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THE EFFECT OF SYNTHESIZED I-E CHANGE  
TECHNIQUES IN MODIFYING LOCUS OF CONTROL  
EXPECTANCIES.

THE UNIVERSITY OF NORTH CAROLINA AT  
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THE EFFECT OF SYNTHESIZED I-E CHANGE TECHNIQUES  
IN MODIFYING LOCUS OF CONTROL EXPECTANCIES

by

Delano Rudolph Suggs

A Dissertation Submitted to  
the Faculty of the Graduate School at  
The University of North Carolina at Greensboro  
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of the Requirements for the Degree  
Doctor of Education

Greensboro  
1978

Approved by

Marian Franklin  
Dissertation Adviser

APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of the Graduate School of The University of North Carolina at Greensboro.

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SUGGS, DELANO RUDOLPH. The Effect of Synthesized I-E Change Techniques in Modifying Locus of Control Expectancies. (1978)

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The purpose of this study was to determine the effectiveness of synthesized I-E change techniques in modifying locus of control expectancies in an internal direction. Two hypotheses were investigated. The first research hypothesis stated: University student counselees whose individual counseling includes I-E change techniques will be more internal in locus of control expectancies following counseling than counselees whose counseling does not include I-E change techniques. The second hypothesis served as a control: The effect of counseling on locus of control expectancies for university student counselees will not vary with different counselors.

The subjects were 24 university students, 19 females and 5 males, who applied for counseling at a university counseling center. The subjects were randomly assigned to four groups, and counselors then were randomly assigned to the groups. In the control group traditional counseling techniques were used, and I-E change techniques were used in the experimental group. Pre- and posttest scores were obtained for each subject from Rotter's I-E scale. Pretest scores were used to test for homogeneity of variance within the four groups, and to determine if the groups were equal on locus of control expectancies. Posttest I-E scores were used for the criterion measure of the dependent variable,

locus of control expectancies. The PC (personal control) subscale of the I-E scale was also used in obtaining separate pre- and posttest data from the full I-E scale. A factorial analysis of covariance was employed to test the hypotheses using the I-E scale, and a factorial analysis of variance was used to test the hypotheses using the PC subscale.

Hypothesis one, that groups receiving I-E change techniques in counseling would be more internal in expectancies than groups receiving traditional counseling techniques, was accepted. The difference between levels of the independent variable, counseling, was statistically significant beyond the .05 level. Hypothesis two was accepted. There was no statistically significant interaction between counselors and counseling on the criterion measure. The I-E change techniques were effective in lowering external locus of control expectancies regardless which counselor employed them.

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## CHAPTER 1

### INTRODUCTION

J.B. Rotter's social learning theory developed from the need to account for complex human social behavior while retaining the capability of empirically investigating the hypotheses generated by the theory. One aspect of Rotter's social learning theory (SLT), the locus of control variable, has generated much research (Throop & McDonald, 1971). The majority of this research has dealt with content (personality theory), rather than clinical application.

Locus of control is a construct within Rotter's SLT used to denote the position of individuals on a continuum of perceived source of generalized expectancies for reinforcement. If an individual comes to expect, from his history of reinforcements, that reinforcement is contingent upon his personal effort and therefore his responsibility, his behavior will be affected. This person will believe the ultimate source affecting reinforcement is himself, thus under his control--control within himself, internal. If a person, because of his reinforcement history, fails to learn the contingency between personal behavior and obtaining reinforcement, he will tend to emit less behavior which is effective in obtaining reinforcement. He attributes control of reinforcement to forces external to himself, and

not under his control. He does not believe he is responsible for what good comes to him and his behavior is less efficient and ill-adapted for obtaining reinforcement (Rotter, 1966; Lefcourt, 1972).

Results from research investigations (reviewed in more detail in Chapter II have described external persons as (a) conforming trend-followers, (b) less efficient in utilizing cues which indicate a situation contains potential reinforcement, (c) more likely to yield to temptation, (d) more associated with lower class membership, (e) less involved in activities (for example, civil rights) designed to improve their well-being, (f) more maladjusted, anxious, depressed, and more associated with mentally ill hospital populations than internally orientated persons. If these characterizations of external individuals are valid, a change in locus of control to a more internal orientation would be a need recognized by the helping professions and especially advantageous in a demanding and competitive university population. If counseling legitimately advocates changing behaviors, Lefcourt stated, "then an external locus of control is a decided obstacle, and therefore, a target for change" (1966, p. 27).

Recognizing this need to change external locus of control expectancies, some research has been reported which indicates that externality can be therapeutically modified (Masters, 1970; Majumder, Greever, Holt & Friedland, 1973;

Moser, 1975). In this published research, embryonic tactics were used to modify external expectancies. These primitive techniques at this stage of development were designed to be incorporated with other counseling approaches, since the techniques are not sufficiently evolved to constitute an independent counseling approach. These methods are frequently referred to as internal-external (I-E) change techniques, I-E counseling techniques, or simply change techniques (MacDonald, 1972; MacDonald, Majumder, & Greever, 1972; Majumder, et al., 1973). The counseling techniques which have been developed to directly alter I-E expectancies originated from the work of several researchers and are unrefined and lack any synthesization. In spite of these shortcomings, however, these crude techniques have been, in different combinations and singly, consistently effective in changing external locus of control expectancies (MacDonald, 1972). MacDonald (1972) reflected the general consensus of other researchers concerning the further development of the techniques: (a) effort should be made to refine the I-E change techniques, (b) effectiveness of the I-E change techniques should be continued to be supported by additional research, and (c) effort should be made to synthesize the various techniques which have developed independently into a "global strategy" (p. 47).

What MacDonald meant by "global strategy" was not clear. Perhaps he was suggesting that the additive effect

of the individual techniques would be more effective in changing locus of control expectancies. It is possible that MacDonald was suggesting an interactive effect of the individual tactics; that is, when combined their effect on locus of control expectancies would produce more change than the sum of all the techniques taken separately. Finally, it may be supposed that a synthesis of the techniques into the progressive structure of the counseling sequence might be most advantageous. The nature of the individual techniques does not suggest any kind of progressions or sequence, but counseling theory does recognize the importance of this process in counseling (Lewis, 1970; Greever, et al., no date). In order to maximize the effectiveness of the I-E counseling techniques, the synthesis attempted in this study will integrate the techniques into a treatment procedure consistent with Rotter's SLT and consistent with the idea of a progressive sequence in counseling. Chapter III will further explain this progressive syncretic approach.

The I-E change techniques will be briefly described and explained here and will be further discussed in Chapter II and in Chapter III. Reimanis and Schaefer (1970) developed several techniques designed to alter I-E control of expectancies: (a) confronting external statements, (b) verbally reinforcing internal statements, and (c) constantly emphasizing the contingency between (the client's)

behavior and the consequences the client seeks (also found in MacDonald, Majumder, & Greever, 1972). In the same year Dua (1970) developed an action program technique for dealing with problems in interpersonal relations. The clients, with the help of the therapist, defined interpersonal problems in behavioral terms. The action program consisted of formulating specific behaviors designed to correct the problem behaviors within the interpersonal relations. By emitting behaviors directed toward a specific personal need or desire, the client behaved in a way defined by Rotter's SLT as internal control. Dua believed that the "internal" action on the part of the client would produce the result desired by the subject and would serve to strengthen the internal locus of control expectancy. The results of Dua's study supported his prediction (Dua, 1970; Cited in MacDonald, et al., 1972). Masters (1970) in the same year published a single case history demonstrating a "reconstruction of stimuli" technique (p. 213). An adolescent boy saw his life controlled by others (external locus of control attitudes), primarily by his parents. The client was regularly ordered by his parents to do certain household chores and was punished when he resisted or refused to do them. The process of reinterpreting these external stimuli (orders to do chores) included (a) helping the client perceive the orders of the parents not as signs of parental control as much as (b) seeing them as the client's



way of controlling his own reinforcements (certain privileges desired). (c) The client performed the chores without being reminded by his parents and his "internal" behavior resulted in his controlling the desired reinforcements (Masters, 1970; MacDonald, et al., 1972). Felton and Biggs (1972), and Felton and Davidson (1973) utilized the previously mentioned confrontation technique, together with the Gestalt emphasis on verbal and behavioral responsibility, and "orientation to present time" (Felton & Biggs, 1972, p. 282; Felton & Davidson, 1973, p. 465). By centering the therapy on the present, Felton and Davidson believed it was difficult for the client "to avoid being response-able" (Felton & Davidson, 1973, p. 465). These additional I-E change techniques, "orientation to present time," and the "language of responsibility" came from Gestalt therapy (Fagan & Shepherd, 1970; Perls, 1969). Felton and Biggs (1973) used the same techniques, orientation to present time, confrontation, and the language of responsibility which Felton and Davidson (1973) used. Reimanis (1974) used the technique of confrontation already mentioned (Reimanis & Schaefer, 1970), and the substitution of an external locus of control statement with an internal locus of control statement. Reimanis (1974) explained that further along in the counseling sessions the client was "interrupted" when problems were being verbalized and encouraged to analyze external statements, substituting

internal verbal responses for external ones. Reimanis' technique also included analysis of possible future problems the client might encounter. Moser (1975) also emphasized overt behavior in his psychotherapy with male prisoners. The presenting of alternative internal behaviors is a technique already described (Reimanis, 1974). Moser (1975) attempted to point out to clients the "unreasonable basis for ... present external locus of control and consequent behavior" (p. 24). This form of confrontation used by Moser projected the overt behavior and its consequences into the client's "ideational content" (p. 25). Moser, in addition, utilized techniques found in such counseling approaches as behavior modification (for example, behavior rehearsal, and role-playing), plus analysis of external verbal responses, substituting alternative internal responses for external ones, and reinforcement for internal verbal responses used in previous studies.

Research studies were not found which used the I-E change techniques in individual counseling with university counselees. Dua (1970) combined one technique, behavior action or action program, with group psychotherapy to determine if this would produce more internal locus of control expectancies. Individual counseling was not used. Pierce, Schauble, and Farkas (1970) employed counselees at a university counseling center as subjects in their study but did not employ any of the above I-E change techniques. Pierce,

et al., simply "explained very straightforwardly what I-E was about, and that it was thought to be a very helpful way of looking at problems" (p. 218). No other information was reported about the treatment other than it was used for twenty minutes of one session for each counselee. Due to this lack of information, together with the obvious confounding of the criterion measure by the treatment, no certain conclusions can be drawn from this study of counselees at a university counseling center.

If the primitive I-E change techniques which do exist are to be useful to the counseling field as a whole, research must be undertaken to determine the effectiveness of these change techniques with many different samples of counselee populations. Will these I-E change techniques produce the same beneficial results with university students, when combined with methods of individual counseling, as these change techniques have produced in studies using low achievers, freshmen English students, and disadvantaged youth in predominantly group treatment? To attempt an answer to this question the following research problem will be investigated: Will university students who receive different counseling techniques from counselors at a university counseling center show differential effects in locus of control expectancies?

### Research Hypotheses

From the above research problem, two research hypotheses can be investigated:

1. University student counselees whose individual counseling includes I-E change techniques will be more internal in locus of control expectancies following counseling than counselees whose counseling does not include I-E change techniques.

2. The effect of counseling on locus of control expectancies for university student counselees will not vary with different counselors.

### Significance of the Problem

The majority of the research about locus of control expectancy has dealt with locus of control as an independent variable. Personality theory is the area of psychology which has focused on this research. Very little information is available about locus of control expectancies as a dependent variable. Psychotherapy and counseling would share the predominant role in research in this area.

Internal locus of control behavior has been characteristically described as motivated to initiate behaviors to remedy personal and social problems (Lefcourt, 1966; 1972). It seems reasonable that effective change from externality toward internality would be both desirable and beneficial as a goal in a university counseling center. From counseling

which resulted in greater internality, the client would be more adequately equipped to emit achieving and coping behaviors which would elicit the reinforcements he both needs and desires from life.

The dearth of techniques to change locus of expectancies has been pointed out by several writers (MacDonald, 1972; Majumder, et al., 1973; Greever, et al., no date). The present research attempted to formulate a synthesis of existing I-E change techniques in a progressive treatment sequence consistent with the theory behind locus of control, and counseling theory.

The relevance of this research is based on the attempt to (a) synthesize existing partially developed I-E change techniques, (b) to further the refinement of these techniques, (c) to integrate this synthesis and refinement into the process of counseling, and (d) to examine the subsequent effectiveness of this expansion of I-E change techniques to change locus of control expectancies.

### Limitations

The scope of this study was limited to a sample population made up of university students who became counselees at a university counseling center. This constitutes a limitation because the results cannot be generalized to other samples of counselees of different ages, with different problems, and in different settings. Future research will

be needed beyond the scope of this investigation to determine the applicability and effectiveness of these combined techniques to other types of counselee populations.

A further limitation consisted of the impossibility of selecting clients for this study from the whole population of clients from all universities by means of random sampling. Within the sample used, however, the subjects were randomly assigned to the treatment groups. Kerlinger stated concerning this procedure, "in fact, we can regard the random assignment as random sampling" (1964, p. 127). In light of this, perhaps the inability to randomly decide which counsees from all possible counsees would participate in this study was not a serious limitation to internal validity. However, not being able to randomly select counsees affected external validity and constituted a limitation to the study.

An additional limitation of this research involved the difference between the criterion measure (Rotter's I-E scale), and the general behaviors of the clients in other settings. Since the I-E scale has been reported to have acceptable construct validity (Rotter, 1966), this study was undertaken on the assumption that the clients' behavior in general will be consistent with responses on the criterion measure.

No follow up was possible within the scope of this study. Therefore, it was not possible to know if the effects

of any experimental treatment were permanent. Suggestions will be made for further research in Chapter V with respect to this limitation.

### Definition of Terms

Because some of the concepts used in Rotter's SLT have been redefined, the following definitions will prove helpful to the reader.

Behavior: "All human responses having an effect on the environment" (Rotter, Chance & Phares, 1972, p. 9).

Empirical law of effect: "Any stimulus complex has reinforcing properties to the extent that it influences movement toward or away from a goal" (Rotter, et al., 1972, p. 9).

Expectancy: "The occurrence of a behavior of a person is determined not only by the nature or importance of goals or reinforcements, but also by the person's anticipation or expectancy that these goals will occur. Such expectations are determined by previous experience and can be quantified" (Rotter, et al., 1972, p. 15).

I-E: Internal-external.

I-E scale: In this study I-E scale will generally refer to Rotter's I-E scale (Rotter, 1966. See Appendix A).

Internal:

Internality:

External:

Externality:

Locus of control:

Locus of control expectancy:

Generalized expectancy:

Expectancy:

All of these expressions are various alternate forms for: internal or external locus of control of expectancy for reinforcement.

SLT: In the present study social learning theory (SLT) refers to Rotter's social learning theory.



## CHAPTER II

### REVIEW OF RELATED LITERATURE

The design of this chapter will be to present first a brief overview of the broad historical and theoretical background out of which Rotter's SLT developed. Next, the basic principles on which SLT rests will be summarized, followed by the important concepts of the theory. From one of these important concepts a personality construct has emerged attracting considerable attention in recent research. Selected research studies will be presented dealing with this construct, locus of control. The chapter will conclude with a review of the literature which reflects attempts to modify or change this construct.

Within the field of psychology, J.B. Rotter has formulated a social learning theory (SLT) which he developed in the late 1940s and early 1950s from the theory and research of many psychological forebearers. Most notable among these contributors were Alfred Adler, J.R. Kantor, Kurt Lewin, E.C. Tolman, and C.L. Hull (Rotter, et al., 1972). From these theorists and researchers it is clear that learning theory and field theory are the two main streams from which Rotter's SLT developed. Rotter attempted to combine the objective research characteristic of learning theory with personality theory, social

psychology, and clinical psychology (Murray & Jacobson, 1971). Other theorists were contemporaries of Rotter's initial efforts and similarly built approaches synthesizing learning theory and psychotherapy (Dollard & Miller, 1950; Mowrer, 1950; Murray, 1954).

Rotter's purpose in developing his SLT was to bridge the gap between the molecular behavior studied by Thorndike, Hull, and others, and human behavior which more frequently than not had to be studied in complex social settings. Behavior studied in the laboratory more often utilizes animal subjects than human, which Rotter felt limited its applicability to human behavior. In addition, laboratory behavior study generally focused on small segments of behavior which facilitated operational definitions and increased control in experiments. The emphasis on molecular behavior, Rotter recognized, has yielded many behavior principles worthwhile in the study of human behavior. The exactness and control possible under laboratory conditions enable hypotheses to be tested which is difficult with humans in natural surroundings. To remove a human from his social setting and place him in a laboratory setting, however, affects the outcome of the research in a way difficult to measure. Rotter, in developing SLT, was unwilling to relinquish the testable hypotheses of learning theory. At the same time he did not wish to ignore the complexity of human behavior in the normal social environment. These two priorities shaped the theory and

defined its purpose (Rotter, 1954; Rotter, et al., 1972).

### Basic Principles of Rotter's SLT

The principles of SLT are formally stated in the literature, and fulfill at least three functions in the theory. First, they state the presuppositions or assumptions. Second, they are position statements in the vast field of psychological theory. Third, they represent the guidelines by which the theory functions (Rotter, 1954, 1971; Rotter, et al., 1972).

The first principle of SLT states the aspect of human behavior upon which SLT focuses: the interaction of the person with his environment. In contrast, other theories are concerned with inward states of the individual, or instincts (Freud, 1938), diseases or illnesses (Kraepelin, 1913), or constitutional types (Sheldon, 1942). From this first principle two observations are possible. The influence of field theory is noticeable, and the importance of learned behavior is suggested.

A second principle of SLT denies the necessity of reductionistic and dualistic conceptualizations in psychology. Reductionism attempts to find reality by reducing behavior from a molar to a molecular level. The assumption in reductionism is that complex phenomena must be reduced to simpler, even to elementary parts in order to be understood and explained. Such a viewpoint is notable in S-R theories,

and indicates a point where SLT departs in favor of field theory. Similarly, the concept of dualism is rejected. Dualism from the SLT viewpoint is defined as attempting to explain or determine cause in one level of reality from a different level of reality. For example, to say that a psychological problem "causes" a physical condition, is dualism (Rotter, 1954; Rotter, et al., 1972).

A third principle of Slt maintains the unity of personality. This emphasis is not to be confused with a reductionistic viewpoint that might, for example, suggest that all behavior comes from one predominant drive or fixation. Instead, this principle defines the unity of personality by stating that all of the individual's past experiences influence all subsequent experiences (Rotter, et al., 1972). SLT recognizes multiple causation as one of the complexities of human behavior and opposes any single cause approach.

That behavior is goal-directed, and that the direction is determined by the greatest amount of positive reinforcement in a given situation, are two of the most important principles in SLT. Rotter combines these two principles into one idea and calls it the empirical law of effect which is very similar to the principle of reinforcement in operant conditioning. The main difference between the two concepts is that the empirical law of effect emphasizes motivation toward a goal rather than the probability of an increase in behavior (Rotter, et al., 1972).

One of the important and distinctive characteristics of SLT is that it adds to the principle of reinforcement the concept of expectancy. In humans at least, behavior is influenced toward a goal by reinforcing stimuli, and, in addition, by the expectation that the goal will be reached. These expectations originate from and are determined by the subject's past experiences. In situations where only potential reinforcers are present, humans will respond. These responses, according to SLT, are goal directed as opposed to drive reduction or need satisfaction (Rotter, et al., 1972).

SLT recently developed from learning theory and field theory to account for the complexity of human social behavior. The principles on which the theory is built state its assumptions, theoretical position, and guidelines: (a) the behavioral focus is the person's interaction with his environment, (b) reductionism and dualism are avoided, (c) personality has unity, (d) behavior is goal directed, and (e) behavior is controlled by reinforcement plus the expectation of reinforcement.

The next section reviews briefly the basic concepts of SLT as a theoretical framework for examining selected literature dealing with the psychological construct Rotter defined as locus of control.

### The Basic Concepts of Rotter's SLT

The four basic concepts of SLT present its theoretical framework. These are the concepts which when translated into hypotheses make research studies and the prediction of behavior possible in its natural, complex social setting.

Behavior potential. SLT defines behavior potential as the likelihood that a behavior will be emitted in a situation. Rotter's formula for behavior potential is:

$$BP_{x,s_1,R_a} = f (E_{x, R_a, s_1} \& RV_{a, s_1})$$

The formula states the behavior potential for behavior x in situation l with reinforcement a is a function of the expectancy for reinforcement a following behavior x in situation l, and the value of reinforcement a in situation l (Rotter, et al., 1972, p. 14).

Reinforcement value. Reinforcement value is the extent to which a person selects one reinforcer when several are equally available. The formula says that the reinforcement value of reinforcement a in situation l is a function of the expectancies that specific reinforcement a will produce reinforcements b to n in situation l, and reinforcement values of b to n in situation l (Rotter, 1954; Rotter, et al., 1972):

$$RV_{a,s_1} = f (E_{R_a - R_{(b-n)}, s_1} \& RV_{(b-n), S_1})$$

Psychological situation. The psychological situation is an important concept in SLT. Theoretically, it is a position statement denoting an interest dimension of SLT. Psychological situation contains two important concepts. Psychological refers to the internal environment of the person, and situation refers to the social environment. Each social situation is a source of stimuli which produce expectancies of reinforcement within the person. He will not behave the same across different situations. That behavior is situation specific is an important principle in learning theory (Rotter, et al., 1972; Mischel, 1968).

Expectancy. Expectancy is defined in SLT as the presumption a person has that a certain behavior will produce a certain reinforcement in a given situation. The formula for expectancy in situation 1 is a function of the probability that reinforcement will occur based on similar past experience in similar situations ( $E'_{s_1}$ ), and the subject's generalized expectancies (GE) of reinforcement for the same behaviors in other situations divided by the number of experiences in the specific situation:

$$E_{s_1} = f \left( E'_{s_1} \ \& \ \frac{GE}{n_{s_1}} \right)$$

If the subject has had many experiences in the same situation, it will reduce the effect of generalization from other situations that are only related in some way to the given

situation (Rotter, 1954; Rotter, et al., 1972, p. 25).

The basic concepts of SLT are behavior potential, reinforcement value, the psychological situation, and expectancy. These four theoretical pillars form the foundation for this psychology and make up the structural framework from which the theory and research continue to build. All of the basic concepts of SLT function to increase the ability to understand human behavior which is assured only when it can be accurately predicted.

#### Other Concepts

The previous sections, especially the section on basic concepts, have been concerned primarily with small segments of behavior in spite of SLT's orientation towards broader concepts and its interest in complex social behavior. This section deals with more general concepts applicable beyond the confines of the laboratory. The difference between the two sections is primarily a difference between specific behaviors, reinforcements, and expectancies. Additional concepts come into SLT at this broader level of abstraction.

Need value. Reinforcement value was determined by assessing the individual's preference for one reinforcement when other alternate reinforcements were equally available. Need value indicates the preference for a class of similar reinforcements when expectancy is the same for all available classes of reinforcements (Rotter, et al., 1972).



Need potential. Need potential is an expansion of the idea of behavior potential. Behavior potential deals with the probability that a certain behavior will occur. Need potential concerns itself with a class of behaviors all of which are designed to secure a particular reinforcement or class of reinforcements (Rotter, et al., 1972).

To offset the deficit in learning theory of neglecting the content of personality theory by concentrating exclusively on behavior, SLT developed six need descriptions:

1. recognition-status
2. protection-dependency
3. dominance
4. independence
5. love and affection
6. physical comfort

These abstractions or psychological constructs indicate the direction of behavior. In general, these descriptions are culturally derived, which limits their utility in individual prediction (Rotter, et al., 1972).

Freedom of movement. The concept of expectancy is defined in SLT in relation to a specific behavior. Freedom of movement is the mean expectancy for a class of reinforcements from a class of behaviors. When a person's expectancy for obtaining reinforcements is strong in a particular need area, this is defined as freedom of movement in that need area. To state it another way, when a person thinks his

behaviors will enable him to obtain his goals, he has freedom of movement. The person who has little freedom of movement is likely to think he will receive punishment or will be unable to reach his goal. Rotter identifies this concept with the concept of anxiety in other theories. Thus low expectancy for success, high expectancy for punishment, and defensiveness are all correlated. Likewise, avoidance behaviors imply low freedom of movement (Rotter, et al., 1972).

Minimum goal level. Minimum goal level refers to the lowest positive reinforcer which satisfies a person in some need area. A reinforcer which falls below this level would be a negative reinforcer in SLT. Rotter postulates this concept as an explanation of why some people reach goals, but remain unsatisfied with the goals and even feel failure, when others consider the same goals to be very high and of great value. To fail to obtain reinforcement at the minimum goal level or above, is low freedom of movement (Rotter, et al., 1972).

Generalized expectancies. Generalized expectancies are perceptions of what controls reinforcement. In SLT the perception of similarity in the control of reinforcement across various situations can be divided into (a) generalized expectancy of external control of reinforcement, and (b) generalized expectancy of internal control of reinforcement.

By means of the broader more general concepts of SLT reviewed in this section of the chapter, the combining of behaviors of individuals is possible. In theory, this accomplishes the basic purpose of SLT to bridge the gap between molecular behavior and molar behavior in the complex social setting in which humans usually exist.

Within the framework of SLT reviewed above, the next section will review selected research which characterizes internal locus of control behavior and external locus of control behavior. Following this review, research dealing with the etiology of locus of control expectancies, and research dealing with the modification of locus of control will be reviewed.

### Locus of Control

Internal-external locus of control designates a psychological construct or personality variable which is not discrete, but exists on a continuum. The designation, internal or external, is usually assigned to scores which are divided at the median of an I-E scale. Rotter's I-E scale is one of several instruments which measures this personality variable and makes the designation internal or external possible (Rotter, 1966; Throop & McDonald, 1971; Lefcourt, 1972).

The definitive statement to date about the locus of control concept is a monograph published by Rotter in 1966.

Rotter described a belief in external control as characterizing the individual who thinks his reinforcements come from such external sources as fate, luck, chance, powerful others, experimenter control, or as a function of the network of forces encompassing him. If a person perceives that reinforcements come to him as a result of skill or his own effort, such a person was described as believing in internal control (Rotter, 1966). The significance of such a variable is easily and readily apparent, and its popular interest is reflected in the literature (Lefcourt, 1972).

This section will review research that establishes the characteristics of persons designated internal or external. How internals or externals may be characterized will be reviewed under broad topics which seek to elicit from research how locus of control is affected by influence, ethnic differences, and how coping behavior and psychological adjustment are related to locus of control.

Characteristics of I-E persons. Theoretically, it is consistent to expect individuals who believe reinforcement will largely come from their own effort to be less affected by influence outside themselves than individuals who anticipate that reinforcements will result from sources outside themselves. Gore (1963) reported that examiners attempted to influence subjects by a pleasing voice, gestures, and smiles to increase the length of stories in response to TAT cards. Internals appeared to react negatively to the subtle

attempt at influence by producing shorter TAT responses than externals under the same control. However, during extinction trials, when the subtle attempts to influence were discontinued, the difference between internals and externals on length of TAT stories was not obtained. Similarly, Getter (1966), in a study utilizing a verbal response as the dependent measure, expected to find internals more resistive to subtle attempts to condition verbal behavior than externals. The subjects were 76 males and 54 females from an introductory psychology class. The I-E locus of control variable was utilized in an effort to predict the amount of conditioning necessary to acquire verbal conditioning. As anticipated, externals reached acquisition criterion levels quickly (I-E mean, 11.29). Internals failed to acquire acquisition level on subtest I during the reinforcement contingency, but did reach acquisition level on subtest II which offered no reinforcement (I-E mean, 6.50). The difference between the I-E means of the two groups is statistically significant ( $t = 3.99, p < .001$ ). These findings suggest that externals are affected more than internals by influence and cues from others. Getter interpreted these findings to imply internals have adverse feelings about being manipulated.

In most of the above experiments the influence consisted of experimenter influence, subtle or explicit. Johnson, Ackerman, Frank, and Fionda (1968) investigated the

relation of temptation to the locus of control variable. The experimental task consisted of completing a story. The stories presented the subject with a moral dilemma. The subject could have the person in the story yield to the temptation or not yield. Internal males were found to resist temptation significantly more than external males ( $r = .38, p < .01$ ). If temptation can be viewed as a form of influence, then support was again indicated by this research for the hypothesis that internals (males in this case) are not as affected as externals by such influence.

Ritchie and Phares (1969) investigated the effect of influence on the I-E dimension by varying the prestige of the reinforcer to determine the effects on attitude change. The results indicated that externals showed the greatest attitude change when the influencer had high prestige. Strickland (1970) found that subjects' I-E scores were related to their awareness of or denial of having been influenced by subtle reinforcement on a word selection task ( $N = 165, r = .41, p < .01$ ). Internals tended to deny more than externals any influence from the experimenter's verbal reinforcement. A Mann-Whitney U Test yielded a value of 10 ( $p < .07$ ) indicating that those who denied the influence and did not condition, were more likely to be internal. These same internals tended to show a rise in conditioning during extinction trials which is similar to the findings of Gore (1963) and Getter (1966). A  $t$  value of 2.71 between

the final two series of word selection tasks obtained a  $p < .02$ . The mean I-E for the group who denied being influenced was lower (more internal) than the other groups (mean = 6.58), and differences between the groups were significant ( $t = 1.72$ ,  $p < .02$ ). In attempting to apply these findings to psychotherapy, Strickland suggested that internals might possibly resist the suggestions and interpretations of the therapist, but ultimately utilize the suggestions and claim credit for them. In addition, these findings indicated that for therapists attempting to directly control the behavior of internal clients, such as in behavior modification, it is crucial to have the cooperation of the client.

Biondo and MacDonald (1971) questioned the findings that suggest internals are resistant to covert influence, but not overt influence (Ritchie & Phares, 1969; Getter, 1966; Gore, 1963; Strickland, 1965). Biondo and MacDonald (1971) hypothesized that SLT suggests internals will resist influence to control them in any form, subtle or overt. A total of 144 psychology students, equally divided between the sexes were placed in low, high, and no influence situations. Dependent measures were change in ratings on a new university grading system being considered. Minus rating score changes indicated negative responses away from the direction advocated by influence attempts, and positive rating score changes indicated compliance with the direction

of the influence. Internals showed a negative response to the effects of influence (mean change of  $-.541$ ), middle I-E subjects remained unaffected (mean change of  $.131$ ), and externals showed positive effects from the influence (mean change of  $.581$ ). Under influence conditions, internals changed in the opposite direction from that advocated by the influence, and the difference between the internals and externals was due entirely to this negative reaction by the internals ( $t = 4.104$ ,  $df = 30$ ,  $p < .01$ ). Externals were equally affected by the low and high influence. Internals resisted strong influence, but contrary to the hypothesis did not show resistance to the low influence condition.

Ethnic differences and locus of control have been the subject of considerable research. Only two research reports will be reviewed here. This will establish the trend of the findings and characterize the I-E expectancy as it relates to most of this research.

Battle and Rotter (1963), utilizing a sample of 80 eighth-grade children of both black and white ethnic origin, administered the Children's Picture Test of Internal-External Control. The experimental task was a line-matching procedure. Before matching the lines the subject stated his expectancy for success on each matching trial. Following the training phase in which the subject received 50% reinforcement, the subject received 30 extinction trials. It was the subjects' behavior on the non-reinforced extinction



trials that constituted the dependent measure. Significant differences in I-E scores were obtained between middle-class white and lower-class black ( $t = 2.75, p < .01$ ), and lower-class black and middle-class black ( $t = 2.10, p < .05$ ). No significant differences were obtained on the line-matching task, but during the ten training trials expectancies for success related to the children's I-E scores ( $r = -.31, p < .01$ ). Internals predicted they were going to succeed more than externals. Ethnic group membership is related to belief in locus of control, lower-class blacks being more external than middle-class blacks or whites.

Lefcourt and Ladwig (1966) investigated the relationship between Negro and white inmates on the I-E variable. Other variables were compared of no relevance to this review. Sixty black and 60 white reformatory inmates were compared on ethnic group and I-E expectancy. Except for ethnic membership the sample was homogeneous (social class, intelligence level, age, nature of crime). The obtained means for the I-E scale were 17.30 for the blacks and 14.63 for the whites ( $t = 2.89, p < .01$ ). Whites failed to differ from a normative population, while blacks differed at the .001 level in the direction of higher externality ( $t = 4.42$ ).

There seems to be little or no disagreement about the relation of I-E and ethnic group membership in the research on locus of control expectancy.

A few reports will be reviewed next which in a broad sense characterize the manner in which individuals cope with their life situation and the relationship this coping behavior has to generalized expectancies.

Odell (1959) compared Rotter's I-E scale and Barron's Independence of Judgment Scale and reported high external locus of control responses indicated a probability towards conformity. It is entirely conceivable that individuals who expect reinforcements to come from sources outside themselves would tend to conform more in the expectation that such compliance might increase desired goals and produce consistent reinforcements. Crowne and Liverant (1963) investigated conformity and generalized expectancy and found a significant difference between internals and externals in conforming behavior. In a perceptual discrimination procedure, subjects made bets about the correctness of their performance on the Level of Aspiration Board. In another experimental group, subjects made verbal expectancies of how accurate they believed their response would be on the task. A third experimental group formed the control group and were given no instructions about estimating the accuracy of their choices or betting on their accuracy. In the betting group it was found that externals conformed more than internals ( $t = 2.35, p < .05$ ). No differences were found between externals and internals in the expectancy group or in the control group. Externals, however, bet less on independent

trials than on trials in which they yielded ( $t = 2.68$ ,  $p < .02$ ), indicating they had less confidence in their choices than in the confederates' choices in the non-conforming trials.

Julian and Katz (1968) compared internals and externals on a synonym matching task. It was hypothesized that internals would under skill conditions prefer to do their own matching even though they were led to believe by the experimenter that their partners were more competent. Each subject could match words or defer to his partner. Under chance conditions, it was hypothesized that externals would choose to do their own matching. Neither hypothesis was substantiated. Internals, even under chance conditions, preferred to do their own matching. Apparently internals were motivated to obtain reinforcements through their own effort even under these experimental conditions. It is possible that in this experiment internals tended to ignore instructions, as in previous studies reviewed above, and attempted to do for themselves even when it might produce less reward.

If internals are prone to work out their own reinforcements, it would seem feasible that internals would endeavor to obtain all the information possible about a task situation to increase the likelihood of being successful. In a social influence task situation, Davis and Phares (1967) examined the information seeking behavior of internals and

externals. How much information sought was determined by the number of questions asked of the experimenter. Instructions were also varied in this experiment to create three conditions: skill conditions, chance conditions, and ambiguous conditions. Internals asked more questions of the experimenter in skill and ambiguous conditions, presumably to aid them to accomplish the alleged experimental task of modifying another person's attitude about the Vietnam War ( $F = 6.50$ ,  $df = 1/78$ ,  $p < .025$ ). Questions asked the experimenter were about the individuals the subjects were to attempt to influence. In the chance condition there was no difference between internals and externals on the criterion measure.

Seeman and Evans (1962) reported significant differences in the amount of information patients obtained about themselves while in residence in a tubercular hospital was a function of high alienation (external locus of control) and low alienation (internal locus of control). The high alienated patients' mean for amount of knowledge was 15.72, and the low alienated patients' mean for amount of knowledge was 17.21. The difference between these "internal" and "external" patients was significant at the .05 level ( $t = 2.216$ ). Similarly, Seeman (1963) found that inmates in a reformatory, who were internal, retained more information about themselves, their surroundings, and their future. In Seeman's study, however, internals differed from externals

in the amount of information only when the information was personally relevant to the internals in obtaining present and future reinforcements.

Bennion (1961) used an ambiguous task and employed the I-E variable by giving chance instructions and skill instructions. In the skill instruction groups (internal condition), expectancy increased significantly during success sequences and lowered during non-success sequences. The skill instruction groups made fewer shifts up ("gambler's fallacy") following failure. Bennion categorized internal locus of control subjects as "achievement followers," and external subjects as "trend followers" (Bennion, 1961, p. 3738). Phares (1968) expanded the study of the I-E dimension as it relates to achievement or information obtaining behavior. Internals were found to utilize information significantly more efficiently than externals ( $t = 4.60$ ,  $df = 27$ ,  $p < .01$ , two-tailed). These two studies supported the notion that external locus of control would not value the utilization of information to the extent that internals would, since externals feel that such factors as luck and chance play the major role in obtaining desired goals. It seems from this research that internal expectancies serve a more useful role in helping a person to cope with the demands of reality (Phares, 1968, p. 661).

Coping with life can involve more than perceptions, however, because conditions do exist in reality which are

not modified by or adequately dealt with through internal expectancies of reinforcement. Lipp, Kolstoe, James, and Randall (1968) utilized a sample of disabled and non-disabled subjects to whom slides of 15 disabled (threat slides) and 15 nondisabled (nonthreat slides) were tachistoscopically presented. A denial of disability score was computed as the difference between the number of trials to recognition on threat and nonthreat slides. As predicted, disabled subjects had a higher recognition threshold for threat slides than nondisabled subjects ( $F = 110.40$ ,  $p < .001$ ). Disabled subjects who scored in the middle of the I-E scale were more denying than extreme internal or external subjects. High externals were less denying than either high internals or middle I-E scale scorers. All of these differences were evaluated by  $t$  tests and all were significant beyond the  $p < .01$  level. In the nondisabled group the middle I-E scorers were less denying than either the extreme internals or externals. Lipp, et al., (1968), interpreted the results to indicate that the person who usually thinks that by self application he can control favorable consequences is threatened by disability. Externals on the other hand usually credit forces outside of themselves for the good and the bad consequences, and thus have a ready-made defense structure.

Phares, Ritchie, and Davis (1968) investigated essentially the same reaction to threatening stimuli. These

researchers hypothesized that externals would react with less anxiety than internals when faced with threatening material. Findings did not support this hypothesis. Subjects were 40 university students, 19 externals and 21 internals, who received threatening interpretations of personality tests results. There was no difference in the amount of anxiety produced by the threatening feedback between the internals and the externals. Following the feedback, a checklist of several available sources of improvement in mental health were presented to the subjects for them to indicate their preference. The sources of help were ranked according to the amount of personal commitment demanded by the subjects. The internal group indicated a significantly greater preference for help in improving mental health and greater willingness for person involvement to obtain help ( $t = 2.19, p < .01$ ). Apparently threatening feedback can be tolerated by both internals and externals, but internals show a preference to do something personally to cope with the threat. The nature of the threat is, it seems an important variable.

McDonald and Hall (1969) attempted to determine how nondisabled graduate students would perceive various kinds of disability. A correlation was found between perception of emotional disorders as most debilitating and I-E scores ( $-.30, df = 45, p < .05, two-tailed$ ). These findings suggested that internals find emotional disorders more

debilitating than externals. This appears to be additional support for the idea that internals are orientated toward personal effort and involvement in remedying threatening situations, and when disability is of such a nature as will interfere with this self effort, the disability is more threatening to the internal person.

Phares' (1962) research supported this kind of characterization of the internal's coping behavior. Subjects under three conditions (skill, chance, and no-shock) were compared in their ability to recognize tachistoscopically presented nonsense syllables. Negative reinforcement was used so that when subjects correctly perceived the nonsense syllables by closely attending to the situation (stimuli), they could attain a positive goal (escape from shock). The difference between the skill and chance groups in recognizing the shock syllables was  $t = 2.27$ ,  $p < .01$ . These findings were interpreted to indicate skill conditions (internal locus of control) enabled subjects to better deal with anticipated painful situations than chance conditions (external locus of control). These findings shed some light on the former research results reviewed above and anticipate many findings in the area of social action.

Gore and Rotter (1963) were among the first to investigate the relation of the I-E variable to civil rights activity. Civil rights is generally conceived to be an effort to cope with an unfavorable situation by eliminating the



problem through personal involvement. Gore and Rotter employed 116 students from a southern black college to determine the correlates of social action behavior. Results from a questionnaire, designed to obtain behavioral commitments from students for involvement in social action, were compared with I-E expectancies. Subjects willing to commit themselves to social action involvement were characteristically those who felt that what they wanted out of life would come about largely as a result of personal effort (internal expectancy). An F of 2.89,  $df = 4/111$ ,  $p < .05$  was obtained.

Strickland (1965) elaborated on the Gore and Rotter (1963) study by determining how subjects who were behaviorally involved in social action placed on the I-E dimension. The results ( $t = 3.58$ ,  $p < .01$ ) supported previous findings that individuals who were internal in their expectancies were significantly more involved in civil rights activity.

The next part of this chapter deals with a group of research findings relating aspects of mental function, mental health, and psychological adjustment to locus of control.

Bialer (1961) grouped 89 normal and retarded children together and performed intercorrelations between I-E scores and Peabody Picture Vocabulary Test scores. Locus of control correlated positively with mental age ( $r = .56$ ,  $p < .01$ ). Bialer also found a correlation between chronological age and locus of control ( $r = .37$ ,  $p < .01$ ). When

chronological age was partialled out, mental age remained significantly correlated ( $r = .47, p < .01$ ).

Hersch and Scheibe (1967) used 500 Service Corps volunteers at state mental institutions to compare numerous measures of maladjustment to I-E scores. The Pt scale of the MMPI significantly compared to the I-E scores (.26) and the d-statistic (discrepancy between self-description and ideal self-description), another measure of maladjustment, significantly related to I-E (.21). Hersch and Scheibe characterized the internal person as high on Defensiveness, Achievement, Dominance, Endurance, and Order, but low on Succorance and Abasement. On the CPI the internal was high on Dominance, Tolerance, Good Impression, Sociability, Intellectual Efficiency, Achievement via Conformance, and Well-Being scales.

Williams and Nickels (1969) correlated the results of Rotter's I-E scale, Keehn's Accident Index, Farberow and Devries' MMPI Suicide Scale, and Devries' Potential Suicide Personality Inventory from 235 introductory psychology students. Person product-moment correlations indicated a relationship between externality and suicide potentiality (MMPI S for males .25,  $p < .01$ , two-tailed; for females .18,  $p < .05$ ). A one-way analysis of variance on extreme I-E scores showed that external subjects had significantly higher accident prone scores ( $F = 12.80, p < .001$ ) and suicide prone scores (MMPI S  $F = 21.53,$

$p < .001$ ; PSPI  $F = 10.53$ ,  $p < .01$ ).

Abramowitz (1969) sought to determine the relationship between external expectancy and depression. Using 69 university undergraduates, Abramowitz postulated that external locus of control varies positively with depression. A 20-item I-E scale and the Guilford D scale of the Guilford Five-factor Personality Inventory and Marlowe-Crown Social Desirability Scale were administered. Results of the Guilford D scale were used to form three groups by rank order. A Spearman rank-order correlation between Guilford D rankings and I-E scale scores produced a negative correlation between internality and depression scores ( $r_s = .354$ ,  $t = 3.10$ ,  $df = 67$ ,  $p < .002$ , one-tailed). With effects of social desirability removed, the initial correlation remained significant ( $r_{xy.z} = .282$ ,  $t = 1.79$ ,  $df = 37$ ,  $p < .05$ , one-tailed).

Butterfield (1964) found a significant multiple correlation between locus of control and anxiety, both facilitating and debilitating anxiety ( $r = .809$ ,  $p = .01$ ). Tolor and Reznikoff (1967) used 79 students in introductory psychology courses to compare responses on an I-E scale, Death Anxiety scale, Tolor-Reznikoff Test of Insight, SAT, and the R-S scale (repression sensitization subscale developed from MMPI items). External locus of control expectancies were related to death anxiety ( $.232$ ,  $p < .05$ ), and the repression scale ( $.334$ ,  $p < .01$ ), and negatively

related to insight ( $-.257, p < .05$ ).

Feather (1967) administered a battery of tests to first year psychology students and found that an external locus of control related to males only on the Debilitating Anxiety measure ( $.38, p < .05$ ) and to females negatively on Social Desirability ( $-.43, p < .01$ ). Measures in which externality in males were not correlated were: Need Achievement, Facilitating Anxiety, Social Desirability, Intolerance of Ambiguity, Extroversion-Introversion, Neuroticism, Progressive Matrices, Test A L (advanced verbal ability), and Field Independence. Similar lack of significant correlations of external female measures were: Need Achievement, Debilitating Anxiety, Facilitating Anxiety, Intolerance to Ambiguity, Extroversion-Introversion, Progressive Matrices, and Field Independence. The obvious difference in males and females on the I-E dimension must be kept in mind in future experimentation, Feather pointed out.

Watson (1967) utilized a sample of 648 college students to compare responses on a locus of control scale, Manifest Anxiety Scale, and Achievement Anxiety Test. Pearson product-moment correlations produced significant correlations between the locus of control scale, the MA scale, and the debilitating subscale of the AAT scale (males:  $.38, p < .01$ ;  $.25, p < .01$ ; females:  $.35, p < .01$ ;  $.26, p < .01$ ; respectively). Watson felt these results supported Mandler and Watson's (1966) contention that external locus of control

orientation produces anxiety. Since these findings, even with the large sample, are correlational, no causal relationship can be inferred.

Platt and Eisenman (1968) found a significant difference between internal and external groups (Rotter's I-E scale, internal = 6 or below, external = 9 or above) in a sample of college students ( $N = 32$ ) on an anxiety measure, the Cornell Index ( $t = 1.914$ ,  $p < .05$ ). Platt and Eisenman found as they had predicted, externals had restricted time perspectives ( $t = 3.104$ ,  $p < .005$ ), showed poorer adjustment ( $t = 1.873$ ,  $p < .05$ ), and had greater anxiety ( $t = 1.914$ ,  $p < .05$ ) than internals. These findings were interpreted to mean that internal locus of control persons anticipated reinforcement to be available in many situations in life in which they will be involved.

Ray and Katahn (1968) attempted to determine if an anxiety factor existed in the I-E scale since several studies had reported correlations between external locus of control and types of anxiety (Mandler & Watson, 1966; Watson, 1967; Feather 1967; Platt & Eisenman, 1968). Over 500 students in introductory psychology courses were given the Manifest Anxiety Scale (MAS), the Test Anxiety Scale (TAS), and a locus of control scale. Ray and Katahn reported that all external locus of control scores correlated positively with MAS and TAS high anxiety levels. Only three items, however, reached significance. A factor analysis

determined that the correlations were not due to an anxiety factor composed of highly correlated items in the locus of control scale. The interpreted meaning of this factor analysis supported the notion that anxiety scales and locus of control scales are measuring distinct variables which correlate with each other, but the correlation is not due to an anxiety factor within the locus of control scales. A feeling of lack of personal control over reinforcement is associated with anxiety, but which causes which cannot be inferred from these correlational studies.

Houstras and Scarf (1970) investigated the relationship between manifest anxiety and locus of control in 60 low-achieving male freshmen college students. The means for the Taylor Manifest Anxiety Scale were externals, 56.30, internal-externals, 50.05, and internals, 45.15. An analysis of variance indicated a significant difference between the groups ( $F = 6.40$ ,  $df = 59$ ,  $p < .01$ ). Mean test comparisons were made and the only significant difference occurred between the externals and internals (a critical difference "d" of 9.55 was reached) at the  $p < .01$  level.

Shybut (1968) compared I-E responses between a normal group, a moderately disturbed group, and a severely disturbed group. Analysis of variance of I-E scores between the three groups yielded a significant difference ( $F = 7.9$ ,  $df = 119$ ,  $p < .01$ ). A t test comparison indicated the source of variance to be between the severe group and the other two.

The difference in I-E scores between the moderate and normal groups was not significant.

Cromwell, Rosenthal, Shakow, and Zahn (1961) found that schizophrenics responded on four different locus of control scales significantly in the external direction compared to normal subjects ( $t = 3.61$ ,  $t = 2.21$ ,  $t = 3.21$ ,  $t = 2.80$ , all  $p < .01$ ). In addition, schizophrenics preferred externally controlled situations and performed better when the stress of making personal decisions in autonomous situations was not present.

Harrow and Ferrante (1969) found essentially similar results as Cromwell, et al., (1961). Schizophrenics are more external than non-schizophrenics patients in a mental hospital ( $t = 2.51$ ,  $df = 126$ ,  $p < .05$ ). Cromwell, et al., used non-hospital controls in their research. Harrow and Ferrante used psychiatric patients who were non-schizophrenic. Rotter's I-E scale was presented as a pretest and posttest to psychiatric patients during the first week and seventh week of admission. Change scores indicated schizophrenics were different from the rest of the patient population ( $t = 4.14$ ,  $df = 86$ ,  $p < .001$ ) by being more external. The depressed group, however, showed a significant change in the internal direction ( $p < .05$ ). Shybut (1965) found that hospitalized psychiatric patients were more external than normals and that the behavior of delaying gratification was related to internal locus of control more than external.

Wellner (1963) selected 24 hospitalized paranoid patients and 24 depressed patients as subjects and matched them according to age and education. A line matching task and expectancies for success on the matching task (defined by the patients' betting) were utilized for comparison. Reinforcement schedules were 25%, 50%, and 75%. The only significant difference was across conditions. Subjects tended to give credit for success to skill rather than chance as reinforcement increased. Both paranoid and depressed patients blamed chance in the experiment as their failure at tasks increased. The hypothesis that paranoid patients would externalize their failures more than depressed patients was not accepted.

Locus of control has been defined as the extent to which persons expect reinforcement to result from personal behavior in contrast to luck or chance. Internal and external locus of control individuals may be characterized from the findings of the research reviewed. Internal individuals are generally resistant to influence, particularly if the influence is subtle. Ethnic group membership is related to generalized expectancies--Negroes being more external than whites. Internal locus of control individuals tend to show less conforming behavior, more achieving behavior, more utilization of information of personal value, and more effort into obtaining help when threatened than externals. Further, internals are more engaged in civil rights and are



more willing to become involved in civil rights activity than externals. Externality is associated with psychological maladjustments, low self-esteem, neuroticism, suicide proneness, depression, and anxiety. In addition, schizophrenics and hospitalized psychiatric patients typically are more external than internal.

Etiology of locus of control. Rotter (1966) suggested that parents who related to their children in an inconsistent manner, especially in the area of discipline, more than likely produce external expectancies in their children. Rotter also cited an unpublished study that suggested I-E expectancies do not derive from religious beliefs. Since this report is not available for public consideration, the results cannot be evaluated.

Lefcourt (1972) referred to a report by Chance (1965) relating to development of locus of control expectancies. Chance compared children's responses to Crandall's Intellectual Achievement Responsibility Questionnaire with their mothers' responses to the Parent Attitude Research Inventory. Internality in boys related to attitudes of permissiveness and flexibility in maternal attitudes and maternal expectations associated with early independence for their sons. Lefcourt reported that Chance also found a slight trend in the birth order--older siblings being more internal than later born siblings.

Crandall, Katkovsky, and Crandall (1965), however, found that first-born children in lower grades did not differ from later-born children on the I-E scale dimension. In the upper grades, however, first-born children were more internal than later-born children ( $t = 2.15, p < .05$ ). Older children from small families (three or less children) were more internal in their generalized expectancies for reinforcement than younger children (expectancies for positive reinforcement differences  $t = 2.23, p < .01$ ). Crandall, et al., used the Intellectual Achievement Responsibility Questionnaire designed to determine generalized expectancies only for intellectual-academic situations.

Eisenman and Platt (1968) reported the birth order of 75 males and 56 female college students were compared to I-E scores, and firstborn males were significantly more external than later-born subjects. This contradicts findings by Crandall, et al., (1965). No attempts were made to explain the different findings. It is possible that using different instruments for measuring generalized expectancies might have made some difference.

Katkovsky, Crandall and Good (1967) found from observations of parental behavior in the home, parental interviews and questionnaires, and children's responses on the Intellectual Achievement Responsibility Questionnaire, that internal control expectancies are associated with protectiveness, nurturance, approval, and accepting qualities in

parents. The behavioral observations were reported to be the better predictor of expectancies than parental self-report measures.

Davis and Phares (1969) used Rotter's I-E scale results and the Children's Reports of Parental Behavior Inventory results to compare possible family origins of generalized expectancies. Subjects were from psychology classes at a university. The students' parents filled out the Maryland Parent Attitude Survey. Analysis of variance yielded a significant interaction between I-E and parent on indulgence and protectiveness subscales of the MPAS ( $F = 4.38, p < .025$ ;  $F = 3.19, p < .05$ ;  $df = 2/244$ , respectively). Further analysis suggested that fathers who were more indulgent and less protective than mothers have internal children. External children's parents have the opposite characteristics from internal children's parents. Davis and Phares also found that internal students described their parents as more accepting, positively involved with them, less rejecting, and given to little hostile control over them. Externals reported their parents disciplined them in an inconsistent manner. MacDonald (1971) replicated these findings.

Shore (1968) correlated grade school boys' responses on Bialer's I-E scale, Battle-Rotter I-E scale, Children's Report of Parent Behavior Inventory, and parents' responses on Rotter's I-E scale and other parental attitude inventories.

The only significant parental attitude toward child-rearing related to expectancy theory was internality in the father related to internality in the boy ( $r = .21, p < .01$ ). Boys who reported their parents exerting a great deal of psychological control over them, being less warm, and less accepting were more external ( $r = -.22, p < .01$ ;  $r = .43, p < .01$ ;  $r = .46, p < .01$ , respectively). It was found in this investigation that children's perceived parental behavior predicted generalized expectancies in children better than parents' self-reported attitudes.

Epstein and Komorita (1971) found that Negro children who attributed success in a matching task to external causes also perceived their parents as using severe hostile control and being arbitrary in discipline.

Internal individuals tend to come from homes where parents were consistent in discipline, flexible, protective, nurturing, approving, and exerted little psychological control over the children. Internal individuals tend to be first in the birth order and have fathers who are internal.

#### Modifying Locus of Control

In Rotter's SLT, generalized expectancies for reinforcement are perceptions (beliefs) of what controls reinforcement and they develop from (a) expectancy for reinforcement from past experience, plus (b) generalizations from efforts to obtain reinforcement in the past, and (c)

generalizations from the immediate situation. Because one of the factors which develop and maintain beliefs about control expectancies involves present day responses (expectancies) to present day events, such belief is theoretically modifiable. It seems obvious that only a forceful event of personal importance to the individual and sufficiently strong to secure personal involvement would be effective in changing expectancies for reinforcement. Nevertheless, bringing about change in external expectancies has become both the challenge and the goal of some counselors and therapists (Gillis & Jessor, 1970; Singer, 1965).

A considerable number of novel and serendipitous reports have been published with presumed modifications of locus of control expectancies (Gorman, 1968; McArthur, 1970; Brecher & Denmark, 1972). Many of the more serious research attempts to modify external expectancies, however, were limited by weak methodological problems. In spite of shortcomings, some of these attempts contributed to the interest in and development of the literature concerned with modifying locus of control.

Masters (1970) attempted to modify perception of control from an external expectancy to an internal expectancy. Masters presented a single case study of a 17 year old male who felt his life was controlled by powerful others (primarily his parents) who consistently punished him when he ineffectually performed or refused to perform chores

delegated by his parents. Therapy intervention attempted to reinterpret his perception of control. Behaviors were initiated which were designed to transfer perception of control from parents to client. The therapy proposed that client behaviors such as mowing the lawn, washing the car, and helping with the family business be carried out before being ordered to do them by the parents. The purpose of these "good son" behaviors were interpreted to the client to be a method of bringing about personal control of expected reinforcements from his parents. When the subject understood that by means of his own behavior he could effectually control reinforcements from his parents, he readily cooperated with the therapy and initiated these "good son" behaviors and ceased the "rebellious" behaviors. Masters indicated the family relations improved. This single case study method has limited empirical data by which to compare these findings with other findings. It did, probably, serve to suggest directions by which more productive empirical investigations of therapeutic modification of external locus of control could proceed. The techniques initiated by Masters have been influential in subsequent research (Majumder, et al., 1973).

Hughes (1971) attempted to modify locus of control expectancies by controlling the amount of success achieved by subjects on an experimental task. Assuming that perceived internal control stems from the extent of objective

success and generalizations from that success, Hughes divided 77 eighth and ninth graders into groups of 8 boys each. Internals and externals were determined by dividing the I-E pretest scores at the median. The experimental task involved punch boards programmed to provide success feedback on the degree of correctness of the subjects' responses on the board. This feedback constituted the objective success. Experimenter comments about the subjects' performance provided the subjective success. Hughes hypothesized that externals who received much success would modify locus of control expectancies in the internal direction. Internals who experienced a lesser degree of success were predicted to change in the external direction. Externals who received low success and internals who received high success were not predicted to change expectancies. Posttest I-E scores did not significantly change for any of the groups. Hughes attributed the lack of change to insufficient ego involvement and the spacing of experimental sessions over too long a period of time. In fact, Hughes failed to appreciate the effects of generalizations from the immediate situation--the experiment, which also maintained expectancies. Subject responses on a punch board, even though reinforced, probably did not appear sufficiently relevant to the subjects for them to modify beliefs about luck, fate, and responsibility. Perhaps this is what Hughes meant by lack of ego involvement. Hughes' study

appeared to disregard the contingencies which have been theoretically postulated regarding increments and decrements in expectancies of locus of control in Rotter's theory.

Felton and Biggs (1972) attempted to teach college low achievers internal behaviors by means of I-E change techniques in psychotherapy groups. This study was part of a reeducation program designed to prepare low achievers to reenter college successfully. The I-E change techniques used were "orientation to present time," "confrontation," and the "the language of responsibility" (Felton & Biggs, 1972, p. 282). A pre- to posttest comparison yielded significant effects, and no comparisons were made between the control group and the experimental group following treatment. Such methodological procedures bring into question the strength of the findings and necessitate caution in interpreting the results. However, Felton and Biggs reported the I-E means before (10.27) and after treatment (6.61) changed in the direction of internality. Both male and female subjects exhibited this significant change (male 9.40 to 6.53 and female 11.17 to 6.72), but not the control subjects (9.76 to 9.48). A posttest comparison of groups would have strengthened this research design and would have added more confidence to the results.

Felton and Biggs improved the methodology somewhat in a later report (Felton & Biggs, 1973) in which black low achievers were taught internal behavior. The seven males



and eight females were students enrolled in a student development center for a ten-week process-oriented program designed for helping low achievers prepare for college. Felton and Biggs' comparison group was nine black female freshmen at the same college where the development center was located. The experimental group was exposed to forty group psychotherapy sessions plus a weekend encounter experience. I-E change techniques utilized were the same as the previous study. The authors' hypotheses necessitated a pre- to posttest comparison. In their first hypothesis, posttest I-E scores were predicted to significantly change toward internality in the treatment group when compared to pretest scores. In the second hypothesis, I-E scores were not predicted to change significantly from pre- to posttest in the control group. The mean pretest score was 11.80 and the posttest mean was 7.60 for the experimental group ( $t = 3.16, p < .005$ ). The difference between pre- and posttest means for the comparison group, as predicted, was not significant (pretest, 9.44; posttest, 10.11). Felton and Biggs did compare the change scores of the female experimental subjects and the control group subjects (also female). The difference in the change scores (-5.88 and +0.67) was significant in the internal direction ( $t = 3.74, p < .001$ ). The change for men in the experimental group was in the predicted direction, but failed to reach statistical significance when compared to the control group. This research

indicated methodological advantages over the previous study reviewed above. It is relevant for this present study that Felton and Biggs used I-E change techniques in psychotherapy in an effort to change locus of control expectancies.

Gelsomino (1973) applied intervention techniques in a socially disadvantaged population to modify external locus of control expectancies. Three treatment groups and one control group were utilized to determine if internality could be raised with college students over a seven-week period. Subjects (N = 51) were participants in a students-tutoring-students project. The first experimental group received in addition to the tutoring, which all groups received, a type of I-E change technique involving direct expectancy statements designed to raise success expectancies and strengthen the belief that effort pays off. A second group received verbal reinforcement for information-seeking behavior. The third experimental group employed both techniques of the first two groups. The control group received only the tutoring. Group one, employing the direct expectancy statements, proved to be the only group which was sufficiently different from the control group to approach statistical significance ( $p < .06$ ). The techniques Gelsomino employed were not able to modify locus of control expectancies within the seven-week period.

Dua (1970) reported a significant difference between a group of female students who received action program

treatment, a group who received reeducation treatment, and a control group at a university counseling center. Thirty freshmen students were equally divided into three groups. Treatment extended over eight weeks. The I-E mean for the behavior action group was 14.03 for the pretest and 7.10 for the posttest. The cognitive reeducation group pretest mean was 14.10 and posttest mean was 10.20. The control group pretest mean was 13.30 and the posttest mean 12.70. An analysis of variance was significant ( $F = 11.1679$ ,  $df = 2/27$ ,  $p < .01$ ) for differences among the three groups on the criterion measure. T tests indicated the subjects in the behavior action group were more internal on the dependent variable (I-E scores) than subjects in the control group, and the behavior action group subjects were more internal than the reeducation group (between action vs control,  $t = 4.2327$ ,  $p < .01$ ; behavior action vs cognitive reeducation group,  $t = 2.6088$ ,  $p < .05$ ; cognitive reeducation vs control,  $t = 1.5992$ , ns). Subjects in the reeducation group did not significantly differ from subjects in the control group. These significant findings from research, which is methodologically acceptable, have been instrumental in the development of techniques for changing locus of control expectancies.

Felton and Davidson (1973) hypothesized that internalization could be taught to high school low achievers by means of brief group counseling experience focusing on the I-E

change techniques which emphasize present behaviors and responsible verbalizations. Subjects were participants in an experimental learning program, and they met daily for three hours during one semester. The teaching of internally orientated behavior was one aspect of this program. Sixty-one students made up the experimental group and 18 students made up the control group. The control group subjects were taking academic courses similar to the courses taken by the experimental subjects and were also low achievers. Results indicated the change score mean for the experimental group was -3.34 and for the control group +0.61. The difference between the experimental group and control group was significant on the I-E variable ( $t = 5.14, p < .001$ ). These results provided support for the hypothesis that small group counseling using I-E change techniques was effective in modifying locus of control expectancies in an internal direction.

The use of I-E change techniques in a group setting was also examined by Moser (1975). From a population of 283 male prisoners, 24 were matched for age, IQ, and race and randomly assigned to one of three groups--an inactive control group which was not informed of its place in the experiment, an active control group which met for eight two-hour weekly meetings, and a treatment group which met for eight two-hour sessions in a group therapy structured for increasing internality. The treatment focused on overt

behavior and sought to actively discover alternative internally controlled expectancies. Emphasis was on the present life situation. Confrontation was utilized to make subjects aware of external behavior and to identify what responsibility the subject might have assumed to have been less external in his behavior. Alternative internal statements were offered by the therapist following confrontation. Each external statement coming from an experimental subject was analyzed to determine the subject's feelings and the subject's reasons for doing or saying what he had done or said. Following this analysis the subject formulated internal alternatives for future occasions of a similar nature. These I-E change techniques were designed to aid in the subjects' understanding of personal problems. This initial phase was followed by a re-education phase focusing on "indoctrinating the patient's ideational content" and utilizing particularly the techniques of role-playing (Moser, 1975, p. 25). During the treatment the therapist remained active in the therapy, giving feedback and reinforcement for progress and appropriate behaviors. In contrast, the therapist assumed a non-directive posture in the active control group and the treatment consisted of discussions centered around general non-therapeutic topics. Moser reported a significant difference between the three groups ( $F = 30.07$ ,  $df = 2/21$ ,  $p < .001$ ). Moser reported means for the treatment group (pre = 13.75, post = 9.88),

the inactive control group (pre = 13.75, post = 14.38), and active control group (pre = 13.75, post = 14.12). A Tukey HSD yielded a significant difference ( $p < .01$ ) between the treatment group and active control group, and a significant difference ( $p < .01$ ) between the treatment group and the inactive control group. There was no significant difference between the two control groups. All eight of the subjects in the treatment shifted I-E scores in the internal direction. Both control groups became more external.

The group mode of treatment and individual treatment were combined by Majumder, et al., (1973) who compared three groups of disadvantaged youth in a summer project to determine if the I-E counseled group would be different on posttest I-E scores from the non-I-E-counseled group and the non-counseled group. Forty high school subjects, ages 14-16, were randomly assigned to treatment groups and counselors randomly assigned to three groups. The treatment for the I-E counseled group consisted of a composite of approaches and techniques suggested by previously cited research (Dua, 1970; Masters, 1970; Reimanis & Schaefer, 1970). The non-I-E-counseled group received traditional counseling, while the control group participated in discussion sessions. The treatment period was five weeks and consisted of one individual session and two group sessions per week. Analysis of covariance, using pretest I-E scores as the covariate and posttest I-E scores as the dependent variable, was used

to examine the data. There was a significant difference between the groups on the I-E variable ( $F = 3.75$ ,  $df = 1/40$ ,  $p < .05$ ). Appropriate  $t$  tests for analysis of covariance were utilized to determine which of the groups was responsible for the variance. The non-counseled and the non-I-E-counseled groups did not significantly differ ( $t = .11$ ,  $p < .05$ ). There was a significant difference between the I-E counseled and the non-counseled ( $t = 2.5$ ,  $p < .02$ ), and a significant difference between the I-E-counseled and non-I-E-counseled ( $t = 2.4$ ,  $p < .02$ ). The results of this research seemed to clearly suggest that I-E change techniques modified perceptions of locus of control while traditional counseling and no counseling were not effective.

Reimanis (1974) hypothesized that internal control can be increased by application of special counseling designed to deal directly with generalized expectancies. Rotter's I-E scale was given to 697 college freshmen in randomly selected English classes. From the lowest 10% (most external on I-E scores) of the sample, 8 students were selected for the experimental group and 17 for the control group. Treatment for the experimental group was one 45 minute individual I-E counseling session per week over a 10-week period. Counseling techniques used were: (a) confrontations by counselors when external behaviors were verbalized, (b) analysis of the external verbal statements, and (c) the formulation of alternative internal behaviors

for future occasions. Pre- and posttest I-E scores were 5.80 and 13.40, respectively, for the experimental group, and 6.88 and 6.35 for the control group (Reimanis scored the I-E scale in the internal direction). Posttest I-E scores for the experimental group and the control group were compared and found to be significantly different (t test,  $p < .01$ ). These results supported Reimanis' hypothesis that internal locus of control expectancies for freshmen can be significantly increased by individual I-E counseling, when freshmen English students were compared to other freshmen English students not receiving I-E change techniques in counseling.

### Summary

This chapter of the review of related literature has summarized the basic principles and concepts of SLT. From one of these broad concepts, expectancy, there has emerged a related concept, generalized expectancies for locus of control of reinforcements. Rotter's SLT categorizes the perceptions of the locus of control of reinforcement as internal or external.

The second half of this chapter characterized internal locus of control behaviors from the research studies surveyed. Most of the research studies have described the way subjects respond in experimental situations defined as internal (skill) conditions or external (chance) conditions.



Other research utilized subjects classified as internal or external by I-E scales in order to determine how they were different in behavior on ambiguous tasks. From the research reviewed, it was possible to characterize the internal person as more competent in his endeavors to obtain reinforcement. The internal person believes that reinforcement comes from his own effort and attributes success at obtaining reinforcements to his own skill. Because of this, the internal person resists efforts from others to manipulate him. Generally, internal expectancies are associated with upper social and more privileged ethnic groups in this country. The internal person's coping behavior, which is of special concern to counselors, tends to follow the pattern of those in this society who are most productive and successful in attaining personal goals. The internal locus of control person's psychological adjustment is characteristic of groups broadly labelled as the most "healthy" and adaptive. The internal person's family background contains the most wholesome interpersonal relations. In short, the internal locus of control person in the western world represents the preferred approach in dealing with the world, and the internal person is frequently rewarded by society for his methods of achieving personal goals. It naturally follows, therefore, that various helping professions have become interested in methods of increasing internal locus of control expectancies, which inevitably involves changing

external expectancies. That man is capable of such change is one of the fundamental principles which motivates the counseling and therapeutic professions (Singer, 1975; Gillis & Jessor, 1970).

The final section of this chapter reviewed related literature dealing with the modification of locus of control. Several studies were reviewed which employed high school students, college students, and male prisoners as population samples. Two of these studies used counselees at university counseling centers for subjects, two studies used high school low achievers as subjects, and one study used college low achievers as subjects. One study employed college freshmen English students. In the studies which used university counseling center counselees, one selected only counselees whose problems involved interpersonal relations. Another study attempted to change locus of control expectancies in the first session to facilitate the therapy which followed. Six of the studies reviewed used the group method of treatment with which the I-E change techniques were combined, and three studies used individual counseling with which to combine the I-E change techniques. In one of these studies which used individual therapy only one subject was used, and in another which used individual therapy, I-E change techniques were utilized in one part (twenty minutes) of one session. These studies represent the development of I-E change techniques thus far. None of the

studies reviewed utilized more than two or three of the techniques, and several studies used only one. Even in the single technique studies, effective change of locus of control expectancies was sometimes reported. Some researchers suggested the effectiveness of the I-E change techniques needed to be further demonstrated with additional research, and the techniques needed synthesizing to possibly increase their effectiveness. This study will attempt to carry out both of these suggestions in a limited way.

## CHAPTER III

### METHOD

#### Subjects

Twenty-four students who came for counseling to the Counseling and Testing Center at the University of North Carolina at Greensboro were subjects in this study. The ages ranged from 18 to 28 years and included freshmen through graduate students (22 undergraduates and 2 graduate students). Five of the subjects were male, and 19 were female. Two subjects were black and 22 were white. No other ethnic groups were represented. No subjects were used who had received counseling at the counseling center in the previous ten months.

#### Variables

There were two independent variables in the study. The first independent variable, counselor, was manipulated by utilizing two counselors in the administration of both levels of the independent variable counseling. The primary reason for including the counselor variable was to control for and to assess the variance which might affect the dependent variable due to individual counselor rather than counseling techniques. Experimenters in research studies are known to have differential effects on dependent variables, and

there-by confound the effect of the treatment (McGrigan, 1971; Rosenthal, 1971; Jung, 1971; Rogers, 1958). This research design permitted assessment of the generalizability of the treatment effect across two counselors.

The second independent variable, counseling was the primary interest of the study. The two levels of the counseling variable which were manipulated were (a) traditional counseling, level one, and (b) I-E change techniques, level two. The control groups (one for counselor I, and one for counselor II) received level one of this independent variable. The experimental groups received level two of this independent variable.

Rotter and his co-workers have not developed a counseling or therapeutic procedure designed to modify locus of control expectancies. A number of I-E change techniques have been developed which have been used with varying success. These techniques have not been brought together, and no attempt has been made to integrate or synthesize them into a counseling approach or theory known as I-E counseling. Unless such a synthesis occurs it is likely these embryonic I-E change techniques will eventually develop into something of the stature of Wolpe's (1958) reciprocal inhibition. Even now, however, they have begun to fill a void in Rotter's SLT by successfully lowering external expectancies in a few studies.

The treatment for the control groups (level one of the independent variable counseling) was specified by the following counseling approaches, techniques, and omissions.

Counseling Variable (level one)

1. Counselors will concentrate on building a relationship (rapport) with counselees (Shertzer & Stone, 1968) which will be facilitated by communicating:
  - (a) Acceptance of the counselee (Rogers, 1958; Shertzer & Stone, 1968),
  - (b) Understanding of the counselee (Shertzer & Stone, 1968),
  - (c) Attentiveness to the counselee (Shertzer & Stone, 1968),
  - (d) Non-possessive warmth (Rogers, 1958; Truax & Carkhuff, 1967; Shertzer & Stone, 1968),
  - (e) Empathy (Rogers, 1958; Truax & Carkhuff, 1967; Shertzer & Stone, 1968),
  - (f) Genuineness (Rogers, 1958; Truax & Carkhuff, 1967; Shertzer & Stone, 1968),
  - (g) Support (Shertzer & Stone, 1968).
2. Counselors will utilize the following structuring and lead techniques (Shertzer & Stone, 1968):
  - (a) Silence (as "receiving" not rejecting behavior),
  - (b) Reflection of feelings,

- (c) Direct questions (for clarification and history taking),
- (d) Summarizing,
- (e) Information giving (when requested by the counselee),
- (f) Encouragement.

3. Counselors will omit:

- (a) Confrontation of external locus of control behavior such as blaming others,
- (b) Reinforcement of internal locus of control behavior,
- (c) Mentioning contingencies between behavior and its consequences,
- (d) Underscoring of counselee's responsibility to do anything,
- (e) Pointing out the unreasonableness of external behavior,
- (f) Modeling alternative internal behaviors to replace external behaviors.
- (g) Postulating that many reinforcing situations are in the counselee's power to control,
- (h) Pointing out the distinction between real control in external world and generalized belief in internal-external control of reinforcement.

The following outline was an attempt to synthesize existing I-E change techniques into a counseling sequence for the present research study. The synthesis represented an effort to operationally define the second level of the counseling variable which utilized I-E change techniques. These techniques have been arranged in parallel order with a counseling sequence to suggest the points in the counseling stages where the I-E change techniques were relevant.

### Counseling Variable (level two)

#### I-E Change Techniques

#### Counseling Stages

#### I-E Change Techniques

Introductions

Statements of the Presenting Problem

Establishing the Relationship

- (a) By providing the proper emotional climate for counseling
- (b) By structuring interviews to give minimal guidance to counselee
- (c) By dealing with any misconceptions about counseling
- (d) By dealing with inadequate motivation for counseling
- (e) By preparing counselee for the next phase of counseling

(adapted from Wolberg, 1954, p.198).



## Information - Exploration - Explanation

(Reimanis, 1974)

Counselor listens to counselee's spontaneous account of problem background and life situation. Counselor focuses on selected data to encourage full exploration of problem situation.

1. Point out (and discuss the contingencies of the subject's behavior (in past, present, future), MacDonald, et al., 1972.

(a) Subject responses and reinforcement are not independent (Moser, 1975).

(b) Subject controls many reinforcing situations (Moser, 1975).

Purpose: To give theoretical reason for setting counseling goals in terms of internal responses. To cognitively assist in

establishing the belief  
in internal locus of  
control.

## Specification of Counseling Goals

2. Define problems in behavioral terms (Dua, 1970)
  - (a) What behaviors did subject emit or omit which caused or contributed to the problem?
  - (b) What behaviors did others emit or omit which contributed to the problem?

Purpose: Enables subjects to realize how the problem developed in terms of I-E theory.

3. Determine behaviors to correct problems (goals) (Krumboltz & Thorensen, 1969)
  - (a) What specifically is subject to do or not

to do?

(b) What is the appropriate response for subject to other's responses or lack of responses?

Purpose: Provides concrete behavioral goals. Provides potential behavior which subject can reinforce himself (self-management).

Establishes internal locus of control approach to problem resolution.

## Relearning and Reinforcement

4. Confronting external subject responses (Reimanis, 1974; Moser, 1975)
  - (a) Explain the externality of the response according to I-E theory.
  - (b) Explore unreasonableness of external responses

(irresponsibility)

Moser, 1975.

Purpose: Teaches subject to discriminate I-E behavior. Establishes discriminative stimuli (cues).

5. Replace external responses with internal responses (Reimanis, 1974; Moser, 1975).

- (a) Counselor models appropriate behavior (internal response)  
Moser, 1975.

- (b) Subject formulates alternative internal responses.

- (c) Behavioral rehearsal (Moser, 1975).

Purpose: Enables learning (a change in behavior) of internal response making reinforcement from counselor possible.

6. Positive reinforcement for internal responses (Reimanis & Schaefer, 1970; MacDonald, 1972; MacDonald, et al., 1972).

Purpose: Increases the probability that internal response will reoccur.

7. Analyze and redefine real external control stimuli (Dua, 1970).

(a) Demand for subject to emit behavior  $\underline{x}$  → no subject response → punishment from real external control.

(b) Instructions to subject to emit behavior  $\underline{x}$  → subject responds → no punishment.

(c) Subject emits behavior before instructions or reminders → positive reinforcement.

Purpose: Enables subject to control reinforcements

which is internal locus of control behavior, and to be "responsible."

### Termination of Counseling

Counselors in this research study were trained for level two of the independent variable, counseling, largely from materials assembled by the Research and Training Center, Institute, West Virginia (Greever, et al., no date) which were designed to train rehabilitation counselors to incorporate the concepts of I-E locus of control and the I-E change techniques of Reimanis and Schaefer (1970), Masters (1970), and Dua (1970) into their counseling approaches. These training materials make up the teaching manual for counselor trainees at the Research and Training Center in West Virginia. Numerous practise exercises are included in the manual to facilitate mastery of the material. One exercise, consisting of twelve client statements, is classified by counselor trainees as internal, external, or neutral. Space is provided for two counselor responses for each client statement. In the appendix of the manual answers are given for the type of client response (internal, external, or neutral), together with four or five examples of appropriate counselor responses and four or five inappropriate responses (Greever, et al., no date, pp. 23-25, 70-74). This exercise in the rehabilitation manual served

as an oral test at the end of the counselor training period in the present research study to determine the degree to which the counselors had learned the I-E techniques used in level two of the independent variable, counseling (see Appendix B). The two counselor responses to each of the twelve items were scored 2 points each for a response or equivalent listed in the manual as "appropriate," 1 point for an acceptable response but less appropriate than the preferred response, and 0 for an "inappropriate" response or equivalent. The total number of points possible was 84, and a score of 68 (80%) was established to indicate competency to incorporate I-E change techniques into an individual counseling approach. Training procedures for the counselors included 6 one-hour training sessions, studying, discussing, and analyzing the two levels of the counseling variable as defined in this chapter. Copies of the most relevant research articles were made available to the counselors together with a copy of the training manual of the Research and Training Center (Greever, et al., no date). The training of the counselors concluded with the administration of the oral test described in this section. Both counselors used in this study were eclectic in orientation (Shertzer & Stone, 1968). One of the counselors has a Ph. D. in counseling psychology, and the other counselor is a doctoral candidate in counseling. One counselor was male and the other was female.

## Instruments

Rotter's I-E scale (1966) was employed to measure the locus of control expectancies, the criterion measure, and to obtain pretest scores for determining comparability of the treatment groups. There are several scales available for measuring locus of control expectancies, but Rotter's scale is more frequently used and is considered by some to be the best to use with adult populations (Throop & MacDonald, 1971).

Rotter's I-E scale is composed of 23 items, plus 6 filler items, making a total of 29 items (Rotter, 1966). Each item is composed of two paired statements, one reflecting an internal orientation and the other reflecting an external perception. The scale is scored in most research studies in the external direction so that higher scores indicate greater externality. In this study the scale was scored in the external direction.

Rotter (1966) reported internal consistency correlations ranging between .65 and .76, and test-retest reliability correlations for one month of .60 to .83. Comparisons with other measures in predominantly college populations indicated the Marlowe-Crown Social Desirability Scale correlated with the I-E scale from -.12 to -.41, and intellectual measures from .01 to -.22 (Rotter, 1966). The scale is frequently used to classify subjects into dichotomous categories, internal and external locus of control. The



largest populations reported for comparison purposes were 1180 elementary psychology students at Ohio State University which obtained a mean of 8.29 and the National Stratified Sample, Purdue opinion poll of high school students, which obtained a mean of 8.50 for males and females combined (N = 1000). Numerous studies were cited which corroborate the construct validity of the I-E scale. Rotter summarized: "The studies reported here represent an unusually consistent set of findings" (Rotter, 1966, p. 24).

Mirels (1970) derived two subscales from Rotter's I-E scale by means of factor analysis. Factor I consisted of nine scale items (5, 10, 11, 15, 16, 18, 23, 25, 28), and factor II consisted of items numbered 12, 17, 22, 29. These subdomains were called Personal Control (PC) subscale, factor I, and Sociopolitical subscale, factor II (O'Leary, Donovan, Hague, and Shea, 1975). In the PC subscale Mirels found the source of the influence to be the respondent and the target of the control, the individual person. In the Sociopolitical subscale (SC) the source of the influence was found to be the citizens (people) and the target of the control, the social system. Mirels (1970), O'Leary, et al., (1975), and Abramowitz (1973) all suggested that research which used the I-E scale as the dependent variable would limit the predictive validity of the scale and obscure meaningful findings if the full I-E scale alone were used.

In light of this recommendation, the present study utilized the PC subscale along with the full I-E scale.

### Procedure

Information was obtained from the subjects by the secretaries at the counseling center when the subjects came by or phoned for appointments. This information was used to determine age, class, sex, race, and if the student would participate in this study. The counselees were asked by the secretaries if he/she wished to see someone for vocational counseling or for personal counseling. Only those who sought personal counseling participated in this study, since vocational counselees would have constituted another sample of the counselee population. The counselees were randomly assigned to the experimental and the control groups. The counselors were then randomly assigned to the groups. The subjects were seen for 8 one-hour sessions by each counselor.

To insure that the treatment was administered as prescribed, two judges independently rated coded segments of taped interviews from all four groups of subjects (Truax & Carkhuff, 1967). The judges were both unfamiliar with I-E theory. One judge has a Ph. D. in clinical psychology, and the other judge has a M. Ed. in guidance and counseling. Rate-rerate and inter-rater reliabilites of .50 were set as minimum levels of training for the judges as reported and practiced by Truax and Carkhuff (1967, p. 85). Two

three-minute segments of tape-recorded interviews were randomly obtained from the middle one-third and final one-third of the counseling sessions. These three-minute taped segments were typed on separate 4 x 6 cards. The 48 typed segments (24 from the control group and 24 from the experimental group) were coded to identify the subject and the group from which the segment was taken. The two judges independently examined the 48 cards which contained only counselor responses (no subject responses were typed on the cards). Instructions to the judges directed them to place each card which contained an I-E change technique in one stack and each card which contained a traditional counseling technique in another stack. If a card was judged to have contained both an I-E change technique and a traditional counseling technique the card was placed in a third pile and counted as having both techniques in the subsequent analysis. This procedure was based on methods prevalent in counseling research (Truax & Carkhuff, 1967, p. 85; Truax & Mitchell, 1968, p. 319). By comparing the results it was possible to determine if the treatments were applied in the groups as specified.

### Design and Analysis

An experimental design was used in this study and can be schematically represented by an expansion of the Pretest-Posttest Control Group Design (Campbell & Stanley, 1963).

The design of Campbell and Stanley was modified to accommodate two levels each of two independent variables.

CR I	R	0		0	(Traditional Counseling)
	R	0	X	0	(I-E Change Techniques)
CR II	R	0		0	(Traditional Counseling)
	R	0	X	0	(I-E Change Techniques)

The design utilized four groups. The first group was a control group in which the treatment consisted of traditional counseling administered by CR I (counselor I). The second group was an experimental group in which the treatment consisted of I-E change techniques utilized by CR I. The third group was a control group which had traditional counseling as the treatment administered by CR II. The fourth group was an experimental group in which CR II used I-E change techniques as the treatment. A factorial analysis of covariance was used to analyze the I-E scale data. Chapter IV will present the results of the study.

## CHAPTER IV

### RESULTS

This chapter will be divided into four sections. The first section will discuss the subjects used in the study. The reliability of observation and information provided by the judges will be discussed in section two. Section three makes up the main portion of the chapter and will contain the report of the findings from the study. The chapter will conclude with a summary.

#### Subjects

Forty counselees were randomly assigned to four groups. Five of the subjects were referred to psychiatrists and removed from the study. Seven subjects terminated the counseling by failing to return for appointments. Dropping out of school accounted for the attrition of two subjects. Twenty-six subjects were left. In order to have equal numbers of subjects in each group, two were dropped by randomly selecting one subject from each of the two groups with seven subjects. The following data were available for twenty-four subjects.

Ages of the subjects ranged from 18 to 28. Males made up 20% of the subjects in the study which is slightly less than the percentage of males on the university campus. All

five males were in the experimental group--two in CR I's group and three in CR II's group. Subjects were placed in the experimental group and the control group by random assignment without regard to sex. Since all 5 of the males were randomly assigned to the experimental group, a Mann-Whitney U-Test was used to determine if males in the experimental group were significantly different from females in this research. The obtained U statistic was 19, and correcting for ties the obtained  $z$  was .247 which failed to reach significance at the .05 level. It was concluded that males and females were not different in locus of control expectancies at the beginning of the study.

### Reliability

In order to determine that treatments were administered as proposed, two judges were employed. Both judges were trained to identify the techniques used in both levels of the counseling variable as specified in Chapter III. Reliability was defined as the percent of agreement between the two judges. Percent of agreement was determined by dividing the number of agreements by the sum of the disagreements and the number of agreements. A reliability of .50 was established as the minimum level of training for the judges in keeping with established procedures (Truax & Carkhuff, 1967; Truax & Mitchell, 1971). The first judge achieved a rate-rerate reliability of .60, and the second judge a rate-rerate

reliability of .75. The between-rater reliability was .74. These reliabilities were considered adequate for purposes of this study.

In order to determine that treatments were employed in the groups according to instructions, 12 three-minute audio taped segments were obtained from each of the 4 groups. These recorded segments were transcribed on 48 cards which contained only counselor statements. Independently the judges determined the cards which contained traditional counseling techniques and the cards which contained I-E change techniques. These results were then averaged for the two judges. From this procedure it was concluded that the traditional counseling was used in the control group in 84% of the taped segments. The I-E change techniques were judged to have been present in the experimental group in 73% of the taped segments. For purposes of this study, the treatments were judged to have been administered as proposed.

#### Report of the Findings

Table 1 gives the I-E pretest means, standard deviations, and ranges for all treatment groups, and Table 2 gives the pretest means, standard deviations, and ranges for the PC subscale. It can be observed from Table 1 that the I-E scale mean for the control group (traditional counseling) was higher and, therefore, more external than the experimental group (I-E change techniques). This observed difference

raised the question of whether the groups were from the same population.

Table 1  
I-E Scale Pretest Means, S. D.s, and Ranges

	Mean	S. D.	Range
Traditional Counseling			
CR I	12.83	4.91	8-22
CR II	12.34	2.66	10-16
Total for Traditional	12.59		
I-E Change Techniques			
CR I	8.34	2.66	5-13
CR II	8.17	4.36	4-15
Total for I-E	8.26		

Table 2  
PC Subscale Pretest Means, S. D.s, and Ranges

	Mean	S. D.	Range
Traditional Counseling			
CR I	4.83	2.71	2-9
CR II	4.17	2.32	1-7
Total Traditional	4.50		
I-E Change Techniques			
CR I	2.34	1.51	0-4
CR II	2.67	2.66	0-7
Total for I-E	2.51		



Since each of the groups contained the same number of subjects ( $n = 6$ ), Hartley's  $F_{\max}$  test (Winer, 1962) was used to test for homogeneity of variance. The obtained  $F_{\max}$  statistic was 3.42, and the tabled value for 4/5 (4 variances considered and 5 degrees of freedom) was 13.7 for the .05 level of significance. Since the observed  $F_{\max}$  was not greater than the tabled value, it was concluded that the variances were homogeneous.

One way analyses of variance were performed on the pretest scores for both the I-E scale and the PC subscale to determine if the pretest means were equal. Pretest means for the I-E scale were significantly different ( $F = 8.63, 1/22$ ) at the .05 level. It was concluded that the means were not equal for the pretest I-E scores. Results from the one way analysis of variance for the pretest PC scores ( $F = 3.77, 1/22$ ) indicated the means for the PC subscale were not significantly different. It was not readily apparent why the means for the I-E scale were different, but the means for the PC subscale were not different. However, as a result of these findings, it was determined that an analysis of covariance should be used to analyze the posttest data obtained from the I-E scale with the pretest I-E scores serving as the covariate. In order to test the additional assumption required for the analysis of covariance, that regressions are homogeneous, the procedure found in Winer (1962) was employed. The hypothesis of homogeneity within

class regression was tested with  $F = .0039$ . It was concluded that the data for the I-E scale (pretest) did not contradict the hypothesis of homogeneity of within-class regression, and consequently, the additional assumption which underlies covariance analysis had been met.

A factorial analysis of variance was employed to analyze the posttest PC subscale data since the pretest means for the PC subscale were not different.

The posttest data for the criterion measures (I-E scale and PC subscale) are shown in Table 3 and Table 4. Raw scores for the I-E scale and the PC subscale for both pre- and posttest administrations can be found in Appendix C.

Table 3  
Posttest Means, S. D.s, and Ranges  
of the I-E Scale

	Mean	S. D.	Range
Traditional Counseling			
CR I	12.83	4.54	9-21
CR II	11.83	2.64	9-16
Total Traditional	12.33		
I-E Change Techniques			
CR I	7.00	4.69	1-14
CR II	4.50	2.07	1-7
Total for I-E	5.75		

Table 4  
 Posttest Means, S. D.s, and Ranges  
 of the PC Subscale

	Mean	S. D.	Range
Traditional Counseling			
CR I	4.30	2.74	1-9
CR II	4.34	2.42	0-7
Total Traditional	4.42		
I-E Counseling techniques			
CR I	2.83	2.56	0-6
CR II	1.50	1.52	0-4
Total for I-E	2.17		

Hypothesis one was tested by the analysis of covariance using the I-E scale (factorial analysis of variance using the PC subscale) scores, and the results are summarized in Table 5 (Table 7 for the PC subscale scores).

Hypothesis one: University student counselees whose counseling includes I-E change techniques will be more internal in locus of control expectancies following counseling than counselees whose counseling does not include I-E change techniques.

Hypothesis one was tested by the main effects for counseling in the analysis of covariance table (Table 5) and the factorial analysis of variance table (Table 7). The obtained F statistic for main effect of counseling, 7.93

for the I-E scores, was significant at the .05 level (PC main effect for counseling was 5.56 and significant at the .05 level). Based on the results obtained from the posttest

Table 5  
Summary: 2 X 2 Factorial Analysis of Covariance  
I-E Scale

	df	S.S.	M.S.	F
Counselor (A)	1	14	14	2.1
Counseling (B)	1	53	53	7.93*
Counselor X Counseling (A X B)	1	3	3	.45
Error	19	127	6.68	

\*p < .05

I-E scores and PC scores, hypothesis one was supported; use of I-E change techniques made a significant difference in locus of control scores. Hypothesis one stated that the group receiving I-E change techniques in the counseling treatment would be more internal than the group receiving traditional counseling techniques. The Rotter scale was scored in the external direction which means that lower scores indicated more internal expectancies than higher scores. The direction of the difference between the counseling groups on the I-E scores may be observed from the

means in Table 6 (PC means in Table 4), and it may be seen graphically in Figure 1 (PC in Figure 2).

Table 6

Adjusted Means for I-E Scores: For Levels of Counseling

	Trad Cg	I-E Chge	Mean
Covariate Means	12.58	8.25	10.42
Criterion Means	12.33	5.75	9.04
Adjusted Means	10.8	7.29	9.04

Adjusted Means for I-E Scores: For Levels of Counselor

	CR I	CR II	Mean
Covariate Means	10.58	10.25	10.42
Criterion Means	9.92	8.17	9.05
Adjusted Means	9.8	8.3	9.05

The values for the I-E adjusted means resulting from the analysis of covariance can be seen in Table 6 (means for factorial analysis of variance of PC scores in Table 4). The adjusted mean for the group receiving traditional counseling was 10.8 (PC mean was 4.42), and the mean for the group receiving I-E change techniques was 7.29 (PC mean was 2.17) which is significantly more internal than the traditional counseling group. Consequently, it was concluded

that levels of the counseling variable were significantly different following treatment; that is, the groups receiving I-E change techniques were more internal than groups receiving traditional counseling.

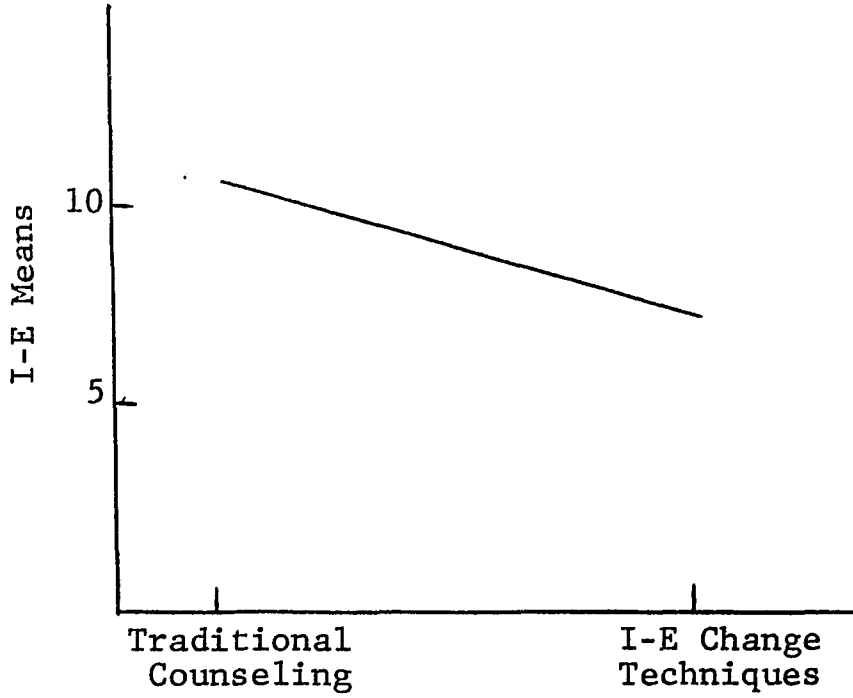


Figure 1. Adjusted I-E Means for the Counseling Variable

Hypothesis two: The effect of counseling on locus of control expectancies for university student counselees will not vary with different counselors. This hypothesis was tested by the interaction of counselor (A) and counseling (B), and the results can be seen in Tables 5 and 7.

Hypothesis two predicted there would be no significant difference between the effects of counseling technique on the criterion measures regardless of the level of the counselor variable. The nonsignificant interaction effect supported hypothesis two. The effect of counseling technique (B) was apparent regardless of which counselor employed the technique. The use of I-E change techniques lowered locus of control expectancies when used by both counselors. The effect which counselors are known to have on dependent variables (Jung, 1971) was apparently controlled for in this study.

Table 7

Summary: 2 X 2 Factorial Analysis of Variance

PC Subscale

Source	df	S.S	M.S.	F
Counselor (A)	1	3.38	3.38	.62
Counseling (B)	1	30.38	30.38	5.56*
Counselor X Counseling (A X B)	1	2.04	2.04	.37
Error	20	109.17	5.46	
Total	23			

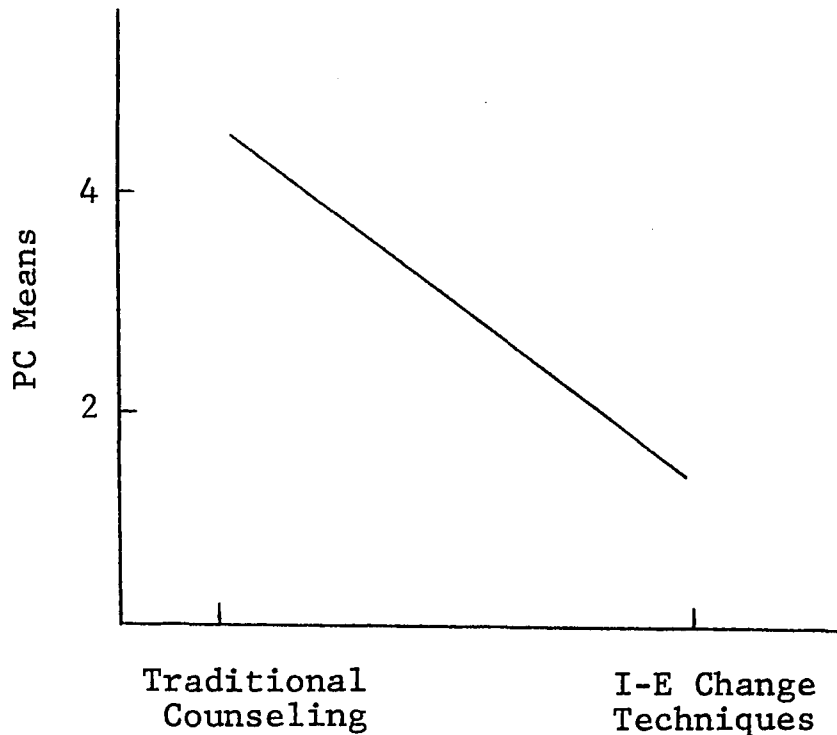


Figure 2. PC Means for the Counseling Variable

### Summary

Twenty-four subjects were randomly assigned to four treatment groups. Each group had six subjects. The ages of the subjects ranged from 18 to 28. There were 5 males and 19 females.

Two judges were trained to distinguish traditional counseling techniques (control group) from I-E change techniques (experimental group) and reached reliabilities of .60 and .75 for rate-rerate and .74 for between rater reliability. The judges determined from taped segments taken from all four groups that the I-E change techniques



were used in 73% of the tapes from the experimental group and traditional counseling in 84% of the tapes from the control groups. It was concluded that the treatments were administered as planned.

The results of the analysis of the data indicated that hypothesis one was supported. Counseling, one of the independent variables, produced a significant difference between the two levels--traditional counseling and I-E change techniques--on the dependent measures. At the conclusion of the experiment the group which received I-E change techniques was more internal ( $p < .05$ ) than the group which received traditional counseling techniques. Hypothesis two was supported. The interaction between counselor (A) and counseling (B) did not produce a statistically significant difference. The effect of using the I-E change techniques was significant regardless of which counselor used them.

CHAPTER V  
SUMMARY AND CONCLUSIONS

Summary

Rotter's SLT has developed the construct of expectancy for locus of control of reinforcements which is one of its more important contributions. Most of the research has dealt with this construct as an independent variable, and very little research has focused on locus of control as a dependent variable. Rotter and his colleagues have not developed a therapeutic approach for modifying locus of control expectancies. In a sense, therefore, a problem has been isolated, but little effort has been made, to date, to solve the problem. It is clear from the research reviewed in Chapter III that a person who has an external locus of control is handicapped in reaching the goals which are important in life. Some efforts by researchers have been made to develop or adopt specific techniques designed to change external locus of control expectancies to internal expectancies. These efforts to develop I-E change techniques have for the most part developed independently. Results from using the techniques separately or with two or three in combination have been favorable. Synthesizing the existing techniques into a single treatment has not been accomplished to date. The purpose of this study was to determine if

combining the change techniques and using them in concert would have significant effects upon locus of control expectancies when compared to other counseling techniques.

None of the research studies reviewed had attempted to modify locus of control expectancies using university students in individual counseling sessions. The present study used 24 subjects randomly assigned to 4 groups. Ages of the subjects ranged from 18 to 28, and the subjects were predominantly white, female, and middle class.

The two counselors were trained in the use of traditional counseling techniques (control group) and I-E change techniques (experimental group). The counseling consisted of 8 weekly one-hour individual counseling sessions. Pretest I-E scores indicated the group means were not equal for the control group and the experimental group; therefore, posttest I-E scores were analyzed by a factorial analysis of covariance using pretest I-E scores as the covariate. PC pretest scores were not significantly different, and subsequent analyses utilized a factorial analysis of variance.

The independent variable counseling (B) was significant at the .05 level for both the I-E scale and the PC subscale. I-E change techniques apparently modified locus of control expectancies in the internal direction when measured by the full I-E scale and the PC subscale. The interaction of counselor (A) and counseling (B), used for experimental control, was not statistically significant for

either the I-E scale or the PC subscale, indicating that any treatment effect on the posttest measures was not specific to the levels of the counselor variable. It was concluded, therefore, that both research hypotheses were supported.

### Discussion

The hypothesis that I-E change techniques would lower locus of control expectancies was supported by this study. The criterion measures used to determine change in locus of control expectancies were Rotter's I-E scale (Rotter, 1966) and the PC subscale of the I-E scale. The research of Mirels (1970), O'Leary, et al., (1975), and Abramowitz (1973) suggested that use of the PC subscale in studies employing locus of control as the dependent variable would show more sensitivity to differences or changes in locus of control expectancies than use of the I-E scale alone would show. However, the findings of the present study indicated the I-E scale was as sensitive to the effects of the independent variables as the PC subscale. Both the I-E scale and the PC subscale posttest scores were significant at the .05 level for the independent variable, counseling (B). Replication of this study or additional research, aimed specifically at determining whether the PC subscale is more sensitive to changes produced by I-E change techniques than the I-E scale, will be necessary to empirically establish

the benefits of using the PC subscale when I-E change techniques are employed as the treatment.

An unexpected distribution of subjects resulted from randomly assigning them to the four treatment groups. From Table 1 it can be observed that the control group mean was 12.59 on pretest I-E scores which indicated the control group was high in external locus of control expectancies. The experimental group obtained a pretest I-E mean of 8.26 which compared closely with Rotter's (1966) reported means for college undergraduate students (8.29 at Ohio, N = 1180). Since the control group received no treatment to lower external expectancies and since externality is associated with psychological maladjustment (Chapter II), clinical preference would have placed the more external subjects in the experimental group and the subjects who were average in locus of control expectancies in the control group. Rearranging the subjects in such a fashion, however, would have jeopardized the research design and could not be done. This study, therefore, was one example in which random assignment did not produce equal groups. In addition, a problem was created which illustrates the tension which sometimes arises between clinical procedures and research requirements (Jung, 1971). One possible way to remedy such a problem would be to restrict the sample to subjects who score at least one standard deviation above the mean (high externals) on the I-E scale pretest scores. Another way to deal with

this problem might be to assign subjects with high external scores to the experimental group and assign subjects with low external scores to the control group. Of course, the groups then could not be compared directly on the posttest scores without using covariance analysis to equate them. Such use of covariance analysis in place of randomization is not a recommended procedure (Kerlinger, 1964; Campbell & Stanley, 1963). The problem of resolving the preferences in clinical practice and the requirements of research which was encountered in this study (and constitutes a problem in counseling research) remains a difficult one.

Rotter (1966) speculated that extreme scores on either end of the I-E scale might indicate maladjustment. However, research has not established that high internality (low I-E scores) is necessarily related to problems in adjustment. In the present study, two subjects in the experimental group obtained posttest scores of 1 on the I-E scale. The range of scores possible on the I-E scale is 0-23, with a score of 1 indicating extreme internality. According to Rotter's statement, such a score might suggest maladjustment. Clinical observations were obtained from the two counselors at the conclusion of the study regarding the maladjustment of the two subjects with scores of 1 on the posttest I-E scores. One of the subjects was described as maladjusted (using the criteria reported in Chapter II), but not the other subject. Consequently, no conclusions

can be drawn from this study regarding the relation of extreme internal locus of control scores to maladjustment.

Results of the present study were consistent with the findings reported by Dua (1970), Felton and Biggs (1973), Felton and Davidson (1973), Majumder, et al., (1973), Reimanis (1974), and Moser (1975) which indicated certain techniques in counseling can be effective in lowering external locus of control expectancies. However, a weakness of the previous research which was reviewed in Chapter II involved using pre- to posttest statistical comparisons. A strength of the present study was the direct statistical comparison of the experimental and control groups following treatment (Campbell & Stanley, 1963; Kerlinger, 1964). Therefore, the present research should contribute to the body of knowledge about I-E change techniques by supporting previous findings but with improved methodology which adds strength to the conclusions.

Felton and Biggs (1973) reported effective changes in locus of control expectancies from I-E change techniques for females but not for males. Observations of individual I-E pre- and posttest scores in the present study indicated that males ( $n = 5$ ) modified expectancies in the internal direction the same as females did. One male, however, did not become more internal on posttest scores. Since all 5 males in this study were in the experimental group, no comparisons could be made statistically between males in

control versus males in the experimental group. Further research will be necessary to establish that males can change locus of control expectancies from use of I-E change techniques to the degree that females can.

I-E change techniques were effective in lowering locus of control expectancies with students at a university counseling center who sought counseling for personal problems. The same techniques could also be effectively used with students who seek help with vocational problems. One important source of reinforcement for many people is their vocation or career. Logically, if a student has not decided on a vocation, an important source of expectancy for reinforcement is missing. Theoretically, external locus of control students would not put forth much effort to determine for themselves which job or career promises the most in the way of positive reinforcement. External locus of control students would depend upon such things as luck, chance, or perhaps knowing the right person in pursuing a career. An internal locus of control person, in contrast, would seek out the facts concerning jobs, careers, working relations, benefits, and put forth more personal effort to select the most meaningful career for himself. It would seem obvious, therefore, that if locus of control expectancies were more internal, vocational counseling could be more helpful and more effective. Some problems, however, can be anticipated in using I-E change techniques within the context of



vocational counseling. The length of time I-E change techniques were used in the present study (8 one-hour sessions) may be the minimum amount of time for I-E change techniques to be effective in changing locus of control expectancies. Vocational counseling usually involves only 2 to 5 one-hour sessions (at least at the counseling center where this study was carried out). The utilization of I-E change techniques prior to vocational counseling, or integrated with vocational counseling, would greatly increase the total time required for the vocational counseling. There is some doubt that vocational counselees would accept the additional time required or the inclusion of I-E change techniques in the vocational counseling process. In career planning seminars or vocational counseling groups, the I-E change techniques might be employed prior to individual vocational sessions with more acceptance by the counselees.

Rehabilitation counselors and school counselors have pioneered in the development and use of I-E change techniques (Chapter II) primarily in the group mode of treatment. Public offender counselors working in penal institutions and treatment centers might also profitably use I-E change techniques to help clients achieve and maintain a more productive and responsible life. The emphasis which I-E change techniques place upon personal responsibility in obtaining desired reinforcement would appear to be relevant for such populations.

An implication of this study and the theory of locus of control suggest that counseling may be most relevant when it contributes to the ability of persons to successfully cope with problems and attain worthy personal goals. Externally oriented individuals find this difficult to do. MacDonald stated: "It is often truly said that one cannot change or correct his problems if he refuses to try. Externals do not try" (p. 45). The present study contributed in a small way to the theory and the research which indicate external expectancies can be changed.

Existing I-E change techniques were synthesized and incorporated into the process of counseling for use in this study. The effect of these I-E change techniques in changing locus of control expectancies was significant. Therefore, no recommendations seem necessary for major changes in the I-E change techniques in replicating this study or carrying out further research. The length of time (8 one-hour sessions) for applying I-E change techniques seemed reasonable and was effective in modifying locus of control expectancies. However, a research design which permitted measures (I-E) to be taken on subjects at regular intervals of time during the course of the study would provide concrete information about the minimum number of sessions required for I-E change techniques to be effective. From such information gained it might be possible to shorten the length of treatment without sacrificing

the effectiveness of the treatment.

### Limitations

Because of some limitations of the present study, these results must be viewed with caution. The subjects in the present study were young college students, predominantly female, middle class, and largely Caucasians who at the time of the study lived in the southern United States. The results cannot be generalized to other samples which have different characteristics. In addition, all subjects came to the counseling center seeking assistance with personal problems. Such self-selection limits the generalizability of the results to others who have personal problems and also who have taken similar steps to solve personal problems.

Any time the number of subjects in a study is increased, the error variance is decreased and obtained values are more likely to be nearer the actual population values. For this reason a larger number of subjects would have strengthened the present findings. However, 24 subjects constituted an adequate sample for purposes of this study.

It was not the purpose of this study to evaluate counseling outcomes other than the dependent variable which might have been present in the treatment effects. However, the addition of other dependent variables and criterion measures would be possible in future research. The unobtrusiveness of the pre- and posttest measures within the context

of the counseling center was a strength of the present study and more than compensated for any lack of information which additional criterion measures and dependent variables might have provided. The inconspicuousness of the I-E scale (most subjects in the study took other tests as well as the I-E scale) probably minimized the effects of sensitization upon subjects participating in the experiment. The addition of behavioral measures to aid in assessing the effect of the treatment would be beneficial in subsequent research. If I-E change techniques were being used in vocational counseling, for example, the number and length of visits to the vocational library might indicate the information seeking behavior characteristic of internal locus of control persons. In addition, the subjects who visited the placement center in order to establish a personnel folder, obtain information about job or career opportunities, and register for job interviews might constitute additional behavioral measures indicating internal locus of control expectancies.

Within the scope of this study no follow-up was possible. Consequently, the study was limited because it was not possible to determine if the results of the experimental treatment were lasting. In addition, it was not possible to know if treatments which affected the criterion measure also affected the general behavior of subjects outside the counseling sessions. These limitations can be eliminated by research designs which test for such effects.

### Suggestions for Further Study

The limitations of the present study suggest several possibilities for strengthening the body of research dealing with locus of control as a dependent variable and specifically the research dealing with I-E change techniques:

1. A study designed to investigate the permanence of the effects produced by I-E change techniques would contribute significantly to the field of counseling and to the growth of I-E change techniques. A research design which would include follow-up of the subjects after a period of one semester or one school year probably would be adequate.

2. Research which would include as criterion measures general behaviors in the subjects' lives would strengthen the research as well as strengthen the validity of change techniques for modifying locus of control expectancies (as opposed to responses on a criterion measure).

3. External locus of control individuals frequently perceive reinforcements to be under the control of powerful others (Rotter, 1966; Rotter, et al., 1972). Locus of control theory, therefore, belongs in expectancy theory; that is, real control is not the issue, but perceived control of reinforcements. A study designed to examine the relation of perceived control as in I-E theory, to maladjustment in marriage would be beneficial to locus of control theory and marriage counseling. In such a study the independent variable might be maladjustment in marriage measured by one

of several tests available. The dependent variable might be locus of control expectancies measured by the I-E scale. With these independent and dependent variables, ex post facto research would be implied.

4. A research study which empirically investigated the relation of extreme internality to maladjustment would significantly contribute to the body of growing knowledge about locus of control theory. The relevance for this kind of study becomes more significant for locus of control theory now that techniques exist which apparently are capable of producing extreme internal locus of control expectancies. No research reviewed has validated Rotter's speculation that extreme internal scores are related to maladjustment (Rotter, 1966). A correlational study, for example, which compared extreme internality (for example, two standard deviations or more below the mean on the I-E scale) to a measure of maladjustment (for example, the subscales on the MMPI) would appear to be adequate to accomplish this task.

5. Research which would examine the effectiveness of I-E change techniques for different kinds of personal problems encountered in counseling would contribute significantly to the refinement of I-E change techniques and their application in the field of counseling. This research might initially assess subjects on types of presenting problems by means of personality tests. Matching would probably be necessary to equate the groups on locus of control expectancy

for subsequent statistical analysis. Such problems as depression, anxiety reaction, interpersonal relations, phobic reaction, and sexual deviation might be examples of the types of problems encountered. The dependent variable might be locus of control expectancies measured by the I-E scale. Treatment would be I-E change techniques. The purpose of such research would be to determine if I-E change techniques were more effective when used for treating certain types of problems than with other types of problems.

6. Research using I-E change techniques would benefit by including sex of subject as one of the independent variables. Some research (Felton & Biggs, 1973) has reported that females showed a tendency to change locus of control expectancies, but males did not. Research is needed to empirically determine if males are affected differently from females by I-E change techniques. Such findings should aid in the development and utilization of I-E change techniques in the field of counseling.

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APPENDIX A  
ROTTER'S I-E SCALE

## APPENDIX A

## ROTTER'S I-E SCALE

GENERAL ATTITUDES SCALE

Instructions: For each of the following items there are two choices. Circle the letter beside the statement in each pair that best describes how you feel now. There are no "right" or "wrong" answers. Circle the statements that you believe to be true, rather than what you would like them to be.

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 boss often depends on who was lucky enough to be in the right place first.  
b. Getting people to do the right thing 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 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 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 a local level.

APPENDIX B  
ORAL EXAMINATION



## APPENDIX B

## ORAL EXAMINATION

## I-E Change Techniques

Objective: To determine the locus of control of client statements and develop skill in utilizing the I-E change techniques employed in this study.

Instructions: A sample client statement will be read to you. (a) Decide if the client statement expresses an internal, external or neutral locus of control. (b) Give an appropriate counselor response consistent with the I-E change techniques in this study. (c) If the statement is external, give an appropriate confronting counselor response.

1. "Why try when I know I'm a loser?"

External\_\_\_ Internal\_\_\_ Neutral\_\_\_

Counselor Response:

Confronting Response:

2. "The toughest thing about being sick and missing school is having to depend on others to find out what I've missed and get their class notes. I feel so much better when I can take care of myself."

External\_\_\_ Internal\_\_\_ Neutral\_\_\_

Counselor Response:

Confronting Response:

3. "I've tried to take care of myself, but now with my bad

hand and the kids to look after, I'm not sure if I can ever earn enough money to keep my head above water."

External\_\_\_Internal\_\_\_Neutral\_\_\_

Counselor Response:

Confronting Response:

4. "I never get a chance to try things I want to do."

External\_\_\_Internal\_\_\_Neutral\_\_\_

Counselor Response:

Confronting Response:

5. "I never liked school much."

External\_\_\_Internal\_\_\_Neutral\_\_\_

Counselor Response:

Confronting Response:

6. "I remember when I was a kid, I could always find a summer job, no matter how much everyone else complained about tough times."

External\_\_\_Internal\_\_\_Neutral\_\_\_

Counselor Response:

Confronting Response:

7. "No matter how hard I try, something always happens to foul me up."

External\_\_\_Internal\_\_\_Neutral\_\_\_

Counselor Response:

Confronting Response:

8. "You are going to tell me what to do about this problem, aren't you?"  
External\_\_Internal\_\_Neutral\_\_  
Counselor Response:  
Confronting Response:
9. "I don't need to go through college--I can make a living without a college degree."  
External\_\_Internal\_\_Neutral\_\_  
Counselor Response:  
Confronting Response:
10. "I can talk to you okay here in counseling, but it would be a different story if I tried to talk to anyone else this way."  
External\_\_Internal\_\_Neutral\_\_  
Counselor Response:  
Confronting Response:
11. "I always had a lot of friends, but I guess no one would call me a leader."  
External\_\_Internal\_\_Neutral\_\_  
Counselor Response:  
Confronting Response:
12. "I can't get a job with no more experience than I have."  
External\_\_Internal\_\_Neutral\_\_  
Counselor Response:  
Confronting Response:

APPENDIX C  
I-E SCALE AND PC SUBSCALE SCORES

## APPENDIX C

## I-E SCALE AND PC SUBSCALE SCORES

SUBJECT	COUNSELOR	TREATMENT	PRE	POST	PRE	POST
			I-E	I-E	PC	PC
1	I	Traditional Cg	10	2	9	1
2	I	Traditional Cg	8	3	10	3
3	I	Traditional Cg	22	9	21	9
4	I	Traditional Cg	11	3	12	5
5	I	Traditional Cg	12	5	15	4
6	I	Traditional Cg	14	7	10	5
7	II	Traditional Cg	16	6	16	7
8	II	Traditional Cg	14	5	11	4
9	II	Traditional Cg	10	4	9	4
10	II	Traditional Cg	14	7	11	5
11	II	Traditional Cg	10	1	14	6
12	II	Traditional Cg	10	2	10	0
13	I	I-E Change Techniques	5	0	1	0
14	I	I-E Change Techniques	9	3	9	5
15	I	I-E Change Techniques	8	3	6	2
16	I	I-E Change Techniques	13	4	14	6
17	I	I-E Change Techniques	8	1	3	0
18	I	I-E Change Techniques	7	3	9	4
19	II	I-E Change Techniques	5	0	4	0
20	II	I-E Change Techniques	4	0	1	0
21	II	I-E Change Techniques	7	3	4	2
22	II	I-E Change Techniques	6	2	5	2
23	II	I-E Change Techniques	15	7	6	4
24	II	I-E Change Techniques	12	4	7	1