -

How likely is it that you would do each of the following?

____ 1. I'd respond by pointing out a number of inconsistencies in his argument. My own viewpoint should then hopefully seem stronger.

____ 2. I would thank him for his criticism and be truthful—point out that I hadn't thought of it myself, and am unable to respond immediately to it.

____ 3. I'd respond with an explanation of the differing viewpoints and their merits, in an effort to blunt his criticism.

Please answer the following questions:

A. The behavior(s) you chose, how well does it (do they) capture what you would do in this situation? ____________________________________________

B. Have you ever actually been in a situation like this? ______

C. If so, what did you do? ____________________________________________

D. What happened? ____________________________________________
7. You have been dating X, your boyfriend (girlfriend), for a year now. The two of you have grown closer over this period of time, your commitment to one another more serious. You're both students at Duke, and have planned on going away together during spring break. X suggested going to the mountains for your vacation, a few weeks ago. You replied that that sounded fine to you too. Now you learn that some mutual friends of yours who live at the ocean are going to have a get together for their old friends during spring break. Both of you are invited. When you suggest to X that you change your plans and attend the reunion, X gets annoyed and an argument erupts. Things have cooled down a little and spring break is approaching, so you'll have to decide soon where to go.

---

How likely is it that you would do each of the following?

___ 1. I'd make it clear that I want to go to the ocean, that we haven't seen our friends in a while, and that we can go to the mountains some other time.

___ 2. I'd tell X that either prospect is pleasing, but point out that it may still be very cool in the mountains.

___ 3. I'd let X decide, but hope X would choose to go to the ocean.

Please answer the following questions:

A. The behavior(s) you chose, how well does it (do they) capture what you would do in this situation? ________________________________
   ________________________________

B. Have you ever actually been in a situation like this? ____________
   ________________________________

C. If so, what did you do? ________________________________
   ________________________________

D. What happened? ________________________________
8. You have scheduled a conference with one of your psychology professors to discuss the possibility of your doing an undergraduate research project. You have chosen this particular professor because he knows you well, and is quite knowledgeable about his field. You think he could be helpful. You bring to the appointment an outline of a proposed project. You've spent a lot of time working on the outline--scanning the literature, thinking the problem through, and determining the feasibility of your tentative design. The project interests you, and you feel sure that it would prove rewarding to pursue it. Your professor reads the outline through and explains why he doesn't like it: not because of anything specifically weak in it, but because the subject you wish to study does not interest him in the least. He feels that the subject has been overstudied, and that, consequently, its importance has been blown out of proportion. You're disturbed at this unexpected criticism.

---

How likely is it that you would do each of the following?

1. I'd ask him if he had any suggestions (other than my proposal) for studies that might interest me.

2. I'd ask him if he thought I could do anything to modify my proposal so as to make it better.

3. I'd tell him that the project interests me and that I wish to pursue it. I'd ask if he could recommend some other member of the faculty who might be able to assist me.

Please answer the following questions:

A. The behavior(s) you chose, how well does it (do they) capture what you would do in this situation? 


B. Have you ever actually been in a situation like this? 


C. If so, what did you do? 


D. What happened? 


9. It's registration week for spring semester. You are in your last semester at Duke, and only need one more course to complete your major. There are two courses in this field that you could sign up for—one of which interests you a good deal, the other much less so. You decide, naturally, to register for the former. When you go to the Registrar's office, you find that the course you chose is closed. The clerk explains that no exceptions can be made, and that there is a reasonably long waiting list for that course. It is highly doubtful that the people already on the waiting list can be accommodated. The other course, the one which interests you less, is still open.

---

How likely is it that you would do each of the following?

____ 1. I would go to the professor teaching the course I want, and ask him for permission to register for it.

____ 2. I'd take the open course since it is unreasonable to expect to get into the closed course, given the situation.

____ 3. I'd ask to be put on the waiting list, with the preference that a senior should be given, and sign up for the other course as well, as a safeguard.

Please answer the following questions:

A. The behavior(s) you chose, how well does it (do they) capture what you would do in this situation? ____________________________________________

B. Have you ever actually been in a situation like this? ____________

C. If so, what did you do? ____________________________________________

D. What happened? ____________________________________________
10. You are living in a university dormitory in a room which you share with a roommate. Since moving in, you have put a lot of effort into trying to get along with him (her). The two of you are not highly compatible, but you think that it shouldn't be impossible for the two of you to get along, if you both make an effort to do so. Recently, you've come to realize that you are making most of the effort; that between one thing and another, you're getting the raw end of the deal. Your roommate continually asks you to do favors for him (her) and makes other demands on your time as well. You realize that giving in to your roommate's requests is not helping the relationship. To improve the relationship you're going to have to stop trying so hard to please, express your feelings more openly, and make a few requests for assistance yourself.

Your roommate comes in one afternoon and, just as you're about to ask him (her) to do something for you, your roommate mentions that he (she) is going away for the weekend and won't be able to bring some things over to a Saturday committee meeting as promised. Before you can respond, your roommate says, "I'm sure you won't mind doing this for me; it's very important, and can't be helped."

How likely is it that you would do each of the following?

_____ 1. I'd tell my roommate that I'll be glad to do it, since it is an important and unavoidable request.

_____ 2. I'd tell my roommate that I'm sorry but I don't want to run the errand.

_____ 3. I'd tell my roommate that I'll run the errand, but that I resent being treated like a slave.

Please answer the following questions:

A. The behavior(s) you chose, how well does it (do they) capture what you would do in this situation? ___________________________

B. Have you ever actually been in a situation like this? _________

C. If so, what did you do? ___________________________

D. What happened? ___________________________
11. Duke participates in a special summer program with a number of other colleges, for highly select students. The program involves a good deal of field work. It ties in with your major, and would be the first real experience you've had in the field. To get into the program, you must get an application form from your academic advisor, complete it and return it with a faculty member's sponsorship. The program interests you a good deal and you decide to get more information from your advisor. The details of the program sound good to you, and you ask your advisor for an application form. Your advisor gives you the form, but while doing so mentions that only a few students can participate, that the competition for places is fierce, and that consequently you shouldn't count on being accepted. You must include a $10. fee with your application.

How likely is it that you would do each of the following?

___ 1. I'd apply for the program, spend a lot of time on the essay asking why you want to participate in the program and ask the professor who knows me best to write the letter of recommendation.

___ 2. I'd first check on other similar programs and apply to a few of them. I'd probably apply to this program as well.

___ 3. I would not apply--given the situation, it isn't worth the time and energy involved in applying, nor the required fee.

Please answer the following questions:

A. The behavior(s) you chose, how well does it (do they) capture what you would do in this situation? ________________________________

__________________________________________________________

B. Have you ever actually been in a situation like this? _________

__________________________________________________________

C. If so, what did you do? ________________________________

__________________________________________________________

D. What happened? _________________________________________

__________________________________________________________
REFERENCES


James, W. Pragmatism. New York: Longmans, Green, 1907.

James, W. & Rotter, J. B. Partial and 100% reinforcement under chance and skill conditions. Journal of Experimental Psychology, 1958, 55, 397-403.


Lefcourt, H. M.  Belief in personal control: Research and implications. *Journal of Individual Psychology*, 1966, 22, 185-195. (a)


Moos, R. H.  Sources of variance in responses to questionnaires and in behavior. *Journal of Abnormal Psychology*, 1969, 74, 405-412.


