

## INFORMATION TO USERS

This material was produced from a microfilm copy of the original document. While the most advanced technological means to photograph and reproduce this document have been used, the quality is heavily dependent upon the quality of the original submitted.

The following explanation of techniques is provided to help you understand markings or patterns which may appear on this reproduction.

1. The sign or "target" for pages apparently lacking from the document photographed is "Missing Page(s)". If it was possible to obtain the missing page(s) or section, they are spliced into the film along with adjacent pages. This may have necessitated cutting thru an image and duplicating adjacent pages to insure you complete continuity.
2. When an image on the film is obliterated with a large round black mark, it is an indication that the photographer suspected that the copy may have moved during exposure and thus cause a blurred image. You will find a good image of the page in the adjacent frame.
3. When a map, drawing or chart, etc., was part of the material being photographed the photographer followed a definite method in "sectioning" the material. It is customary to begin photoing at the upper left hand corner of a large sheet and to continue photoing from left to right in equal sections with a small overlap. If necessary, sectioning is continued again – beginning below the first row and continuing on until complete.
4. The majority of users indicate that the textual content is of greatest value, however, a somewhat higher quality reproduction could be made from "photographs" if essential to the understanding of the dissertation. Silver prints of "photographs" may be ordered at additional charge by writing the Order Department, giving the catalog number, title, author and specific pages you wish reproduced.
5. PLEASE NOTE: Some pages may have indistinct print. Filmed as received.

**Xerox University Microfilms**

300 North Zeeb Road  
Ann Arbor, Michigan 48106

76-28,434

CLAWSON, Thomas Warren, 1947-  
THE EFFECTS OF RATIONAL SELF-COUNSELING  
UPON THE LOCUS OF CONTROL OF TREATED  
SUBJECTS.

The College of William and Mary in  
Virginia, Ed.D., 1976  
Education, guidance and counseling

**Xerox University Microfilms**, Ann Arbor, Michigan 48106

PLEASE NOTE  
Page 82 is lacking in number  
only, no text is missing.

UNIVERSITY MICROFILMS

THE EFFECTS OF RATIONAL SELF-COUNSELING  
UPON THE LOCUS OF CONTROL  
OF TREATED SUBJECTS

---

A Dissertation  
Presented to the  
Faculty of the School of Education  
College of William and Mary in Virginia

---

In Partial Fulfillment  
Of the Requirements for the Degree  
Doctor of Education

---

by  
Thomas W. Clawson  
July, 1976

APPROVAL SHEET

We the undersigned do certify that we have read this dissertation and that in our individual opinions it is acceptable in both scope and quality as a dissertation for the degree of Doctor of Education.

Accepted July 1976 by

*Fred L. Adair*

---

Fred L. Adair, Ph.D., Chairman

*Kevin E. Geoffroy*

---

Kevin E. Geoffroy, Ed.D.

*Charles O. Matthews, II*

---

Charles O. Matthews, II, Ph.D.

### Acknowledgments

Numerous people have given me confidence and inspiration to complete this dissertation. To my family and friends for their encouragement through this part of my life, I extend my thanks:

To Fred Adair for his wisdom in guiding me through this project, for his concern for me as a friend, and for opening many doors in my life.

To Kevin Geoffroy for his valuable editorial comments during the writing of this dissertation and for his ability to give me a humorous and rational perspective in trying times.

To Charles Matthews for his keen eye for editing (sic), his pertinent philosophical insights, and his ability to make constructive criticism seem like a compliment.

To Dan Collins for the numerous hours he gave to provide me with a knowledge of RSC and for his unselfish assistance in helping establish the treatment program.

To Armand Galfo for assisting me extensively in statistical design and analysis and to Cynthia Null for her timely direction in computer analysis.

To Doris Ennis, Gail Robertson, and Mary Passage for their cooperation in providing the populations for this study.

And to my wife, Pat, for enduring my studies and for her tireless assistance in test scoring, proof reading and typing this dissertation at least five times.

TABLE OF CONTENTS

ACKNOWLEDGMENTS . . . . .	iii
LIST OF TABLES . . . . .	vii
Chapter	
1. INTRODUCTION . . . . .	2
Statement of the Problem . . . . .	7
Theory . . . . .	8
Summary . . . . .	14
Definition of Terms . . . . .	15
Hypotheses . . . . .	17
Plan of Presentation . . . . .	18
2. REVIEW OF THE LITERATURE . . . . .	19
The History of Rational Theory . . . . .	19
Research in Rational Theory . . . . .	28
Review of the Locus of Control	
Construct . . . . .	34
Research in Locus of Control . . . . .	35
Characteristics of Internals	
And Externals . . . . .	41
Locus of Control and Rational	
Theory . . . . .	43
The Watson-Glaser Critical Thinking	
Appraisal . . . . .	46
Summary . . . . .	51
3. METHODOLOGY . . . . .	53

	Research Design . . . . .	55
	Treatment Procedures . . . . .	56
	Measurement Instruments . . . . .	58
	The I-E Scale . . . . .	58
	The Watson-Glaser Critical Thinking Appraisal . . . . .	60
	The Course Evaluation Test . . . . .	61
	Data Analysis . . . . .	62
	Data Collection . . . . .	62
	Statistical Analysis . . . . .	63
4.	RESULTS . . . . .	67
	Hypothesis 1 . . . . .	67
	Hypothesis 2 . . . . .	69
	Hypothesis 3 . . . . .	70
	Hypothesis 4 . . . . .	73
	Hypothesis 5 . . . . .	73
	Hypothesis 6 . . . . .	75
	Further Analysis . . . . .	75
	Summary . . . . .	82
5.	SUMMARY, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS . . . . .	83
	Summary . . . . .	83
	Conclusions . . . . .	85
	Limitations . . . . .	88
	Recommendations . . . . .	89

## APPENDIX

A. The I-E Scale . . . . .	92
B. The Course Evaluation Test . . . . .	97
C. Frequency Distribution and Descriptive Statistics for Pretest and Posttest Scores on I-E . . . . .	99
D. Frequency Distribution and Descriptive Statistics for CTA Pretests . . . . .	100
E. Frequency Distribution and Descriptive Statistics for Part-test--Evaluation of Arguments, Pretest and Posttest Included . . . . .	101
F. Frequency Distribution and Descriptive Statistics for Course Evaluation Test Scores . . . . .	102
G. Frequency Distribution and Descriptive Statistics for Age of Subjects . . . . .	103
H. Frequency Distribution of Subjects by Sex . . . . .	104
I. Outlines and Quizzes for Maultsby Tapes . . . . .	105
REFERENCES . . . . .	132

LIST OF TABLES

Table

1. Hypothesis 1 -- Repeated Measures Analysis of Covariance for Pretest-Posttest I-E Scores, Covarying for Pretest CTA and Course Evaluation Scores . . . . .	68
2. Hypothesis 2 -- Repeated Measures Analysis of Covariance for Pretest-Posttest I-E Scores, Covarying for Pretest CTA and Course Evaluation Scores for External Subjects . . . . .	71
3. Hypothesis 3 -- Repeated Measures Analysis of Covariance for Pretest-Posttest I-E Scores, Covarying for Pretest CTA and Course Evaluation Scores for Internal Subjects . . . . .	72
4. Hypothesis 4 -- Repeated measures analysis of Variance for Pretest-Posttest Evaluation of Arguments Scores . . . . .	74
5. Hypothesis 5 -- Pearson Product-moment Correlation between CTA Pretest Scores and Course Evaluation Tests . . . . .	76
6. Hypothesis 6 -- Pearson Product moment Correlation between Pretest CTA and I-E Scores . . . . .	77

7. Total Subject Variance as Measured by Repeated Measures Analysis of Covariance on the three Sub-populations -- Hampton Counselors, Newport News School Personnel and Contact Volunteer Counselors . . . . .	79
8. External Subject Variance as Measured by Repeated Measures Analysis of Covariance on the three Sub-populations -- Hampton Counselors, Newport News School Personnel and Contact Volunteer Counselors . . . . .	80
9. Internal Subject Variance as Measured by Repeated Measures Analysis of Covariance on the three Sub-populations -- Hampton Counselors, Newport News School Personnel and Contact Volunteer Counselors . . . . .	81

Below the surface-stream, shallow and light,  
Of what we say we feel - below the stream,  
As light, of what we think we feel - there flows  
With noiseless current strong, obscure and deep  
The central stream of what we feel indeed.

Matthew Arnold

The Effects of Rational Self-Counseling  
Upon the Locus of Control  
of Treated Subjects

## Chapter 1

### Introduction

Psychologists have often pointed out the need for teaching healthy psychological skills to the general public in an effort to reduce the need for counseling at some later date (Adler, 1964; Dinkmeyer and Dreikurs, 1963; Glasser, 1965). A method that has emerged is that of rational self-counseling (RSC), a didactic approach to a therapy that teaches clients to deal with their problems using minimal outside help (Maultsby, 1971). Maultsby has introduced this technique as an addition and a supplement to his intensive Rational Behavior Training (RBT). RSC focuses on the idea that behavior in people is mediated or caused by their thinking. Its use with individuals and groups was developed by Maultsby (1975).

The principles behind rational self-counseling are simplified so that the concepts can easily be taught to laymen. Maultsby (1971; Maultsby, Costello & Carpenter, 1974; Maultsby, 1975) considers five goals all important for a person to find and maintain a rational base from which he will emote. The goals are concise so that quick recall is facilitated in order to test behavior for rationality.

First, rational behavior must be based on the acceptance of objective reality. People: "observe the real conditions around them--the state of the world and of other people in it--and they discover the relevant facts of the life situation . . . which ex-

ists for them" (Ellis in Maultsby, 1975, p. 11). Second, rational behavior is life preserving. People: "protect themselves from severe injury or death" (p. 11). Next, behavior which enables people to achieve self-determined goals most quickly is regarded as rational.

They decide on major and minor subgoals--such as living in a certain community, getting along with other people, and engaging in productive and creative work and recreational activities--and they try to achieve these goals efficiently and quickly. (p. 11)

The fourth type of rationality is the behavior enabling a person to avoid conflict with other people, especially those in frequent contact. This form of rational behavior: "enables people to keep out of significant trouble with other people" (Maultsby, 1975, p. 8). And fifth, Maultsby states that rational behavior: "enables people to prevent or quickly eliminate significant personal emotional conflict" (p. 8). "They observe their own emotional difficulties and feeling of extreme upsetness and they try to prevent or minimize or eliminate their emotional conflicts: (Ellis in Maultsby, 1975, p. 11).

Maultsby (1975) contends that rational emotional or physical behavior must attain at least three of the five goals mentioned above. The first goal, objective reality, is always included as one of the three goals met. RSC employs the technique of rational self-analysis to help the client achieve these goals. Here,

Maultsby has drawn specifically from Ellis. It is impossible to discuss RSC without giving credit to Ellis for the method of achieving the rational goals--rational-emotive therapy (RET). The components of RET are expressed in ABC format:

A is the point at which an activity or action takes place that disturbs a person emotionally.

B designates the intermediating thoughts occurring between the initiating action and the resulting emotion, C. The thoughts can be either rational or irrational at B.

The consequential emotion, or C, is rational and reasonable if B has been rational, and irrational and inappropriate if B has been irrational.

RSC is the child of RET in that it uses Ellis' ABC principle as a vehicle of teaching clients to analyze their emotions and thoughts. In rational self-analysis a client practices rational-emotive theory in written form. He learns to recognize an emotional response he does not wish to have, and then proceeds to write down the components of that emotion. Most important in rational self-analysis is the challenging use of logical argument against irrational beliefs. Once the client has learned to analyze the reasons for his emotional responses on paper, he can then internalize the activity.

In an effort to find the effects of learning to challenge and argue with irrational beliefs, this study will incorporate the Watson-Glaser Critical Thinking Appraisal (CTA; Watson & Glaser,

1964). The 99-item test is divided into five subtests. The last subtest, Evaluation of Arguments, will be used to measure a change in: "ability to distinguish between arguments which are strong and relevant and those which are weak or irrelevant to a particular question at issue" (p. 2). The better the client is at recognizing inconsistency and irrationality in his beliefs, as well as confronting and arguing with these beliefs, the higher his score theoretically should be in the Evaluation of Arguments.

After a thought or emotion is self-analyzed, a system of training or retraining thought processes is utilized. Maultsby calls it rational-emotive imagery (REI). It is a technique used by a client in a relaxed state to rehearse rational behavior. Once a rational self-analysis is complete the client can mentally act out new ways to behave before that behavior is needed again in his life. REI, along with rational self-analysis, then, are the tools by which clients can become rational self-counselors.

Rational thinking is the optimal product of RSC, yet measurement of rational thinking is difficult. What is rational today for a client may change over time. In an attempt to measure rational thinking, Ellis (1971) has developed the Irrational Belief Test, Maultsby (Goodman, 1974) offers the Common Perception Scale, the Common Belief Scale, and the Common Trait Scale, and Zingle (1975) has written the Irrational Ideas Inventory to measure rational and irrational thinking. The phenomena they measure appear stable over time and tend to change for the better with

rational therapies. In studies to determine effects of rational training, several personality measures have been applied. Some of them include the Marlowe-Crowne Social Desirability Scale, the California Personality Inventory (CPI), the Taylor Manifest Anxiety Scale, Eysenck's Neuroticism Scale, the Personal Orientation Inventory (POI), the Marital Adjustment Inventory, and Rorschach Prognostic Rating Scale, the Minnesota Multiphasic Personality Inventory, and Rotter's Internal-External Scale (I-E).

The Rotter Internal-External Scale was used by Maulsby, Knipping and Carpenter (1974) as a check of a scale on the POI when measuring change created by RSC. Knipping and Chandler (1975) later used the I-E to measure RSC effectiveness as compared to Transactional Analysis. The MacDonald-Tseng Scale (MacDonald & Tseng, 1971), one with measures similar to the I-E, was used to determine psychological adjustment as defined by Ellis' (1962) irrational values. While the MacDonald-Tseng Scale was employed because Hersch and Scheibe (1967) have espoused the notion that internals are better adjusted than externals, the first two studies give no clear-cut reason for testing for internal-external control. It is probable that the same concepts that come into use in determining rational and irrational behavior are also important in the determination of internal and external locus of control. The visibility of internal-external theory in rational therapies notwithstanding, there have been no published studies to date showing direct relationship of the two concepts. The choice of Rotter's

I-E Scale as a measuring instrument for an RSC treatment group is not for the purpose of establishing the relationship between internal-external and rational-irrational, but rather to discern whether movement in locus of control will occur.

#### Statement of the Problem

Research findings to the present have given no clear-cut indication of the effects of rational self-counseling upon a subject's internal-external locus of control. Rational therapists encourage the challenging or arguing with irrational beliefs held by clients, yet no studies have been attempted using conventional measures of argument evaluations. Since RSC is a didactically taught course, learning the principles may be influenced by the intelligence of the subject.

A test which will allow the experimenter to control for intelligence as well as measure the subject's ability to evaluate argument is in existence--the Watson-Glaser Critical Thinking Appraisal. Therefore, both the subjects' ability to evaluate arguments and the general intelligence of the subjects can be evaluated. Internal-external locus of control can be examined by using Rotter's I-E Scale.

The purpose of this study is to explore the effects of rational self-counseling upon subjects learning the technique. The major effect studied will be that of locus of control of reinforcement in the subject. The study will attempt to demonstrate whether intelligence has any bearing on the change of locus of control as

well as examine whether RSC is a change agent in a subject's ability to evaluate arguments.

### Theory

The review of theory pertaining to the proposed study is divided into three basic areas. First discussed is the theory base behind the treatment program of rational self-counseling. Second is the framework of a psychological construct which the treatment program is hypothesized to affect--locus of control in individual behavior. Third is the cognitive nature of rational theory and the measurement of cognitive change.

The historical precursors of rational-emotive therapy and rational self-counseling are often traced back to the Greek Stoic philosophers of the fourth century B.C. (Yonge, 1905). Epictetus, a Roman Stoic, later stated that: "It is not the things themselves that disturb men, but their judgements about these things" (Oldfather, 1928, p. 487). Two main points of Stoic philosophy have been: "that human emotions are basically ideogenic in their origin; and that to control or change even one's most violent and intense feelings one mainly would better change one's ideas" (Ellis in Corsini, 1973, p. 167).

The ideogenic nature of emotions is more recently discussed by Adler in Social Interest: A Challenge to Mankind, (1964) when he states:

The individual . . . does not relate himself to an outside world in a predetermined manner, as is often assumed. He

relates himself always according to his own interpretation of himself and of his present problem . . . It is his attitude toward life which determines his relationship to the outside world. (p. 67)

The rational theorist emphasizes the client's self-interest (Ellis, 1962). The client should have love and respect for others, not on any moral grounds, but because it is in his own best interest to live in a society practicing this concept. The rational theorist believes, then, that self-interest demands social interest. Adler (1931) has postulated the idea of social interest previously and is credited by rational theorists for this seminal contribution.

One of the most basic, enduring principles of Adlerian psychology is that of social interest. Adler (1930) introduced this principle in a revision of The Neurotic Constitution. Social interest is the extent to which a person identifies with society, that is, the amount of importance a person places upon relationships with others around him. Adler felt that if a person's striving for power were reduced and redirected toward interest in others that all should have better understanding of human nature. Conversely, if a person has little social interest, or none, he more likely will have neuroses, psychoses, or even criminal characteristics.

Ellis (1973), Maultsby (1975), Maultsby, Costello and Carpenter (1974), have drawn from a variety of other theories to

encapsulate a simple treatment of emotional upset that lay people can understand and successfully apply to themselves. Notable among the precursors of rational therapies are Thorne's directive approach (1950); Herzberg's early work in assigning clients tasks to do outside therapy (1945); behavioral constructs of Dollard and Miller (1950), Skinner and Holland (1961), and Mowrer (1960, 1963); and the social learning theory of Rotter (1954).

Rational Self-Counseling (RSC), as Maultsby (1975) has named his technique and Rational-Emotive Therapy (RET), as Ellis (1962) calls his technique, both follow the same basic tenet for producing emotional change in the client. That tenet is a reduction of an emotion to an analysis of the cognitive origins of the emotion and a replacement of irrational beliefs with rational beliefs. They both describe the process by explaining that a person thinks about the activating experience, A, by the imposition of his attitudes, values, and beliefs, B, upon his perception of A. The emotion elicited, C, is a consequence of the beliefs imposed. More often than not, the beliefs are false or irrational in nature.

Rational theory does not coincide with the stimulus response theory of the first behaviorists, but instead Ellis (1973) contends that between the stimulus, S, and response, R, there is an intervention by the organism, O. This intervention is the oscillation of the effective strength of responses in Hullian terms. SOR, then, is almost the same as ABC. Adler (1931) spoke about this intervention at B when he said:

No experience is a cause of success or failure. We do not suffer from the shock of our experiences--the so called trauma--but we make out of them what suits our purposes. We are self-determined by the meaning we give our experiences: and there is probably something of a mistake always involved when we take particular experiences as the basis of our future life. Meanings are not determined by the situations, but we determine ourselves by the meanings we give to situations.

(p. 14)

It is these intervening beliefs that are the target of any type of rational therapy. The theory postulates that if the person is taught to dispute the irrational beliefs, he will be a rational thinker and hence be able to control his emotions. The irrational person feels controlled by people and circumstances but the rational person feels in control of his life. It is this feeling of internal control that rational therapies seek to give the client.

Rational self-counseling is an emotional self-help system formulated by Maultsby (1975). In theory, it is closely tied to rational emotive therapy (Ellis, 1962). Like RET, RSC stresses living in the present while maintaining independence from the influence of others' opinions. Rational theorists didactically teach analysis of one's thoughts using specific criteria to ensure rational thinking and feeling. The emphasis of RSC centers around the hypothesis that human emotion is caused and controlled by thinking. A reeducation of the person's previously learned thinking is

necessary to teach rational thinking.

One of the emphases that Maultsby (1975) has given to rational theory is the use of REI in the personal reeducation of one's behavior. This practice of having a client imagine himself participating in a rational behavior as a rehearsal of future actions has its origins in behaviorism. King (1973) found that mental images may lead to responses similar to those produced by external, tangible stimuli. Wolpe (1958) has found that one can use mental images to generate emotions. Cautela (1967) hypothesizes that covert procedures of stimulus can be used in reducing the probability of undesired behaviors. Cautela uses sensitization, extinction, reinforcement and other techniques associated with behavioral theory in a covert manner. He feels that anything that can physically happen to a person in behavioral terms can happen as effectively by thinking of those stimuli (1975). Bandura (1969) says that imagined processes can guide later behavior. Self-imagination techniques are widely studied today in psychological treatment.

REI is the final step in learning rational self-counseling. Once the client can internalize the concepts of RSC and use REI in his daily life, then he has the needed tools to control his emotions.

The concept of internal and external locus of control of reinforcement to one's behavior is thoroughly described by Rotter (1954, 1966, 1972) as an integral part of his social learning theory. He states that:

When a reinforcement is perceived by the subject as following

some action of his own but not being entirely contingent upon his action, then, in our culture, it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding him. When the event is interpreted in this way by an individual, we have labeled this a belief in external control. If the person perceives that the event is contingent upon his own behavior or his own relatively permanent characteristics, we have termed this a belief in internal control. (Rotter, Chance, & Phares, 1972, p. 261)

Rotter's (1954) social learning theory deals specifically with internal-external control, but more generally it deals with the prediction of behavior. Rotter, like Ellis and Maultsby, gives credit to behaviorists for their earlier ideas leading to his theory. An equally important parallel between rational theory and social learning theory is the mention of Adler's view (in Ellis, 1972) as a specific antecedent to the social aspects of both theories. It is cogent then, that these theories with many common influences might be compatible in psychological experimentation. Implications that I-E theory is related to irrational-rational theory are scarce; however, the Rotter I-E Scale has been used in measuring effects of RSC programs (Maultsby, 1975). If a reliable measure of rationality were developed, I-E could be investigated for strong positive correlations between the two concepts. However, the focus of

this study does not deal directly with connecting rational-irrational and I-E concepts, but with exploring the effect of rational self-counseling on locus of control.

Rational theorists agree that a distinguishing concept in their theory is the cognitive and didactic nature of rational training (Ellis, 1962, 1971, 1972, 1973; Hauck, 1971, 1972, 1974; Maultsby, 1975; Maultsby et al., 1974). The basic concept is to teach the client to challenge or argue against erroneous, irrational beliefs. This argument with the irrational is the essence of rationality. The client's intelligence and ability to challenge are key factors in the effectiveness of rational training.

Assessment of the client's intelligence and his ability to distinguish between arguments may be helpful in considering the speed and depth of the material learned in therapy. A test which measures both, the Watson-Glaser Critical Thinking Appraisal, is well suited to do both these things. First, it is correlated with intelligence from .66 to .75 on the Otis Mental Ability Test: Gamma, and it has a subscale which measures the subject's evaluation of arguments.

#### Summary

Although Ellis and others have presented a theory, the terms of which are readily understandable to laymen, the theory has multiple and varied antecedents. Rational Self-Counseling, it appears, has a firmly rooted theory base upon which to build. There is consistency in the approach. Rotter's internal-external locus of

control of reinforcers also has as firm a background in theory as RSC. They are in some ways parallel and both merit investigation.

#### Definition of Terms

Terms important to the understanding of the research and discussion are operationally defined to facilitate consistency in interpretation.

#### Locus of Control

Locus of control is a construct found in social learning theory which describes the source from which a person believes he derives reinforcement.

#### Internal Control

Internal control is "the degree to which people perceive that their own behavior rather than the behavior of others is the determiner of the reinforcement" (Rotter, Seeman & Liverant, 1962, p. 473). Internal control is the feeling a person has that he can control to a large extent the events and feelings in his environment. Operationally, low scores on the Rotter I-E Scale indicate internal control.

#### External Control

When a reinforcement is perceived by the subject as . . . the result of luck, chance, fate, as under the control of powerful others or as unpredictable because of the great complexity of the forces surrounding him . . . we have labeled this a belief in external control. (Rotter, 1966, p. 2)

Operationally, high scores on the Rotter I-E Scale indicate exter-

nal control.

### Rational Belief

A rational belief is a thought or attitude which is based on at least three of the five criteria (see Rational Behavior Criteria) for rational behavior. Objective reality, the first criterion, is always necessary for rational thinking.

### Irrational Belief

When a thought of an individual does not meet with the criteria for rational behavior, the thought is an irrational belief.

### Rational Behavior Criteria

Maultsby (1975) has summarized the five rules of rational behavior:

1. It will be based on objective reality, or known relevant facts of the situation;
2. It will enable you to protect your life;
3. It will enable you to achieve your goals most quickly;
4. It will enable you to keep out of significant trouble with other people;
5. It will enable you to prevent or quickly eliminate significant personal emotional conflict. (p. 14)

### Rational Self-Counseling (RSC)

The compilation of rational techniques espoused by Maultsby into a personal method of analysis of problems is termed rational self-counseling. It is an emotional self-help counseling tool.

### Scale

A scale is a set of symbols or numerals so constructed that the symbols or numerals can be assigned by rule to the individuals (or their behaviors) to whom the scale is applied, the assignment being indicated by the individual's possession of whatever the scale is supposed to measure. (Kerlinger, 1973)

### Hypotheses

The purpose of the study is to measure the effects that a course in rational self-counseling will have on subjects taking the course. The hypotheses are:

Hypothesis 1. Subjects receiving the treatment course in RSC will show significant movement in the internal direction on I-E Scale scores.

Hypothesis 2. External subjects receiving the treatment course in RSC will show significant movement in the internal direction on I-E Scale scores.

Hypothesis 3. Internal subjects receiving the treatment course in RSC will show significant movement in the internal direction on I-E Scale scores.

Hypothesis 4. Subjects receiving the treatment course in RSC will show a significant increase in scores on the CTA, subtest--Evaluation of Arguments.

Hypothesis 5. There will be a relationship between pretest CTA scores and course evaluation test scores of RSC treated subjects.

Hypothesis 6. A negative relationship will occur between pre-

test I-E Scale scores and pretest CTA scores.

#### Plan of Presentation

The presentation of the information relevant to this investigation has been structured into five parts designated as chapters. The present chapter serves to introduce the reader to the subject, present the problem, state the theoretical background, define important terms, and present the hypotheses. The four following chapters include a review of related literature; research methodology; analysis and results of data; and the summary, conclusions, and recommendations drawn from the study.

## Chapter 2

### Review of the Literature

This chapter is divided into six sections which contribute to an overall understanding of the rationale for the field experiment performed: (a) the history of rational theory, (b) research in rational theory, (c) a review of the locus of control construct, (d) research in locus of control, (e) the relationship of locus of control to rational theory, and (f) a review of the Watson-Glaser Critical Thinking Appraisal.

#### The History of Rational Theory

The history of rational theory as it is used in the specific therapies, RET, RBT, RSC and others is relatively recent (Ellis, 1961). Ellis, however, has been quick to point out that numerous philosophers, psychologists and scientists have influenced the development of rational theory. First, and most difficult to review because of the loss of a great portion of their writings and the numerous translations in existence are the Greek Stoic philosophers. Zeno (Yonge, 1905), the Greek Stoic, has summarized the Stoic views of the distinction between perception and sensation and defines sensation as an organic disposition or the energy and active exercise of a sense organ. Perception is defined as the criterion by which the truth of facts is determined and believed, " . . . and because [of] the judgement which expresses the belief, and the comprehension, and the understanding of a thing, a judgement which precedes all others,

cannot exist without perception" (Yonge, 1905, p. 277). After defining perception, he makes statements which precede, but coincide with the rational point of view. He says:

For perception leads the way; and then thought, finding vent in expressions, explains in words the feeling which it derives from perception . . . . According to their [the Stoics] ideas of the [object producing the impression or stimulus], some are sensible and some are not . . . those which are sensible, are produced by a real object, which imposes itself on the intelligence, and compels its acquiescence; and there are also some others, which are simply apparent, mere shadows, which resemble those which are produced by real objects.

Again, these [impressions] are divided into rational and irrational; those which are rational belong to animals capable of reason; those which are irrational to animals destitute of reason. (pp. 277-278)

Epictetus, a Roman philosopher who lived in the first century A.D., has written numerous works which deal directly with the works of the Stoics. His writings reflect an important theoretical origin of RET. Epictetus is most quoted by rational theorists for his observation, "Bear in mind that it is not the man who reviles or strikes you that insults you, but it is your judgement that these men are insulting you" (Oldfather, 1928, V.2, p. 499). He is alluding to the fact that external events

in a person's life do not cause disturbance within the person; it is the thoughts and judgements about the event that produce the disturbance. In Book IV of the Discourses of Epictetus the concept of the thoughts of the person being a director of a feeling is depicted in a discourse concerning rejection. When one is locked out of a place he wished at one time to enter Epictetus asks, "How, then, is it that you are not locked out? -- Because, if anyone will not receive me, I do not care to go in . . ." (p.367). Literally Epictetus is saying that one cannot be locked out if he does not wish to enter. Theoretically he is alluding to the fact that thoughts about an event are the determinants of the reaction to the event. In addition he has clarified Stoic writings regarding rational and irrational thoughts:

To the rational animal only the irrational is intolerable; but that which is rational is tolerable . . . . We shall find that the animal man is pained by nothing so much as by that which is irrational; and, on the contrary, attracted to nothing so much as to that which is rational. (Long, 1906, bk. 3, p. 8)

Modern rational theory is based on both the concepts of thoughts producing emotions and the rational or irrational nature of behavior. Epictetus was probably the first to speak specifically about both concepts although he was influenced by the ideas of many earlier Stoics. These ideas were not investigated to any extent until Spinoza in the seventeenth century

wrote extensively in the philosophic area of psychophysical parallelism. In The Ethics (Elwes, 1888a) and On The Improvement of Understanding (Elwes, 1888b), Spinoza discusses ideas, emotions, imagination and causes of behavior. The influence of Stoic philosophy upon his work is seen in these topics. Of emotions, Spinoza says:

An emotion, which is a passion, ceases to be a passion, as soon as we form a clear and distinct idea thereof.

Proof. An emotion, which is a passion is a confused idea . . . . If, therefore, we form a clear and distinct idea of a given emotion, that idea will only be distinguished from the emotion, in so far as it is referred to the mind only, by reason . . . therefore . . . the emotion will cease to be a passion.

Corollary. An emotion, therefore, becomes more under our control, and the mind is less passive in respect to it, in proportion as it is more known to us. (Elwes, 1888a, prop. III)

Understanding emotions is not a new concept then in psychology. Spinoza, in the corollary above, has succinctly provided a basis for emotional self-help systems of psychology which are presently popular. Spinoza speaks about perception in terms of imagination and ideas. He states:

. . . we have distinguished between a true idea and other perceptions, and shown that ideas fictitious, false and the

rest, originate in the imagination--that is, in certain sensations fortuitous (so to speak) and disconnected, arising not from the power of the mind, but from external courses, according as the body . . . receives various motions. (Elwes, 1888b, p. 171)

He notes that false ideas must originate in the imagination, a concept congruent to rational theory, but rational theorists would add that the imagination can also be used in thinking true ideas (Maultsby, 1975). The reeducation of a person to enable him to use thought processes to imagine true ideas and to distinguish between true and false, that is, rational and irrational ideas, is paramount in the therapy (Ellis, 1973).

Philosophic precursors to rational theory are numerous but those mentioned are the most directly influential. Origins of a more purely psychological nature are found most specifically with the individual psychology of Alfred Adler. While Freud (1895) had previously devised an ideogenic theory of emotional disturbance, it was lost in his later formulations (Ellis, 1971). Adler's ideogenic theory was directly influenced by the writings of Immanuel Kant (Ansbacher, 1965). Kant (1964) made a distinction between private intelligence and common sense. He said, "The only feature common to all mental disorders is the loss of common sense (sensus communis) and the compensatory development of a unique, private sense (sensus privatus) of reasoning" (p. 19). Ansbacher (1965) concludes that, because of the influences of Kant upon

Adler, Adler "belongs among the phenomenological, cognitive, understanding, Gestalt and field psychologists such as Spranger, Stern, Wertheimer, Lewin, all of who can be said to have developed under the influence of Kant" (p. 49). Of the types of psychology Ansbacher mentioned, rational theorists would be most interested in the cognitive and understanding because they most closely coincide with rational theory.

Kant, then, was not only an influence upon Adler, but Ellis has stated that Kant played the most important role of the pre-Adlerians in his theoretical development (Ellis, 1971). Ellis translated many of Kant's works in the years before the formulation of RET but because of the more psychological nature of Adler's work it is more readily seen in Ellis' theorizing. Ellis, too, more readily gives credit to Adler for early influence (Ellis, 1963, 1971, 1973). Ellis, in an address to the American Psychological Association (1970) stated, "Adler was certainly one of my main mentors; and it is highly probable that without his pioneering work, I would never have arrived at the main elements of RET" (p. 51).

Adler held that a person's emotional reactions are directly correlated with his basic ideas:

It is very obvious that we are influenced not by "facts" but by our interpretation of facts . . . Everyone possesses an "idea" about himself and the problems of life - - a life-pattern, a law of movement - - that keeps fast hold of him without his understanding it, without his being able to give

any account of it. (1933, pp. 26-27) - - We orient ourselves according to a fixed point which we have artificially created, which does not in reality exist, a fiction. This assumption is necessary because of the inadequacy of our psychic life. (Adler, 1927, pp. 72-73)

While there are many points of individual psychology with which rational theorists disagree (Ellis, 1971, 1973), the most significant contribution from Adler is his supposition of the origin of behavior and emotion. Adler's theory of emotion is, "In a word, I am convinced that a person's behavior springs from his idea" (1933, p. 19). Although Adler's treatment of patients is different in many respects from RET, the parallels clearly indicate the important role of Adler in the RET movement. Adler was one of the first psychologists to emphasize the teaching part of therapy, a digression, among many, from Freud. This didactic approach is Adler's requirement that a patient's mistaken premises and goals be impressed upon him. In RET this is the point at which the therapist points out the irrationality of the patient's thinking or behavior (Ellis, 1971). Individual psychology is probably the most important psychological theory influencing RET; however, in therapeutic practice, behavioral techniques are eminently important.

RET has drawn from a wealth of behavioral constructs. C.L. Hull espoused a behavioral theory which closely corresponds to RET. In addition to the stimulus-response paradigm, Hull has added an important variable to animal reaction. He has described the process

as:

The first link of this necessary functional rapport of the effector organs with organismic needs and environmental conditions is constituted by receptors which convert the biologically more important of the environmental energies (S) into neural impulses (s). For the most part these neural impulses flow to the brain, which acts as a kind of automatic switchboard mediating their efferent flow (r) to the effectors in such a way as to evoke response (R). (1943, p. 383)

Hull later termed the s and r as the organismic intervention (O) between S and R. Ellis sees the thought process of the individual as being the intervening O in the steps of an event in an individual's life leading to an emotional response. Dollard and Miller (1950), Skinner (1938), and Woodworth (1958) have also been influential in the behavioral foundation of rational theory, but aside from SOR foundations the most important role behaviorism has played in RET is the use of behavioral techniques in therapy (Ellis, 1973).

Thorne (1950) in his formulation of an eclectic therapy employed a directive approach to client interaction. Ellis (1961) later incorporated this into RET. This directive approach is used in teaching behavioral principles to clients as well as in delineating behavioral programs.

One of the most used methods taken from behavioral counseling

is that of psychoimagination. Wolpe (1958) was an early developer of reciprocal inhibition, the association of an antagonistic response to the response selected by the client or therapist for extinction. While reciprocal inhibition is not often used in RET, the technique of having a client imagine life situations is a method employed in RET and termed rational emotive imagery (REI). Cautela has devised a series of covert behavior modification procedures which are similar to REI. In covert sensitization, a person imagines something aversive in association with the extinction response (undesired behavior), much like Wolpe's reciprocal inhibition. Covert extinction (Cautela, 1971) takes place when a person imagines the extinction response occurring but does not imagine a paired reward. In covert reinforcement (Cautela, 1970) a person imagines a graduated series approach behaviors to a feared stimulus; each step in the series is accompanied by an imagined reinforcement. Cautela's covert sensitization is equivalent and precedent to Maultsby's auto-aversion imagery (Goodman & Maultsby, 1974), a type of REI.

Other forms of aversion therapy are employed in RET (Maultsby, 1975). All are drawn directly from behaviorism. Ellis (1973) and Maultsby (Goodman & Maultsby, 1974) both point out that a number of theories and techniques are used with little modification by rational practitioners. Some of the practitioners whose works are drawn upon include Aaron T. Beck, Eric Berne, Charlotte Buhler, George Kelly, Arnold Lazarus, and Julian Rotter. Credit is often

given to these people for their indirect contribution to RET.

### Research in Rational Theory

A major purpose of counseling or psychotherapy is to reduce handicapping emotional states. RET has been shown as a practical method of changing behavior which causes debilitating or annoying unwanted emotions. As often happens in literature of a psychological nature, many reports of effectiveness of therapeutic techniques are only assumptions of the writer. Since RET incorporates so many supplementary techniques, this review will focus on the experimentation with the commonly accepted form of RET, that is the teaching of the ABC theory of emotional upsets to subjects. When other techniques are incorporated, the review will concentrate on those most commonly associated with RET so that the review does not become one of great proportions.

Use of RET for aid in classroom behavioral disorders has been recently used with success. Trexler and Karst (1970) experimented with 22 undergraduates at Temple University who reported high levels of public speaking anxiety. Two pretest and posttest measures of behavior were taken along with five self-reported measures. Subjects were given rational emotive group therapy or no therapy. Because of unreliable measuring devices, no significant differences were found. This precluded verbal reports by the subjects that a decrease in anxiety had occurred for them. Results did lend some support to the assumption that therapy (RET in this case) is effective when compared to no treatment. The

authors state that cognitive therapies are amenable to study if controls and clear variable definition is obtained. In a subsequent partial replication (Trexler and Karst, 1972) the authors found 33 undergraduates who reported high anxiety in public speaking. The subjects were divided into three groups, one receiving RET, one receiving an attention placebo consisting of relaxation training, and a control group receiving no treatment. The first analysis conducted showed that a significant difference was created between RET and the other two groups with no significance between placebo and control. The control and placebo groups were then given the RET training and posttesting. Both groups had changes toward lower anxiety as did the first RET group. This uniquely designed experiment has shown the effectiveness of RET in reducing public speaking anxiety.

In a related study involving reduction of speech anxiety, Stradtmyer and Watkins (1974) divided 57 subjects into four groups who received a course in RET; a modified RET procedure which omitted the disputing part of the therapy; an attention placebo; or no treatment. Two self report and two behavior analyses were used. The hypothesis that the RET course would change anxiety was supported. It should be noted that the effective treatment was a course in RET and not group RET treatment as in the Trexler and Karst studies. In other no classroom studies RET has been shown as an effective method of relieving anxiety. Laboratory studies by Carlson, Travers, and Schwab (1969) show

RET's cognitive control of anxiety as being effective. Velton (1968) has shown laboratory change in mood states when RET was incorporated. In another experiment in anxiety reduction, Paul (1966) found insight superior to desensitization as a treatment. The cognitive nature of RET served as a means of obtaining insight in clients.

Emotional states are transmitted to the body through the nervous system. Physiological indicators are useful in the measurement of emotional states and represent an empirical basis for measuring differences in state levels. Burkhead tested Ellis' theory of emotion disturbance in the laboratory setting. Subjects were told that they might receive mild electric shocks. Since no real basis existed for strong emotional reaction, an attempt was made to control these emotional responses through a procedure of explaining why such responses need not occur. The physiological response studied was the galvanic skin response (GSR).

The response is a component of more widespread responses produced by the sympathetic nervous system. These responses are collectively referred to as the physiological components of emotion. The GSR is also a component of the orienting response and the startle response, which have been extensively studied by Russian psychologists. The research described here is based on the assumption that the GSR indicates the presence of a general emotional response and that a strong general emotional response is associated with a strong GSR.

Events that are described either as pleasant or unpleasant may produce a GSR. (Burkhead, Travers & Carlson, 1974)

Four groups of 16 received treatments. One group received rational emotive therapy designed to eliminate irrational emotional responses. The second group received a similar treatment except it was tape recorded so that there was no personal counseling. Group three received no treatment and group four received negative taped interviews which included an explanation of why the subjects would fear the mild shock.

The results of the experiment showed both personal RET and taped RET as highly effective in reducing GSR. The negative taped therapy produced an increase in GSR; or, an increase in emotional activity. The control group remained unchanged throughout the experiment.

In addition to physiological experimentation the study included pre-posttesting on two paper and pencil instruments. One, an introversion-extroversion scale, showed no differences exist in treating introverts or extroverts. An adjective check list was used to measure anxiety before and after treatments. The two RET treated groups declined in anxiety level, the negatively teated group increased, and the control group declined slightly. It is cogent to note that all levels of significance in this study were at the .01 level or better even in cases when the conservative Newman-Keuls comparison of means was incorporated to show the power of mean differences.

One reason that RET is easily tested for its effectiveness is that it is a teaching therapy. Specific emotional problems can be directly confronted with a program to reduce the strength of response and that response can be singled out for testing as well as the psychological traits that the response might affect. As a teaching therapy, RET has advantages as a classroom device for developmental work.

Maultsby, Costello, and Carpenter (1974) predicted that a course in RSC given for credit on the college level would evoke improvement in orientation and evidence of increased autonomy and independence in participants. Shostrom's Personal Orientation Inventory (POI) was the criterion measure with the time competence and inner directedness scales used as specific determinants of time orientation (living in the present) and independence (reliance on self) respectively. Control and experimental groups showing no differences in pretest scores did show differences at the .01 level at posttesting. While the course shows effectiveness in areas predicted, a lack of stringent controls leaves some room for intervening variables.

Maultsby, Knipping and Carpenter (1974) examined the effects of RSC on a high school population by using the Rotter I-E Scale (I-E), POI and the Maultsby Common Trait Inventory (Trait Inventory). The authors report "definite positive changes in the anticipated direction" (p. 446), even though they were working with a small number of subjects. The positive results of this study

prompted another study reported concurrently. The same three instruments were employed to test a college population. In another experimental-control group design the subjects showed posttest differences at the .001 level on the Trait Inventory and positive changes on the POI and I-E but not at the  $p < .05$  level of significance. The I-E "was used to check the support scale on the POI" (p. 447). (This means that in this case the I-E was used as a concurrent measure of the inner-directedness versus other-directedness scores on the POI). No theoretical basis is given for such testing. The study is important for two reasons: it confirms that like many therapies, RSC (RET) can give the subject the needed tool to change emotional states; and it shows the usefulness of such a technique in the classroom setting.

Knipping and Chandler (1975) compared RSC with transactional analysis courses given to 60 high school students. Again the POI, Trait Inventory, and I-E were administered in a pre-post design. Results concluded that both treatments contributed to student emotional self-improvement and additionally that nonprofessionals, that is, teachers not previously trained in psychological education, are useful in contributing to students' knowledge of their emotional reactions. Devoge has taken RET into an institutionalized setting with disturbed children ages eight through 13. She hypothesized that children who were rewarded for rational thinking, expressed verbally, would gain more control of their behavior than those not reinforced. Behavioral ratings support the hypothesis

that rational statement reinforcement along with RET improves self-controlled behavior.

Research not involving classroom methods of transmitting RET showing positive effect are numerous (Ard, 1971; Grossack, 1965; Hauck, 1966, 1968, 1969, 1971; Wark, 1971). In addition, a large amount of studies by researchers not specifically connected to RET have yielded support for the major hypothesis of RET -- that emotional consequences are not caused by external events but by mediation beliefs (Beck, 1967; Becker, Spielberger, & Parker, 1963; Gordon, 1967; Nisbett & Schacter, 1966; White, Fichtenbaum & Dollard, 1969).

#### Review of the Locus of Control Construct

The first measurement of the internal-external control dimension was attempted and reported in a doctoral dissertation by Phares (1955). He designed a 23 item scale which measured the likelihood that an individual would attribute reinforcements to chance rather than to oneself. James (1957) found a significant correlation between the revised Phares Scale, now the James-Phares Scale, and the California F Scale. Both the California F and the James-Phares measured how subjects view the world as containing powerful others that they cannot influence. Since the James-Phares Scale, many new scales measuring locus of control have been developed. Most notably and widely used is the Rotter Internal-External Control Scale (I-E Scale; Rotter, 1966).

A review of the literature indicates that the I-E Scale has

been used in a wide variety of settings. The present discussion of its use will contain references to counseling for and modification of control, physiological elements in locus of control, classroom uses of the locus of control construct and characteristics of internal and external personality types.

#### Research in Locus of Control

To determine the effects of a T-group experience, Lewis and Dawes (1975) measure I-E in a two experimental, one control group design. Comparisons showed a decrease in the belief in external control by the experimentals while the control group increased in externality. The authors hypothesize that external individuals are the least likely to engage in experiences which might change locus of control. Majumder, Greever, Holt and Friedland (1975) investigated whether specific counseling techniques which were designed to cause attitudinal change in an internal direction would affect high school students. Two groups were used, one receiving a group discussion placebo, both in a six week daily summer program. Results indicated that the I-E counseling group was changed significantly toward internality while the control group made no changes.

Dua (1970) made use of a two experimental, one control group design to test the effects of a behaviorally oriented action treatment program and psychotherapy reeducation on a group of university freshmen females. These coeds had sought counseling assistance in dealing with their inability to relate in interper-

sonal situations. The purpose of the study was to measure the change reflected in self-ratings of internal-external locus of control in addition to measures of emotionality and social extraversion. Results indicate that both experimental treatments produced significant changes at the .01 level for emotionality and at the .05 level for change in the direction of extraversion. Only the behaviorally oriented action treatment created movement toward internality and it did so at the .01 level. Controls made no movement on any measurement. The authors report that the study ". . . presents a strong case for more experimentation in behavioral counseling techniques and supports the basic premise . . . that change in client behavior often produces a clear modification of client feelings and attitudes . . ." (p. 571).

Foulds (1971) investigated the effects of personal growth groups on locus of control in college students. Eight weekly, four and one-half hour sessions were given to the experimental groups of 30 undergraduates with a paired control group. Internally directed change was hypothesized. Results supported that hypothesis and suggested that group counseling is an effective method for altering generalized locus of control in the internal direction. In another group intervention, Moser (1975) used three groups of eight external incarcerated adolescent subjects. He treated all matched groups with an exploration, confrontation, reeducation treatment approach. This treatment was didactic in nature as opposed to the Lewis and Dawes T-group and Fould's per-

sonal growth group investigations. Results indicate that external subjects who are adolescent felons can be moved toward internality with group counseling. The author states that changing the external's perception of himself as controller rather than as a victim of outside forces is important in successful therapy.

Johnson and Croft (1975) studied the effects of a personalized system of instruction (PSI) on the locus of control of college students. These students were able to proceed at their own rate in the study of personality --a psychology course. It was hypothesized that internals would complete the course faster and because the students had control over the duration and procedures of the course, that a movement toward internality would occur. Although Crandall, Katkovsky and Crandall (1965); Crandall, Katkovsky and Preston (1962) and Chance (1965) have found positive relationships between achievement and course performance and internality, Johnson and Croft have cast some doubt upon these findings. The hypothesis that internals would complete the PSI course faster was not borne out; perhaps the nature of the course makes it impossible to compare to other achievement studies since the new format might have a powerful motivational effect at first. A change at the .01 level did occur as expected in the internal direction by a pre-posttest analysis. The authors state that, "This finding suggests that when an individual is exposed to a sequence of situations in which a demonstration of his control is obvious, changes in generalized expectancies occur" (p. 420).

Eisenman (1972) concurs with this opinion by his results of producing change in the internal and external directions by manipulation of the degree of control subjects were given.

Other changes in locus of control have been reported by Croft (1973) who changed mothers being treated in a behaviorally oriented group and Smith (1970) who found that crisis intervention of six sessions was productive while long term psychotherapy produced no such reduction in I-E scores. Diamond and Shapiro (1973) in another group therapy treatment also sought and found internal movement. This group experience was termed encounter therapy.

With the exception of Eisenman (1972) all reviewed material has shown attempts to move locus of control in individuals toward internality. This general trend is most likely a result of findings indicating that internals are more emotionally stable than externals. Rotter (1966), Joe (1971), Hersch and Scheibe (1967), and Lefcourt (1966a) all support internality as being psychologically positive. In his review, Joe (1971) has said that "A linear relationship between internal-external control and adjustment, with externals tending to be more maladjusted than internals, has been suggested" (p. 635). Lefcourt had previously stated that:

Since an internal locus of control may be one prerequisite of competent behavior, and an external-control orientation seems common to many people who do not function in a compe-

tent . . . manner, it would seem that perceived control should have some importance as a goal for psychotherapy.

(p. 191)

The importance given to movement from external to internal perceived control is a product, then, of both theoretical formulations and experimental findings.

The ability to control one's emotions is closely tied with the ability to physically control the body. Burkhead, Travers, and Carlson (1974) as mentioned previously have tied the GSR to the emotional state of a person. In that experiment, skin responses were measured to ascertain the degree of anxiety in the subjects showing that the brain controls that set of physical responses to anxiety. Another controllable sensory state with similarities to GSR is the alpha production in the brain. Alpha is opposite GSR in that increase in alpha is equated with relaxation of the subject. In an investigation of alpha production, Goesling (1974) selected 15 internal and 15 external subjects to receive training in its production. Subjects received instruction in increasing the density of occipital electroencephalogram (EEG) waves at the alpha frequency (8-13 hertz) through auditory feedback emitted when alpha was being produced. While both groups increased the output of alpha, or the relaxation state, the internals were far better able to enhance their density of emitted alpha. Internals were essentially easier to train to relax because they feel control over their physical states. They were

readily convinced that, in reactions of which they were unaware they could control, a method of internal control exists.

In a study to investigate whether individuals with internal control differ from externals in their ability to increase their heart rate (HR), Fotopoulos (1974) incorporated direct thought processes. Feedback and non-feedback conditions strengthened the results of the study. Subjects were asked to speed up their heart by thinking in a way that might cause increase in HR. Internal subjects were able to increase HR with no reinforcing feedback as well as with auditory feedback. Externals, however, were unable to increase HR without reinforcement. That is, externals needed an external source to help them create an internal state.

In other physiologically oriented studies, MacDonald and Hall (1969, 1971) have found that externals find physical disabilities more threatening than do internals. Their original "hypothesis was based on the notion that externals may fear that such disabilities might be viewed negatively by social agents upon whom they depend" (MacDonald, 1971, p. 113). Since internals perceive themselves as being more in control of what happens to them physically, they seem more willing to try to overcome physical impairment. Externals see physical impairment as affecting them much more severely because they cannot readily see means of overcoming the handicap through their own endeavors. A similar concept is discussed by Balch and Ross (1975) in a study of weight reduction programs for obese women. It was found that internal subjects' scores

showed significant correlations with completion and success in the program. They recommend locus of control as a consideration in the type of weight reduction program selected for patients. Internals have better understanding of the role they play in gaining and losing weight whereas externals tend to blame other sources for their inability to reduce.

It would seem from reviewing experimentation that internality is the best locus from which to direct change in behavior from a physiological point of view. Internality does not, however, mandate that the subject has already learned physiological control; it only allows the subject to learn more readily.

#### Characteristics of Internals and Externals

In an authoritative study of I-E as a personality dimension, Hersch and Schiebe (1967) used the California Psychological Inventory (CPI; Gough, 1964) and the Adjective Check List (ACL; Gough & Heilbrun, 1965) among other measures. They found internals to be homogeneous in personality test performance and generally described them as socially adjusted and striving for personal achievement. Subjects were likely to describe themselves as "active, striving, achieving, powerful, independent and effective" (p. 613). Externals, the authors warn, may not be as simply defined as internals. One may perceive himself as externally reinforced if he is:

physically or intellectually weak in relation to those around him. On the other hand, a person may describe himself as an external because he is in a highly competitive social situ-

ation, where the actions of others may have great relevance for the success of his own efforts. (p. 613)

Both the situations described are realistic reasons for external orientations yet they do not represent homogeneity. A stronger definition of externality would allow more precise measurement of the trait. The diffuse nature of externality would imply further study by those attempting to manipulate only external populations with a particular treatment.

Joe (1971) depicts externals as "being relatively anxious, aggressive, dogmatic, and less trustful and more suspicious of others, lacking in self-confidence and insight, having low needs for social approval and having a greater tendency to use sensitizing modes of defenses" (p. 623).

. . . internals not only will show more initiative and effort in controlling their environment but also can control their own impulses better than externals . . . . it appears safe to conclude that internals, in contrast to externals, would show a greater tendency to seek information and adopt behavior patterns which facilitate personal control over their environments. (p. 627)

Lefcourt (1966a) is more general in his description of I-E characteristics. He sees internals as being able to learn to behave in more ways which would facilitate more control than externals. In a discussion of deviant behavior, he sees internality as a stabilizing force. He explains, "This is not to say that

locus of control provides a singular, simple, causal explanation for incompetence. Rather, locus of control may be one of several necessary correlates of competence" (p. 191).

Because of the diversity of descriptions of internal and external control prototypes, most authors use the previously assigned characterizations (Rotter, 1966) as a starting point of experimentation. Most studies have clearly shown that the theoretical basis for Rotter's original formulations are correct.

#### Locus of Control and Rational Theory

The precursors of rational theory are much older than those of locus of control. As has been shown, the roots of rational theory appear around 400 B.C. in Greece. Locus of control, while a newer construct, does have direct relationship with modern rational theory. Veblen, in his Theory of the Leisure Class (1899), pointed out that the irrational belief in fate, chance or luck, represented a barbarian approach to life that was generally associated with inefficient societies. Veblen's discussion implies that belief in luck or fate as a solution to one's problems is characterized by small productivity and hence bears resemblance to Rotter's theory that a belief in external control is related to general passivity (Washburne, 1962). Veblen saw belief in external control as a malady within a society. Veblen had no part, however, in the formulation of psychological theories. It was Adler, who in the beginning of the Twentieth Century set forth theoretical concepts of psychology that are now given credit for starting

a great variety of neo-Freudian and neo-Adlerian schools of thought. Both Rotter (1954; Lefcourt, 1966a, 1966b) and Ellis (1962, 1971, 1973, 1974) rightfully give credit to Adler for his contributions to their work.

Rotter sees man's ability to gain and maintain control or mastery over his immediate environment as a prime function in his personality structure:

The theorist who has most extensively written about the overcoming of helplessness and development of mastery is Alfred Adler . . . . Adler's concept of "striving for superiority" is posited as a universal, basic motive deriving from man's inherent, initial inferiority . . . . Adler's concern was for man's becoming more effective in controlling his personal world. (Lefcourt, 1966a, p. 206)

Rotter relates this statement of Adler's belief to his own theory of the purpose of therapy. He says, "It is the purpose of therapy not to solve all of the patient's problems, but rather to increase the patient's ability to solve his own problems" (Rotter, 1954, p. 342). In other words, Rotter sees therapy, like Maultsby (1975) and Ellis (1963, 1973) as a way of giving the client a tool to have some control over his life.

Adler emphasizes the instrumentality of "the strength of contingency between acts and their effects" (Lefcourt, 1966a, p. 206). Ellis sees this contingency as B, the intervening belief system, while Rotter sees the contingency as the perception

of the individual regarding how much he can control the effect of an act. To combine terms of the three men, a person who irrationally thinks that external people and objects create his feeling state (Ellis) does not have a generalized expectancy of reinforcement under his control; that is, he is externally controlled (Rotter). Adler would term this person as suffering from inferiority feelings.

Mowrer, like Adler, is mentioned in both RET and I-E theoretical formulations and is probably the most influential of the behaviorists upon both theories. Early research by Mowrer and Viek (1948) was done with rats. They concluded that an uncontrollable, painful stimulus arouses an apprehension that the stimulus might last, recur, or get worse. If the stimulus (shock in this case) could be controlled by the rats, little or no apprehension was evidenced. Mowrer labeled the apprehension of uncontrolled pain, fear from a sense of helplessness. He connected the expectancy of reinforcement idea with the intervening process of thought or learned habitual response that occurs between a stimulus and a response. Rotter (1954) describes Mowrer's problem-solving behavior as a :

two factor theory, conditioned responses learned on the basis of contiguity give rise to anxiety when frustrated or blocked, whereupon new behaviors are learned in order to reduce anxiety. Conditioning then is based on contiguity and problem solving based upon reduction of anxiety. (p. 235)

Mowrer sees that once habit formation is complete little or no mediation occurs between stimulus and response (contiguity is in effect); yet when the response does not occur as usual, anxiety occurs and the organism then has to learn a new habit. Again Rotter's expectancy model and Ellis' (or Hull's) intervening organism are both similar in description. Hull is also credited in both RET and I-E theory and for contributing behavioral formulae for later modification. Hull (1943) has shown habit strength as a "similar principle" (Rotter, 1954, p. 176) to control expectancy.

Other theorists who have influenced the theories being discussed more tangentially include Kurt Lewin, Karen Horney, Jerome Frank, Sigmund Freud, George Kelly, John Dollard and Neal Miller. It should be noted that, although Rotter and Ellis were engaged in creating their psychological constructs at about the same time and both drew from many of the same pre-existing theories, neither credits the other for any influence.

RET, the treatment medium of the study to follow, and locus of control, the primary measurement construct, are suited both pragmatically and theoretically to be involved in the same investigation. The lack of comprehensive exploration into the effects of RET upon I-E control expectancies as seen in the paucity of I-E testing reported in the RET review gives further impetus for the study at hand.

#### The Watson-Glaser Critical Thinking Appraisal

Rationale behind use of the Watson-Glaser Critical Thinking

Appraisal (CTA) in the present investigation is straightforward. Since the treatment procedure of RSC is didactic and academic in nature, measure of the relative abilities of the subjects is necessary to account for differences in capabilities for learning the important concepts of the course. The CTA provides the needed pretest determination of academic abilities on one hand while a posttest enables further study of the effects of treatment. The last section of the CTA, Evaluation of Arguments, is to be used as a measurement of the effectiveness of RSC in teaching subjects to argue their irrational beliefs. Review of the literature shows that pretest CTAs have been used as covariants before but the Evaluation of Arguments subsection has never been used as a specific measure of gain. Review of the CTA will be contained to the areas of intelligence and achievement, the use of subtests, and treatments resulting in change scores on the CTA.

Watson and Glaser (1964) have shown relatively high relationships between the CTA and measures of intelligence. The verbal scale of the Wechsler Adult Intelligence Scale as well as the Miller Analogies Test show a correlation of .55 with the CTA form Am (the Am has been revised). The California Test of Mental Maturity language test correlates .70 with the CTA while the Otis Quick Scoring Mental Ability Tests:Gamma correlated with the CTA at .75 in a study involving over 20,000 high school students (p. 11). Watson and Glaser, however, do not wish the test to be in extremely high correlation with intelligence. They say that:

the median coefficient of .68 is evidence of the substantial relationship existing between critical thinking ability as measured by the Critical Thinking Appraisal and mental ability measured by conventional intelligence tests. It appears therefore, that a high level of "intelligence" as measured by conventional tests may be necessary, but not sufficient for high attainment in critical thinking. (p. 10)

While the correlation with intelligence exists, the authors posit that other combinations of factors enter into critical thinking that are not measured by intelligence tests. Essentially, elevated scores on the CTA are predictive of elevated intelligence scores; however, since different faculties are used in critical thinking, elevated intelligence scores are no guarantee that the subject possesses high critical thinking abilities.

Closely aligned with intelligence is the concept of achievement. The test manual (Watson & Glaser, 1964) reports correlations of .54 verbal and .43 mathematics between the CTA and the College Entrance Examination Board scores of freshmen in a western liberal arts college. The manual reports these correlations but fails to discuss implications of the relationship. In a correlational study of non-standardized testing, Kooker (1971) compared the examination scores of students in a graduate statistics class with scores on the Miller Analogies Test (MAT) and the CTA. A nonsignificant  $r$  of .21 was found between the MAT and the course examination but the CTA compared to the same examination

produced an  $r$  of .37 significant at the .01 level. Correlational studies of the CTA with standardized achievement are rare, but the use of the test to measure course effectiveness is commonplace.

T.C. Smith (1971) used the CTA and two science evaluations to determine effectiveness of three different high school physics curricula. All three curricula in this case were effective in increasing scores on all criteria measures. A. N. Smith (1971) had converse findings in a similar experiment. He found two instructional methods in biology to be equally weak methods for raising CTA scores in a pre-posttest design. Students' scores were not significantly different when posttests were compared to pretests.

Investigations into the use of classroom treatment to change critical thinking have concentrated heavily around the hard sciences. In an effort to prove the efficacy of science beyond the dissemination of scientific facts, many curricula have been studied. Allison (1972) found college chemistry laboratories effective in increasing critical thinking while Troxel (1968) showed that Chemical Education Materials Study (CHEMS) and the Chemical Bond Approach (CBA) were superior curricula to traditional chemistry. CHEMS and CBA showed significant differences from traditional chemistry in subject matter exams as well as critical thinking scores. Cossman (1967), Shirner (1967), Duckworth (1968), Constantine (1968), and Schafer (1974) have all shown science curricula to be effective in increasing critical thinking abilities. In all studies reviewed above, the total score of the CTA was

used as a measurement criterion. Partial scores or subtest scores are less frequently used.

Watson and Glaser (1964) do not encourage the use of part-scores to evaluate individuals because of the relatively small number of items in the five subtests. They state though that "It is feasible, however, to utilize these part-scores to analyze the critical thinking abilities of a class or larger group . . ." (p. 9). In like manner Rust and Kaiser (1962) in the most authoritative factor analytic study of critical thinking to date, have made mention of the appropriateness of using part-scores:

If the makers in their a priori reasoning regarding grouping of items are correct, then a score on a subtest provides more reliable evidence of a subject's ability to do a certain kind of reasoning than does a score on an individual test item. (p. 254)

They go on to say that part-scores are acceptable in research with group scores.

Luck and Gruner (1970) used part-scores to determine whether authoritarianism as measured by the California F Scale is related to critical thinking. The total score on the CTS was negatively correlated at the .01 level and part-score analysis showed that authoritarianism most affects ability to determine whether conclusions logically follow from given information (subtest three); least affected by authoritarianism was the ability to recognize assumptions (subtest two).

The CTA has the empirical and theoretical basis for use in determining the level of critical thinking prevailing in groups of subjects. This facility is useful in enhancing the study of academic courses. While controlling for intelligence in some respects, the CTA also provides for additional control of learning abilities.

#### Summary

Rational theory has a wealth of ancient and recent philosophic precursors. Ellis and others have credited the Stoics as well as recent philosophers for laying the groundwork for studies in RET. Its tenets are simple and enduring. RSC, Maultsby's method of teaching subjects the use of RET on themselves, has proven to be an effective way for students to change their behavior.

The construct of locus of control, while a new theory historically, is widely studied as a personality variable. The variety of studies it has encompassed is not feasible to discuss in this review, nor would they all be relevant, but the scope and magnitude of data available imply that the construct is important to the study of personality. Locus of control has relativity to RET; the theorists most associated with RET and locus of control, Ellis and Rotter respectively, give credit to many common influences in philosophy and psychology, both men and theories. Studies of RET have previously incorporated locus of control measures, with experimenters assuming theoretical connection. No study has

directly dealt, however, with investigation of the amount of change RET can effect in locus of control using appropriate covariant analysis.

The CTA is an instrument measuring a construct, critical thinking ability, valuable in learning. The majority of experimentation with critical thinking has been to test course effectiveness on one hand and to develop courses effective at enhancing critical thinking on the other. A review of research shows that the test is useful as a covariant and as measure of change using whole or part-test scores. This strength of using a test to covary for one dependent measure and later to become a dependent measure itself after posttesting provides for a unique testing arrangement.

## Chapter 3

### Methodology

The purpose of this investigation was to examine the effects of a treatment course in Rational Self-Counseling (RSC) upon the internal-external locus of control of reinforcement (I-E) and critical thinking ability of subjects receiving treatment. This chapter will present the research methods that were used in the investigation. The chapter is organized to include the following: (a) populations, (b) research design, (c) treatment procedures, (d) measurement instruments, and (e) data analysis.

#### Populations

Subjects for this study were 20 volunteers from each of three populations making up a total experimental group of 60 subjects (N). The first population included pupil personnel workers in the City School System of Hampton, Virginia. These 20 subjects included counselors and visiting teacher/counselors, all of whom possessed master's degrees in counseling related fields and/or state certification for their positions based upon post baccalaureate course work. The median age of subjects was 39 with a moderate deviation in ages between subjects. Participants included 17 females and 3 males.

The second population was made up of teachers and counselors in the City School System of Newport News, Virginia. All subjects held teaching certification, but unlike the first group, this group included only 10 pupil personnel workers. The median age

of subjects in this group was 35.5. Again, there was low age deviation and the sex make-up of the group was 18 females and two males.

The third group was drawn from volunteer telephone counselors from Contact Peninsula, a telephone crisis counseling center serving the communities of Hampton and Newport News, Virginia as well as York County, Virginia. Volunteers in the organization exceed 200 and they make the service available on a 24 hour basis by use of a systematized scheduling system. Volunteers come from a wide range of occupations and receive extensive inservice counseling training. They also are strongly encouraged to continue counseling and psychological help systems training by taking courses offered in the area. The median age of the Contact workers taking the RSC treatment course was 40 with greater deviation than the first two groups but not enough to warrant the use of age as a covariant in the statistical design. This group was comprised of 18 females and two male participants.

The geographic location for the population is a peninsula bordered by the York and James rivers on the north and south respectively and the lower Chesapeake Bay to the east. Newport News and Hampton are adjacent cities with little difference in population size and make-up.

The population was obtained for the study by introducing the course as a prospective inservice project to the directors of guidance in Hampton and Newport News and the director of Contact

Peninsula. All three directors solicited volunteers for the course through verbal and written memoranda. Prospective subjects met for an introduction to the experimenter and course content before deciding to take the entire course. The course was registered with the State Department of Education and was given creditation to award one Continuing Education Unit (CEU) to each participant. CEUs may be used in Virginia for teacher certification renewal but no college credit is awarded.

#### Research Design

This study used a simple pretest-posttest design on three experimental groups with no control group.

Yb    X    Ya    (Experimental)

Yb    X    Ya    (Experimental)

Yb    X    Ya    (Experimental)

Necessity for such a design stemmed from two existing conditions. Randomization was impractical since the course was offered for CEU credit and could not be repeated for eliminated subjects the same school year. It would also have reduced the N of group sizes to nonparametric levels. The second condition resulted from the proportion of subjects from one population, Hampton Counselors, being too large to have a control group of equal size from the remaining counselors not taking the course. Since the treatment groups were from different populations and were treated at different times of the day and week, the experimenter kept the data for each group separate although no hypoth-

esis of differences between groups in their reaction to treatment was made.

Statistical procedures regarding measurement of subjects for later covariance were introduced to strengthen the design. In addition, an hypothesis was included to examine, more closely than most reported I-E studies, the effects of treatment upon internal subjects.

#### Treatment Procedures

After the populations were obtained, the subjects were given testing and treatment in a uniform manner. This section will describe the treatment method used.

After an introduction to RSC on the first class meeting, the subjects were given seven, two hour sessions once a week. Treatment included discussion of required readings in Help Yourself to Happiness (Maultsby, 1975), which is an introduction to rational self-counseling (RSC) with discussion oriented questions at the end of each chapter. Class assignments included chapters one through 10 with other reading encouraged. Also included were weekly lectures reinforcing the text material and relating the principles of RSC to the professional roles of the subjects.

The subjects listened to eight tape recordings of Dr. Maxie C. Maultsby, Jr. counseling with patients at the University of Kentucky Medical Center Psychiatric Outpatient Department. Each tape included some repetition of important concepts already discussed as well as new information to be later discussed in class.

The experimenter reinforced the tapes with outlines for note taking and objective self quizzes (Maultsby, 1974, Appendix I) developed to stimulate thought and discussion of the tapes. An important feature of the tapes was the wide variety of patients and problems discussed on the tapes.

The most important part of the treatment was encouraging the subjects to use RSC in their daily lives and to bring to class for discussion written rational self analyses (RSA) of some emotional upset they wished to eliminate. The RSAs were handed in and the experimenter critiqued each one extensively so the subjects would learn the rules for self-counseling. The class was also asked to critique, in group situations, the RSAs of classmates. Only volunteers presented their homework for class discussion.

The three groups received the same treatment with the noted exception of time of day and week. The tapes were used in the same sequence in each class and the experimenter made note of questions asked in each class to be sure that the same material was covered for each group. The tapes, ranging from 15 to 36 minutes in length, provided a basis for exactly the same presentation being given to each group. Chance variations in the courses probably existed but were considered minimal by the experimenter.

To summarize treatment, the subjects received the following:  
(a) the assignment of 10 chapters of Help Yourself to Happiness (Maultsby, 1975), (b) tape recordings of Maultsby counseling with

RSC techniques, (c) lectures about RSC, (d) homework of written RSAs, and (e) experiential participation in critiquing RSAs.

#### Measurement Instruments

The instruments used as criterion and covariate measures were chosen to ascertain whether the RSC treatment affects locus of control and a part of critical thinking. They will be discussed as follows: (a) the I-E Scale, (b) the CTA, and (c) the course evaluation test.

#### The I-E Scale

The I-E Scale (Rotter, 1966) is a 29 item, forced choice test. Subjects are asked to choose between two statements in each item which express a common attitude. Six filler items were included to help make the test's purpose more ambiguous (Appendix A). The 23 scored items determine the subjects' locus of control measured on a continuum from zero to 23 with low scores indicating internality and high scores, externality. When groups are tested, the researchers usually divide the group at its mean or by median split to obtain a high and low group.

Internal consistency is stable but only moderately high for a scale of this length. It should be remembered that the items are not arranged in a difficulty hierarchy, but rather are samples of attitudes in a wide variety of situations. The test is an additive one and items are not comparable. Consequently, split-half or matched-half reliability tends to underestimate the internal consistency. (p. 10)

Split-half reliabilities (N=50) were .65 while Kuder-Richardson reliabilities were .69, .70, and .70 on populations ranging from 50 to 1000 (Rotter, 1966).

Test-retest reliabilities are termed "consistent and acceptable, varying between .49 and .83 for varying samples and intervening time periods," by Hersch and Scheibe (1967). At one month intervals reliabilities were reported from .60 to .78. Two months intervals were confounded by a change to individual testing and are suspect. Males and females combined in this group yielded a moderate  $r$  of .55.

Correlations with the Marlowe-Crowne Social Desirability Scale were all moderately negative indicating that responses to the items are not a function of choosing socially acceptable answers. Biserial correlations between total score and individual items, with the comparison item removed from the total for each correlation, are moderate but consistent (Rotter, 1966). Correlations range from .18 to .32 with most coefficients around .25.

The lack of high test-retest correlation is a caveat for regression toward the mean (Campbell & Stanley, 1963). Because of this, external scores would tend to drop without treatment and internal scores would tend to rise. This possibility was noted in the formulation of Hypotheses 1, 2 and 3. Hypothesis 1 includes both high and low scores to counteract regression; since low scores should regress in the external direction and high scores in the internal direction, the regression effect is mod-

erated. Hypothesis 2 is tested at the .01 level to make requirements for significance more stringent. Hypothesis 3 predicts change in the direction opposite to the regression toward the mean. This possible regression is used as a hedge against a high Beta, or the Type II error of accepting an untrue condition.

#### The Watson-Glaser Critical Thinking Appraisal

The second measure produces both a criterion variable and a covariant measure.

The CTA form Ym, referred to in this study as the CTA, since this was the only form used, has an odd-even split-half reliability corrected by the Spearman-Brown formula of .86 for high school students (N=10,114) and .85 for college freshmen and seniors (N=5,297, and 200 respectively). Split-half reliabilities for the five subscales of the test--inference, recognition of assumptions, deduction interpretation and evaluation of arguments--range between .54 and .74. The Evaluation of Arguments subscale has a reliability coefficient of .62.

While the I-E scale was chosen specifically to test one variable, locus of control, the CTA had a more complex purpose. First, it covaried for critical thinking ability and ability to learn factual information, since it correlates with intelligence and achievement as mentioned in Chapter 2. This covariance was deemed necessary considering the didactic nature of RSC. In addition: to the CTA being used as a covariant, the test also measured change in evaluating arguments by using it as a posttest

measure. The last 15 items of the CTA--Evaluation of Arguments-- were used as the criterion measure in Hypothesis 4.

Moderately low subtest correlations "ranging from .21 to .50, support the contention that relatively distinctive abilities are being measured with sufficient overlap to warrant their inclusion in one total score" (Watson & Glaser, 1964, p. 14). This supports the authors' claim that there is construct validity in the CTA. They state that in "situations where the psychological concepts and assumptions of critical thinking are being investigated, the construct validity of the Appraisal [CTA] would be . . . appropriate to consider" (p. 14).

The CTA, then, provided a unique instrument that could be used as a covariant with theoretical bases. In addition, the test could be given as a posttest and part scores, Evaluation of Arguments in this case, could be compared by analysis of variance.

#### The Course Evaluation Test

The course evaluation test (Appendix B) is an information test derived from three important parts of treatment. There are 20 items on the test, 10 true-false and 10 fill in the blank. Three questions are derived solely from the text and were never mentioned in treatment, three questions were taken from the Maultsby tape interviews alone, three items came from lecture material only, and the remaining 11 items were covered by text, tape and lecture.

The test was constructed by the experimenter to use as a co-

variant in the experimental design. Since the course is didactic to a great extent, the amount of knowledge learned about RSC was considered an important variable in testing treatment effects.

The test is scored on a one to 20 scale with one point allotted for each correct response. The test is keyed allowing for a slight variation in responses to fill in the blank items. Missing items are given no credit.

### Data Analysis

#### Data Collection

In the first class meeting each subject was given the I-E Scale (Rotter, 1966) before any factual information was presented by the experimenter. The subjects were given a cursory overview of what the course would entail and asked to complete the Watson-Glaser Critical Thinking Appraisal, form Ym (CTA; Watson & Glaser, 1964) at home before the first full class meeting. The tests were given according to their standard directions. At the last class meeting the subjects were given the two pretests as posttests in addition to a course evaluation test. Subjects were encouraged to use their own names on the testing; however, those not wishing to use their names were asked to provide the first three and last four digits of their Social Security number for identification.

All three tests were scored by hand using overlay keys. Test scores and group identification information was punched on computer cards and processed by an IBM 370/145 computer at the

Southeast Virginia Regional Computer Center located at the College of William and Mary.

### Statistical Analysis

Statistical treatment of each hypothesis will follow:

Hypothesis 1. Subjects receiving the treatment course in RSC will show significant movement in the internal direction on I-E Scale scores.

To test for statistical difference between pretest and posttest measures, repeated measures analysis of covariance was used. Covariants included pretest CTA scores and course evaluation test scores. Repeated measures analysis was used for two reasons. First, it is commonly used when a pretest-posttest design is in operation with more than one group being treated. Second, it is more powerful than the  $t$  or  $F$  test for variance because it extracts a portion of variation within trials, that is, each subject is being matched against his own pretest score. Because subjects are matched against themselves, a correlation between the sets of scores, pre and post, is produced. Klugh (1970) explains that:

Just as the presence of correlation makes the matched pair  $t$  test more powerful than the independent groups  $t$  test, it also makes the repeated measures analysis of variance more powerful than the analysis for independent groups. (p. 268)

By using repeated measures [pretest-posttest] on the same subjects we are able to extract a . . . measure of the

consistency of individual differences in response to the task; in short, it is a measure of correlation. This correlation, as in the matched pairs  $t$  test, permits a reduction in the error term, and a more powerful test of significance results. (p. 269)

The repeated measures analysis in short eliminates some error variance and allows a closer look at the significance of change created by the treatment on the criterion measure.

Hypothesis 2. External subjects receiving the treatment course in RSC will show significant movement in the internal direction on I-E Scale scores.

External subjects will be determined by classifying all subjects above the pretest experimental group mean on the I-E Scale as externals. Those below the mean will be classified as internals. The test scores of these subjects will be treated by repeated measures analysis of covariance to determine significance of movement toward internality. Pretest CTA scores and course evaluation test scores will act as covariants.

Hypothesis 3. Internal subjects receiving the treatment course in RSC will show significant movement in the internal direction on I-E Scale scores.

This hypothesis was made as a predictor of the strength of RSC as a treatment across the variable of locus of control. To test whether internals would be made more internal, the repeated measures analysis of covariance is again utilized with pretest

CTA scores and course evaluation tests used as covariants.

Hypothesis 4. Subjects receiving the treatment course in RSC will show a significant increase in scores on the CTA, subtest--Evaluation of Arguments.

To determine change in CTA, subtest--Evaluation of Arguments scores, repeated measures analysis of variance is used. Change in either direction will be noted by this method.

Hypothesis 5. There will be a relationship between pretest CTA scores and course evaluation test scores of RSC treated subjects.

To test this hypothesis, Pearson product-moment correlation test was the method selected. Positive coefficients would indicate that some relationship exists between critical thinking ability and the amount of factual information retained about the course.

Hypothesis 6. A negative relationship will occur between pretest I-E Scale scores and pretest CTA scores.

The Pearson product-moment correlation test was used to determine if the I-E score were related to CTA scores on pretest measures. A negative coefficient would indicate that higher scores on critical thinking would indicate the likelihood of lower scores, internal scores, on the I-E Scale.

Hypothesis 1 through 4 are repeated measure designs. Repeated measures analyses of variance and covariance were performed by subprogram MANBIG of the multivariate analysis of variance

program, MANOVA. MANBIG expands the number of cells permitted in analysis from 100 to 400 thus allowing for up to 200 subjects as opposed to MANOVA's 50 subjects. Since each subject score must be placed in an individual cell, the N of 60 in this investigation called for 120 cells, 60 pretest scores and 60 posttest scores. An additional benefit of placing individual subjects in cells is that of the elimination of within cell variance from the error term.

Hypothesis 5 and 6 are relationship predictions indicating the use of correlation analysis. Subprogram PEARSON CORR of the Statistical Package for the Social Sciences (SPSS; Nu, Hull, Jenkins, Steinbrenner, and Bent, 1975) was used to determine whether correlations existed between pretest CTA scores and course evaluation scores and if CTA pretest scores and I-E Scale pretest scores had negative correlations.

Since the three groups were treated separately, a between group analysis of variance was added to the MANBIG program to determine equality of groups. Frequency and descriptive data were obtained from subprogram FREQUENCIES of SPSS.

All hypotheses were tested at the .05 level except Hypothesis 2 which was tested at the .01 level. This stronger requirement was deemed necessary since retest scores on the I-E Scale appear to drop in the hypothesized direction (Rotter, 1966).

## Chapter 4

### Results

The results of this investigation are presented in this chapter by hypothesis. Statistical findings will be reviewed and interpreted for each hypothesis, but redundant procedural explanation will be avoided for similar hypotheses.

#### Hypothesis 1

Subjects receiving the treatment course in RSC will show significant movement in the internal direction on I-E Scale scores.

Repeated measures analysis of covariance resulted in a significant  $F$  value ( $F[1,55] = 65.368, p < .001$ ) indicating change in I-E scores of subjects treated ( $N = 60$ ) in the internal direction. I-E scores are treated as repeated measures in a pretest-posttest mode with a decrease in scores indicating movement in the internal direction. The significance of the  $F$  value for Hypothesis 1 was beyond the .001 level; consequently, the hypothesis was accepted at the .05 level. In this statistical procedure the regression toward the mean effect should not have had an impact upon results because 27 subjects (45%) would have been moving against the hypothesized direction of change. Table 1 shows  $F$  values for Hypothesis 1.

In addition to  $F$  values for the main effect of treatment, Table 1 also includes the Beta values for the covariant measures. CTA pretest scores were covaried for because the course was didactic and ability to think critically might affect learning the

Table 1  
 Hypothesis 1--Repeated Measures Analysis of Covariance for  
 Pretest-Posttest I-E Scores, Covarying for  
 Pretest CTA and Course Evaluation  
 Test Scores

Source of variance	Sum of squares	Degree of freedom	Mean square	<u>F</u>	Significance level
Regression <sup>a</sup>	17.481	2	8.746	2.397	.100
Within	200.583	55	3.647		
Between <sup>b</sup>	238.396	1	238.396	65.368	.001
Interaction	0.843	2	0.421	0.116	.891

  

Raw regression coefficients	Beta values
CTA pretest	-.041
Course evaluation Test	-.046

<sup>a</sup> Amount of variance removed by covariates.  
<sup>b</sup> Main effects of treatment.

course concepts. CTA scores produced a Beta coefficient of  $-.041$ , indicating that a negligible adjustment had to be made for those scores before I-E changes were determined to investigate criterion measure variance.

In a like manner the course evaluation test was thought to be a necessary control for participants' knowledge. The test measured factual knowledge level after treatment so that covarying for scores would adjust variation attributed to different degrees of learning the course content. Subjects not meeting course requirements would be predicted by the regression adjustment of preliminary covariance to be less affected by treatment. Such was not the case, however, and a Beta coefficient of  $-.046$  was produced. The combined amount of variance accounted for by the covariant measures was not significant ( $F[2,55] = 2.397, p < .100$ ). While the selection of covariants in this case was of no consequence to the study, the hypothesis was confirmed beyond the .05 level.

### Hypothesis 2

External subjects receiving the treatment course in RSC will show significant movement in the internal direction on I-E Scale scores.

This hypothesis again dealt with I-E change but in this analysis only those scores for externals who were above the mean of 8.95 were tested. External subjects ( $N = 33$ ) were studied to determine if their I-E scores would decrease significantly.

Repeated measures analysis of covariance resulted in the inference of definite change in the hypothesized direction,  $F(1, 28) = 36.234$ ,  $p < .001$  (Table 2). Covariants, CTA and course evaluation tests, had regression Betas of  $-.083$  and  $.020$  respectively, adding no advantage for covarying ( $F[2,28] = 2.545$ ,  $p < .096$ ). It should be noted that since Hypothesis 1 was accepted that Hypothesis 2 was a foregone conclusion setting the stage for testing the low I-E group in Hypothesis 3. Movement of I-E among the external subjects toward internality was confirmed. Hypothesis 2 was accepted at the .01 level.

### Hypothesis 3

Internal subjects receiving the treatment course in RSC will show significant movement in the internal direction on I-E Scale scores.

I-E scores will decrease among internal subjects. Scores below 8.95 were considered to be internal and 27 subjects fell into this category. Since a test-retest correlation coefficient of .55 was reported by Rotter (1966), a strong possibility of regression to the mean was indicated. This hypothesis could distinguish treatment effects from regression to the mean by predicting that treatment effects will move the internals' I-E scores away from the mean; that is, in the opposite direction from regression.

Repeated measures analysis of covariance resulted in a strong statement of treatment efficacy. Table 3 indicates that the  $F$

Table 2  
 Hypothesis 2--Repeated Measures Analysis of Covariance for  
 Pretest-Posttest I-E Scores, Covarying for Pretest  
 CTA and Course Evaluation Test Scores for  
 External Subjects

Source of variance	Sum of squares	Degree of freedom	Mean square	<u>F</u>	Significance level
Regression <sup>a</sup>	38.797	2	19.398	2.545	.096
Within	213.381	28	7.621		
Between <sup>b</sup>	276.127	1	276.127	36.234	.001
Interaction	5.182	2	2.591	0.304	.715
Raw regression coefficients		Beta values			
CTA pretest		-.083			
Course evaluation Test		.020			

<sup>a</sup> Amount of variation removed by covariates.  
<sup>b</sup> Main effects.

Table 3  
 Hypothesis 3--Repeated Measures Analysis of Covariance for  
 Pretest-Posttest I-E Scores, Covarying for Pretest  
 CTA and Course Evaluation Test Scores for  
 Internal Subjects

Source of variance	Sum of squares	Degree of freedom	Mean square	F	Significance level
Regression	11.074	2	5.537	2.678	.091
Within	45.481	2	2.067		
Between	32.153	1	32.153	15.553	.001
Interaction	12.149	2	6.075	2.938	.074

  

Raw regression coefficients	Beta values
CTA pretest	.035
Course evaluation test	-.237

value for internal subjects' pre-posttest differences was 15.553 (2,22),  $p < .001$ . Covariates, CTA and course evaluation tests showed Beta regression coefficients of .35 and -.237 respectively adding no statistical clarity to the analysis. The combined  $F$  value for the covariants was 2.678,  $p < .091$  showing, in variance terms, a lack of any significant covariant error reduction.

From the statistical results in Table 3, the experimenter can infer that RSC affects I-E scores no matter where they fall on the continuum. RSC changes subjects labeled internals toward more internal scores. With the movement occurring against the natural direction of regression, there is little doubt of treatment efficacy on this variable. Hypothesis 3 is accepted at the .05 level.

#### Hypothesis 4

Subjects receiving the treatment course in RSC will show a significant increase in scores on the CTA, subtest--Evaluation of Arguments.

Repeated measures analysis of variance resulted in finding no noticeable difference between pre-test and posttest scores,  $F(1,57) = .439$   $p < .51$ . This means that the ability to evaluate arguments does not appear to be affected by RSC (Table 4). Hypothesis 4 was rejected at the .05 level.

#### Hypothesis 5

There will be a relationship between pretest CTA scores and course evaluation test scores of RSC treated subjects.

Table 4  
 Hypothesis 4--Repeated Measures Analysis of  
 Variance for Pretest-Posttest Evaluation  
 of Arguments Scores

Source of variance	Sum of squares	Degree of freedom	Mean square	<u>F</u>	Significance level
Within	108.146	57	1.897		
Between <sup>a</sup>	0.883	1	0.833	0.439	.510
Interaction	5.016	2	2.508	1.322	.275

<sup>a</sup>Main effects.

Since CTA scores are related to intelligence and achievement, it would seem likely that high CTA scores would result in subjects learning more factual information about RSC. Pearson product-moment correlations were performed to determine the relationship between these two measures. Because a positive relationship is suggested in the literature, one-tailed tests of significant correlation were used.

A correlation coefficient of .500 was found between CTA pretest scores and course evaluation test scores,  $p < .001$  (Table 5). This shows that critical thinking is a strong influence upon the amount of factual material learned in a course. Hypothesis 5 was accepted at the .05 level.

#### Hypothesis 6

A negative relationship will occur between pretest I-E Scale scores and pretest CTA scores.

Since higher CTA scores were predicted to indicate lower I-E scores, a one-tailed test of correlation was used. The Pearson product-moment correlation coefficient was  $-.085$  ( $p < .259$ ) showing no significant relationship between the two measures (Table 6). This finding substantiates previous Beta values associated with use of CTA scores as a covariant in determining I-E change. Critical thinking is of relatively little use in studying I-E. Hypothesis 6 is rejected at the .05 level.

#### Further Analysis

Since different populations were treated in this investiga-

Table 5  
Hypothesis 5--Pearson Product-moment Correlation  
Between CTA Pretest Scores and Course  
Evaluation Tests

Measures administered	Coefficient of correlation	Significance level
CTA to Course Evaluation Test	.500	.001

Table 6  
Hypothesis 6--Pearson Product-moment Correlation  
Between Pretest CTA and I-E Scores

Measures administered	Coefficient of correlation	Significance level
CTA to I-E	.085	.259

tion, it is necessary to explain the absence of hypotheses concerning group differences. There is no theoretical reason to expect RSC to affect locus of control in these three populations differently. To insure that group differences and interactions of groups with treatment was not a confounding influence, analysis of covariance between groups and interaction effects were incorporated in the three repeated measure analyses for Hypotheses 1, 2, and 3.

Between group variances yield  $F$  values of .336,  $p < .716$  (Table 7) for all subjects; 1.143,  $p < .333$  (Table 8) for external subjects; and .340,  $p < .715$  (Table 9) for internal subjects. This implies that group differences are negligible and not confounding.

Interaction between groups and treatment would not be expected since groups were judged as having relatively no differences. Tables 1, 2, and 3 indicate that there was virtually no interaction working. All subjects together obtained an  $F$  value of .116,  $p < .891$ ; externals had an  $F$  of .340,  $p < .715$ ; and internals'  $F$  value was 2.938,  $p < .074$ . Only internals showed a relationship between treatment and groups but no usable significance was obtained.

Hypothesis 4, not dealing with I-E but with CTA and course evaluation test scores, also showed no differences between groups of subjects,  $F(2,57) = 1.016$ ,  $p < .368$ . Interaction between groups and treatment was also absent,  $F(2,57) = 1.322$ ,  $p < .275$ ; Table 4 depicts these between group and interaction effects for

Table 7  
 Total Subject Variance as Measured by Repeated Measures  
 Analysis of Covariance On the Three Sub-  
 populations--Hampton Counselors, New-  
 port News School Personnel and  
 Contact Volunteer Counselors

Source of variance	Sum of squares	Degree of freedom	Mean square	<u>F</u>	Significance level
Within	1471.016	55	26.746		
Regression <sup>a</sup>	26.420	2	13.210	0.494	.613
Between <sup>b</sup>	17.985	2	8.993	0.336	.716

<sup>a</sup> Amount of variance removed by covariates.

<sup>b</sup> Main effects of treatment.

Table 8

## External Subject Variance as Measured by Repeated Measures

## Analysis of Covariance On the Three Sub-

populations--Hampton Counselors, New-

port News School Personnel and

Contact Volunteer Counselors

Source of variation	Sum of squares	Degree of freedom	Mean square	<u>F</u>	Significance level
Within	290.419	28	10.372		
Regression <sup>a</sup>	16.850	2	8.425	0.812	.454
Between <sup>b</sup>	23.711	2	11.855	1.143	.333

<sup>a</sup> Amount of variance removed by covariates.

<sup>b</sup> Main effects of treatment.

Table 9  
 Internal Subject Variance as Measured by Repeated Measures  
 Analysis of Covariance On the Three Sub-  
 populations--Hampton Counselors, New-  
 port News School Personnel and  
 Contact Volunteer Counselors

Source of variance	Sum of squares	Degree of freedom	Mean square	<u>F</u>	Significance level
Within	162.890	22	7.404		
Regression <sup>a</sup>	25.442	2	12.721	1.718	.203
Between <sup>b</sup>	5.040	2	2.520	0.340	.715

<sup>a</sup> Amount of variance removed by covariates.

<sup>b</sup> Main effects of treatment.

## Chapter 5

### Summary, Conclusions, Limitations and Recommendations

Chapter 5 will provide a summary of the study and interpretation of the results with conclusions and implications according to hypotheses. In addition, limitations of the study will be noted, followed by recommendations for further study.

#### Summary

Self-help systems in psychotherapy have become popular in recent years. Evaluation of the effectiveness of rational self-counseling (RSC) has occurred, but the direct measurement of its effects upon the personality construct internal-external locus of control (I-E) has been overlooked. This study has attempted to measure the effects of RSC upon I-E using three groups of subjects. Counselors and visiting teacher/counselors from the City School System of Hampton, Virginia comprised one group ( $N = 20$ ). The second group was made up of teachers and counselors from the City School System of Newport News, Virginia ( $N = 20$ ). The third group included volunteer telephone counselors from Contact Peninsula, a telephone crisis counseling center ( $N = 20$ ). The three groups, because of no differences between them on criterion measures were combined to form an experimental group of 60.

In addition to research questions concerning I-E, critical thinking was used as a control variable. Also, a part-test of the Watson-Glaser Critical Thinking Appraisal (CTA; 1964), Eval-

uation of Arguments, was used as a criterion measure to ascertain the effect of RSC on this part-test measure. Correlational information was also hypothesized to discover relationships between I-E and critical thinking and between critical thinking and factual knowledge learned in the treatment course.

Subjects were administered the CTA and the I-E Scale as pretest and posttest measures as well as a course evaluation test as a covariant and correlational measure. Treatment consisted of one, two hour class per week for eight weeks during the Spring of 1976. Subjects' treatment included: (a) assignment of 10 chapters of Help Yourself to Happiness (Maultsby, 1975), (b) eight tape recordings of Maultsby counseling with RSC techniques, (c) lectures about RSC, (d) written homework, and (e) experiential participation in class.

Because of lack of suitable numbers of control subjects and difficulty in obtaining experimental subjects, no control group was used. Covariant measures and strict hypotheses were incorporated to offset some of the weaknesses caused by lack of control groups. Randomization was also impossible because the course was being offered for CEU credit and subjects would have been unfairly treated if eliminated, not to mention the fact that the subject number would have been reduced greatly.

Statistical treatment of the data collected consisted of repeated measures analysis of covariance with changes in I-E and Evaluation of Arguments scores in a pretest-posttest design.

Pearson product-moment correlations were performed to determine relationships between critical thinking and I-E, and critical thinking and knowledge acquired in the treatment. Appropriate pretest scores were used as covariants when necessary and all hypotheses were tested at the .05 level except Hypothesis 2 which was tested at the .01 level.

### Conclusions

Conclusions concerning the efficacy of RSC as a treatment will be presented in this section by hypothesis.

#### Hypothesis 1

The research hypothesis that treatment with RSC would cause a significant decrease in I-E scores was accepted. I-E scores were calculated for all subjects both before and after treatment. Values of  $F$  in a repeated measures analysis of covariance showed that change had been effected toward internality at the .001 level of confidence. At this level it is reasonable to conclude that RSC is an effective change agent in moving subjects in the internal direction. Covariant measures accounted for no meaningful variance in this analysis.

Since there was no between group variance on any measure it can be concluded also that the treatment was equally effective upon all three groups. Since the groups were closely matched in age and sex, one cannot conclude that RSC is generalizable to all types of populations although this condition might be true.

#### Hypothesis 2

This hypothesis sought to prove the effectiveness of RSC upon subjects who fell in the external category of I-E measurement. To meet this hypothesis, external subjects had to decrease their scores after treatment, at the .01 level. The terms of the hypothesis were met and it was accepted at the .01 level. Repeated measures analysis of covariance provided statistics showing RSC effective at changing I-E scores of externals toward the internal direction at the .001 level. This enabled the researcher to conclude that RSC is effective in the treatment of external subjects. Appropriate covariance again reduced variance very little.

### Hypothesis 3

Hypothesis 3 explored whether internal subjects would be changed by RSC. Acceptance of this hypothesis meant that I-E scores of subjects who already had relatively low scores must be lowered. This was the most important question asked about the treatment's potential for change for two reasons.

First, regression toward the mean would indicate that internal scores would be regressing to the external direction while effective treatment with RSC would indicate change in the internal direction. Second, internal scores have very little room on the continuum for movement as compared to external scores.

Taken together, movement against regression direction and compressed movement range make Hypothesis 3 a stringent test of the effectiveness of RSC. It was accepted at the .05 level but

reached significance at the .001 level. The researcher concludes that RSC is effective over the entire range of I-E score possibilities in reducing I-E scores. Since counselors and therapists using RSC in individual and group treatment rarely know the locus of control of their clients, it would be to their advantage that RSC be effective over the continuum of I-E scores as found by this study.

#### Hypothesis 4

A part of critical thinking--Evaluation of Arguments--was the topic considered in this hypothesis. RSC was predicted to increase the scores on the Evaluation of Arguments part-test of the CTA with no covariant measures applicable. Repeated measures analysis of variance provided  $F$  values which did not meet the .05 level. No change in Evaluation of Arguments occurred and the hypothesis was rejected. The pretest measures of this variable were so high that the groups had little room for improvement (Appendix E). This part-test had 15 items and the mean score before treatment was 12.2. The instrument appears not to be complete enough to measure variance between subjects and is concluded to be of little use with this type of population.

#### Hypothesis 5

This hypothesis predicted a relationship between pretest CTA scores and course evaluation test scores taken by subjects after treatment. The Pearson product-moment coefficient found between the two measures was significant at the .001 level giving rea-

son to accept the hypothesis. It can be concluded that critical thinking ability is heavily influential in the amount of factual data learned in RSC. This finding, however, stands apart from the study of course effectiveness. The previously reported finding that course evaluation test scores show low Beta coefficients when used as covariants indicates that how much factual data a person learns from the course is not an indication of how his locus of control is affected by treatment. Thus, while it is of interest that persons higher in critical thinking scores learn the course content better, it does not assure the researcher that the subject will change in the personality measure of I-E.

#### Hypothesis 6

Critical thinking ability was postulated to have a negative correlation with I-E in this hypothesis. It was found that a very weak relationship did exist at the .259 level but the only conclusion safely drawn is that low I-E scores are no indication of critical thinking ability. Hypothesis 6 was rejected.

Previous studies of intelligence and achievement have shown weak negative correlations with I-E. Critical thinking has the same relationship and is of no predictive advantage in I-E studies.

#### Limitations

The primary disadvantage associated with the study is the lack of an appropriate control group. Although many of the findings are strong enough to stand alone, control measures would insure that the treatment was as strong as implied by the statistics.

Since this treatment course was offered for CEU credit, control groups would have had to wait for the course. This waiting period was impossible to achieve because of the length of the course and the time of year. Most subjects were school employees and would not be working by the time a second session of the course could be started.

Randomization was also omitted as a statistical control because the size of the experimental group would have to be diminished and again, there was no way to treat subjects who would be asked to take the course later. Control groups and randomization become serious deterrents to research when the size of the experimental group is controlled by the number of subjects volunteering for treatment and the researcher cannot make his own subject selection.

#### Recommendations

In light of the limitations, the first recommendation to further study is that control groups be secured and randomization effected. In addition, it is recommended that a wide variety of populations be given the treatment to insure more generalizability of findings and that instructors of different personality types give the treatment to test that the treatment and not the instructor is the most significant experimental variable.

Two major areas are now implicated for further study. First, since subjects have been successfully treated, a more important factor emerges: the effect that treated subjects, as opposed to

untreated subjects, have upon their clients. While this would be an ambitious undertaking, in a time of counselor accountability it might be worth exploring. Perhaps an easier design would be to treat elementary school teachers and then measure the effects they have upon students, since the elementary student has many hours under the influence of his teacher.

A second area of study is one that was avoided by the researcher; that is, the study of the connection between irrational-rational thinking and internal-external control. At first glance the constructs of irrationality and externality seem compatible; but after this investigation and the personal contact with subjects, this researcher feels that the relationship may be curvilinear or, that the I-E construct may have a complicated superstructure with rationality appearing to strengthen at different points in the continuum.

## Appendix

## Appendix A

### I-E Scale

#### Instructions

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

Your answers to the items on this inventory are to be recorded on a separate answer sheet provided. Print your name and any other information requested by the examiner on the answer sheet, then finish reading these directions. Do not begin until you are told to do so.

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

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

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 flip-

ping a coin.

16. a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.  
b. Getting people to do the right thing depends on ability, luck has little or nothing to do with it.
17. a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.  
b. By taking an active part in political and social affairs the people can control world events.
18. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.  
b. There really is no such thing as "luck."
19. a. One should always be willing to admit 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 on 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 control over the direction my life is taking.
29. a. Most of the time I can't understand why politicians behave the way they do.  
b. In the long run the people are responsible for bad government on a national as well as on a local level.

Answer Sheet I-E Scale

NAME \_\_\_\_\_

COURSE \_\_\_\_\_

	a	b
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		

	a	b
21.		
22.		
23.		
24.		
25.		
26.		
27.		
28.		
29.		

PLACE A CHECK IN THE BOX OPPOSITE  
THE NUMBER OF THE QUESTION YOU ARE  
RESPONDING TO.

## Appendix B

### RSC Course Evaluation Test

Circle true or false

- T. F. 1. It is likely that snakes frighten most people.
- T. F. 2. Attitudes are an integral part of many emotional responses.
- T. F. 3. The camera check is used to determine whether or not the A section of the RSA is factual.
- T. F. 4. Rational Emotive Imagery (REI) is in fact the mental practicing of all the possible things that might go wrong in an upcoming event.
- T. F. 5. It is harder to think rationally than irrationally.
- T. F. 6. The use of the term "have-to" is usually self-reward contingent in most people.
- T. F. 7. RSA's should always be done on paper.
- T. F. 8. You aren't the same as your behavior.
- T. F. 9. An empty, drab apartment can be depression.
- T. F. 10. Maultsby thinks that there is essentially only one kind of counseling.

Fill in the blank with the appropriate word or words

11. Often people are unaware of the thoughts that cause an emotion because the thoughts have become\_\_\_\_\_.
12. The irrational use of the word\_\_\_\_\_is most often the cause of the emotion, anger.
13. \_\_\_\_\_ occurs when a well learned emotional response lingers even after rational thinking is being practiced.
14. \_\_\_\_\_contingent "have-to's" are the type we usually teach to children.
15. \_\_\_\_\_contingent is the type of motivation evident in the following example: "If I want to graduate, I

have to take English."

16. According to Maultsby, which part of the brain is the feeling part? \_\_\_\_\_
17. An RSA has \_\_\_\_\_ (number) sections.
18. According to Maultsby, people who are afraid that they will not be themselves after they have changed their behavior have \_\_\_\_\_.
19. \_\_\_\_\_ is just enough desire to avoid an undesirable event to motivate you to take the most efficient and effective action possible with the least amount of emotional discomfort.
20. In RSA the E section is \_\_\_\_\_.

Appendix C

Frequency Distribution and Descriptive Statistics

For Pretest and Posttest Scores on I-E

I-E Scores	Frequencies:		I-E Scores	Frequencies	
	Pretest	Posttest		Pretest	Posttest
0	0	1	13	2	1
1	1	6	14	1	1
2	3	4	15	1	0
3	1	5	16	1	0
4	5	8	17	2	1
5	5	6	18	0	0
6	6	6	19	0	0
7	1	8	20	1	0
8	5	1	21	0	0
9	2	8	22	0	0
10	10	0	23	0	0
11	11	2			
12	2	2			

	<u>Pretest I-E</u>	<u>Posttest I-E</u>
Mean	8.767	5.883
Median	9.600	5.500
Mode	11.000	4.000
Standard Deviation	4.065	3.618
Variance	16.521	13.088
Range	10.000	17.000

Appendix D  
 Frequency Distribution and Descriptive  
 Statistics for CTA Pretests

CTA Scores	Frequency	CTA Scores	Frequency
54	1	77	3
55	1	78	4
59	1	79	1
62	1	80	2
65	1	82	1
66	1	83	1
67	1	84	4
68	2	85	1
69	3	86	5
70	3	87	3
71	2	88	2
72	2	90	2
73	1	91	1
74	3	92	2
75	2	95	1
76	4		
Mean	77.150		
Median	76.833		
Mode	76.000		
Standard Deviation	9.246		
Variance	85.485		
Range	41.000		

Appendix E

Frequency Distribution and Descriptive Statistics

For Part-test--Evaluation of Arguments

Pretest and Posttest Included

Evaluation of Arguments Scores	Frequencies		Evaluation of Arguments Scores	Frequencies	
	Pre- test	Post test		Pre- test	Post test
5	1	0	11	11	15
6	0	1	12	9	10
7	2	1	13	10	8
8	3	6	14	6	5
9	7	6	15	1	0
10	10	8			

Part-test--Evaluation of Arguments

	Pretest	Posttest
Mean	11.067	10.900
Median	11.137	11.033
Mode	11.000	11.000
Standard Deviation	2.066	1.902
Variance	4.267	3.617
Range	10.000	8.000

Appendix F

Frequency Distribution and Descriptive Statistics

For Course Evaluation Test Scores

Course Evaluation Test Scores	Frequencies	Course Evaluation Test Scores	Frequencies
1	1	11	3
2	0	12	6
3	0	13	6
4	0	14	8
5	1	15	0
6	1	16	4
7	6	17	1
8	2	18	3
9	4	19	0
10	4	20	0
Mean	12.1		
Median	12.833		
Mode	15.000		
Standard Deviation	3.606		
Variance	13.007		
Range	17.000		

Appendix G

Frequency Distributions and Descriptive Statistics

For Age of Subjects

Ages of Subjects	Frequencies <sup>a</sup>	Ages of Subjects	Frequencies
23	1	39	2
24	1	40	3
25	2	42	2
26	1	45	3
27	1	48	1
28	3	49	2
29	2	50	2
30	2	51	1
31	2	52	5
32	1	53	1
33	3	55	4
34	2	58	2
35	5	60	1
37	1	62	1
38	2	68	1

	Age by Group			Totals
	Hampton Counselors	Newport News School Personnel	Contact Volunteers	
Mean	40.700	42.450	39.550	40.900
Median	39.000	35.500	40.000	39.000
Mode	30.000	35.000	52.000	35.000
Standard Deviation	10.613	13.048	10.385	11.282
Variance	112.642	170.260	107.839	127.278
Range	36.000	44.000	32.000	45.000

<sup>a</sup> All groups combined.

Appendix H

Frequency Distributions of Subjects

by Sex

---

---

	Groups			
	Hampton Counselors	Newport News School Personnel	Contact Volunteers	Total
Female	17	18	18	53
Male	3	2	2	7

---

---

## Appendix I

### Outlines and Quizzes for Maultsby Tapes<sup>a</sup>

#### Tape 1

##### "How to Get Rid of Your Depression Rationally, Part I"

In this session, Dr. Maultsby interviews a woman who has tried to kill herself three times in the last three days. She is depressed about her husband who doesn't support her, drinks, and beats her when he gets drunk. She believes that life isn't worth living unless she's married, and since she doesn't want to get divorced, she convinced herself that suicide was the only solution.

Dr. Maultsby's goal is to get her to see that there are other solutions to her problem. But he realizes that she is not likely to see other solutions as long as she is as depressed as she is. Therefore, he first concentrates on getting her to realize that she doesn't have to be depressed and suicidal even though she is in an undesirable situation. He teaches her how her emotions work.

The following are major points in the session. Make notes of important points.

- I. What happens before you experience a feeling?
- II. Three components of an emotion (Anatomy of Complete Emotions)
  - A.
  - B.
  - C.
- III. What does Mrs. Marcie need to know to stop being depressed?

<sup>a</sup> Reprinted in part from RSC course outline material, University of Kentucky Medical Center, Psychiatric Outpatient Clinic with permission from Dr. Maxie C. Maultsby, Jr.

## Objective Questions on Video

"How to Get Rid of Your  
Depression Rationally, Part I"

1. T. F. Mrs. Marcie had nothing to live for.
2. T. F. There was nothing Mrs. Marcie could do to keep her husband from beating her.
3. T. F. The snake would scare Mrs. Marcie if she were to see it.
4. T. F. Your feelings result from what you think and believe about what's happening.
5. T. F. In order to stop being depressed, she first needed to realize she controlled her emotions.
6. T. F. Her husband really made her depressed.
7. T. F. Dr. Maultsby told Mrs. Marcie she ought to leave her husband and get a divorce.
8. T. F. Dr. Maultsby told her she shouldn't be depressed.
9. T. F. Mrs. Marcie's husband would make her happy if he would stop beating her and drinking and start supporting her.
10. T. F. It was true Mrs. Marcie couldn't stand her situation any longer.

## Tape 2

"How to Stop Overreacting by Learning  
Rational Self-Mastery, Part 7"

In her seventh session, Illana demonstrates how quickly you can change your feelings by starting to think rational thoughts. Much of the session is devoted to teaching her to use words rationally. The irrational use of words causes her to end up doing exactly what she doesn't want to do. She is reminded particularly to communicate to herself clearly about "who does what to whom", and shown the importance of an accurate description of what's happening.

During the session, look for the major points listed below. Space has been left for you to take notes.

- I. The importance of using words rationally
  - A. Things don't bother you.
  
  - B. The effect of speaking rationally to yourself.
  
- II. Arbitrarily deciding whether or not to be upset, but ignoring your decision when you feel upset.
  
- III. How unrealistic perceptions lead to self-defeating emotions and behaviors.
  - A.
  
  - B.
  
  - C.
  
- IV. How to change your undesirable feelings immediately (list the steps).
  - A.
  
  - B.
  
  - C.

- V. Irrationally focusing on the few times you do not get what you want, and ignoring the times you do.
  
- VI. The importance of practicing new behavior regularly.
  
- VII. The best way to influence another person to change his behavior is to change your reaction to his behavior.
  - A.
  
  - B.
  
- VIII. The importance of perceptions in emotions. (Example: The view of the world that things are infringing on you).

"How to Stop Overeating by  
Learning Rational Self-Mastery, Part 7"

1. T. F. It bothers Illana to hear her husband yell.
2. T. F. Illana was too upset to behave rationally.
3. T. F. A solution to Illana's problem is to think rationally more than she thinks irrationally.
4. T. F. Illana's use of words shows she thinks things are unfairly impinging on her.
5. T. F. Illana's being upset was rewarding her husband's behavior.
6. T. F. RSM needs to be practiced only once or twice to be learned.
7. T. F. Illana is more likely to stop hating people as she realizes she causes her own emotions.
8. T. F. Illana's husband really was upsetting her the day she got so upset.
9. T. F. The real reason Illana was upset was because too many things were on her mind.
10. T. F. During the therapy session, the way Illana made herself feel better was to change her thoughts.

## Tape 3

"Learning to Live Rationally  
Inside and Outside of Prison, Part 3"

In his third session, Robert presents his first attempt to do a rational self analysis (RSA). He does excellent challenges for a first attempt. However, he learns that he is not fully expressing his attitudes in his self-talk and how to learn what his hidden attitudes are. One attitude he responded to, but didn't express was that "things shouldn't be like they are." He learns why the way he used "should" is irrational and what the rational view of should is.

The following are the major points covered in the tape:

- I. Importance of the correct use of words since:
- II. Importance of distinguishing between objective reality and subjective opinion.
- III. Attitudes
  - A. What are they?
  - B. A  $\longrightarrow$  C
- IV. Should Concept
  - A. Common use of "should"
  - B. Irrational "should" -- elicits anger
  - C. Rational (scientific use of "should"
- V. Emotional white lies
  - A. What are they?
  - B. What is the result of telling them to yourself?

"Learning to Live Rationally  
Inside and Outside Prison, Part 3"

1. T. F. It does not make any difference what words you use to communicate with yourself.
2. T. F. Rational thinking is the same as positive thinking.
3. T. F. It is facts and events that upset people.
4. Robert was not aware of some of his thoughts because they have become \_\_\_\_\_.
5. T. F. Everything is always the way it should be.
6. The rational or scientific "should" is based on (check one):  
\_\_\_\_\_ a. fact  
\_\_\_\_\_ b. magic
7. T. F. Robert's neighbor should have gotten angry when Robert refused to answer her questions.
8. T. F. Robert did not like his neighbor's behavior. As a result he had no choice but to be upset about it.
9. T. F. Words like "nosy old bitch" when used to describe human beings are based on objective reality.
10. Behind almost every angry response is an irrational \_\_\_\_\_.

## Tape 4

Rational Group Approach to Problem Solving  
Without Professional LeadershipHints on How to be a Relaxed, Effective  
Rational Self-Counseling Group Member

1. Remember, you're just a fallible human being, trying to learn more about yourself in the rational self-counseling technique of problem solving and emotional control. As a fallible human being, you're entitled to your own opinions, whether they're right or wrong, rational or irrational, valid or invalid. By the same token, your classmates are entitled to their opinions, right or wrong, rational or irrational, valid or invalid -- even if it disagrees with yours.

No matter how right or wrong your opinions may prove to be, you will not change as a person; that is, stupid or foolish opinions do not and cannot turn you into a stupid or foolish person; rather, you will still be what you have always been and will always be, only a fallible human being. If the group disagrees with you, keep in mind that they aren't attacking you as a person; they are merely trying to get you to see why they think you'd be better off if you changed that particular belief. Even if you don't agree with the group, you'll still be the same fallible human being you've always been.

2. If you start feeling anxious in group, immediately point out to yourself that since you are not in any physical danger, your anxiety is inappropriate. Keep repeating that objective fact to yourself and start the Instant Better Feeling Maneuver. That is taking in deep slow inspirations and without pausing, blow them all the way out. Be as quiet as possible to keep from disrupting the group. It takes about five seconds to complete the complete deep inspiratory - expiratory cycle. At the end of expiration, always hold your breath for at least 10 seconds. It takes about a second to think one thousand one; so if you mentally count to one thousand ten while holding your breath, that will be about ten seconds. Any time after you've held your breath for ten seconds, repeat the inspiratory - expiratory cycle. Most people can hold their breath with ease for ten seconds; if you can't, however, don't force yourself, just hold your breath to the point of minimal discomfort and repeat the inspiratory-expiratory cycle.

After two or three inspiratory - expiratory cycles, start thinking the word relax as you slowly exhale. Now you'll be breathing between five to seven times per minute. At that slow

rate of breathing, you'll find it almost impossible to remain anxious if you also keep in mind that you are not in any physical danger there in the group. Continue this exercise until you feel comfortable. Afterwards, however, keep focusing on the fact that you have no objective reason to feel anxious or tense in the group.

When you have an opportunity to speak, it would be well to admit your anxiety to the group analysis. If you don't do that, as soon as possible after group, do a written Rational Self-Analysis (RSA) of your group anxiety and present it for group discussion at the next group meeting.

3. One of the big advantages of group is, it gives you a chance to increase your skills in rational thinking by analyzing the problems of the other group members. That is helpful to you because whenever you make a rational insight into another person's problems, that insight will also apply to you if you have or ever develop a similar problem. Also, everytime you explain a rational insight to someone else, you are also explaining it to yourself. That's one of the most effective ways to teach yourself to think rationally. So never hesitate or refuse to take advantage of the chance to share your rational insights with the group.

4. Whenever somebody else is presenting a problem, ask yourself, "What do I do that's similar to what he's doing?" or "What do I do that is different?" In both cases answer yourself. Look for similarities and differences of situations. The more you identify with the problem or the thought process involved in it, the more likely you are to personally benefit from the group discussion, even though you may not personally say anything.

Remember verbal participation in group is important; without it there will be no group interaction. But your constant mental involvement is the most important self-help maneuver that group enables you to practice - so PRACTICE at every group.

### Hints on How to Coordinate an Effective Rational Self-Counseling Group

1. Remember, you're a fallible human being. And, if you get tense, force yourself to do the Instant Better Feeling Maneuver without disrupting the group. (See "How to Be a Relaxed and Effective Group Member" for the details).

2. There are no ten commandments of coordinating an RSC (Rational Self-Counseling) group. The following are merely descriptions of proven effective group coordinator techniques.

3. Always write the five rules for rational behavior on the board for easy reference. If one is not available, verbally recite the rules to the group and remind them that all group discussion will be kept within the limits implied by those five rules. Refer to those rules to resolve all points of difference within the group as well as when you need to remind the group and yourself of the basis of the group discussion. If you seem to be losing control of the group, just call everything to a halt and say, "Let's see how many of the five rules for rational behavior our discussion is now meeting". If three or more of the rules are being disobeyed, get the group discussion to again meet at least three of the five rules before continuing the group.

4. The function of the group coordinator is to coordinate. That is, he or she directs the direction and flow of discussion; makes decisions (based on the five rules for rational behavior) about what topics seem relevant and need to be pursued and which ones seem irrelevant and can best be ignored. If the coordinator can justify his or her decision on the basis of the five rules, it may be well to do it some times. However, the coordinator is not required to justify his or her decisions. Since the coordinatorship changes each week, the group will not suffer because of poor coordinatorship one time. The best way to decide if a topic is probably relevant or not, is to decide how useful is the topic likely to be in helping this person solve this particular problem. If it doesn't seem likely to you to be very useful, you can ask the group to comment on its probable usefulness prior to making your decision to pursue it or ignore it.

If you think the group or a member of the group is discussing irrelevant material, the most effective maneuver is to simply say, "I think that's off the point", or "See how many of the five rules for rational behavior that obeys" or "That point probably needs to be discussed but save that for later. I think the major point is . . . ."

5. One of the main functions of the group coordinator is to get

the group members actively involved in group discussion without trying to badger or force them. An effective technique of increasing active participation is to specifically ask different group members to say how they would have challenged the "A" or "B" section of the RSA being presented if that RSA were his or her own. Then after two or three or as many desired, have commented, then let the person who actually did the RSA say what his or her rational challenge was.

When there is disagreement about what is rational, systematically try to apply each of the five rules for rational to each of the differing opinions and vote on which

## Tape 5

"How to Overcome Your Fear of  
Making Mistakes"

- I. Introduction by Dr. Maultsby explaining the difference between:
  - A. The irrational fear of making mistakes, and
  - B. The rational concern about making mistakes.

Three insights you need to have:

  - 1.
  - 2.
  - 3.
- II. Image thinkers vs. Concept thinkers
  - A. Advantages
  - B. Disadvantages
- III. Steps to be taken in order to eliminate irrational fear of making mistakes.
  - A.
  - B.
- IV. REI vs. IREI
- V. Importance of rational use of brain
  - Why?

"How to Overcome Your Fear of  
Making Mistakes"

1. T. F. The irrational fear of making mistakes is one of the best ways to insure that you will make more than your share of them.
2. T. F. A rational concern about making mistakes is the best way to insure that you will make as few of them as possible.
3. T. F. It is very productive to think about all the ways of making mistakes ahead of time.
4. T. F. If you make a mistake, that proves how dumb you are.
5. T. F. A concept thinker is less bright than an image thinker.
6. T. F. If you rehearse in your mind making mistakes, you will be prepared to act correctly in the life situation.
7. T. F. REI means taking the rational view of whatever it is you are going to do.
8. T. F. It is very productive to upset oneself after making a mistake.
9. T. F. IREI is picturing yourself doing what you do not want to do and feeling the way you do not want to feel.
10. T. F. A healthy brain will not process irrational thoughts.

## Tape 6

## "How to Motivate Yourself Rationally, Part 1"

In this session, the patient demonstrates how she motivates herself to do disliked tasks by using ambiguous "have-to's". Because she dislikes the task, she naturally reacts to her ambiguous "have-to's" with fear and anger.

Before viewing the session, read over the following outline. While viewing the tape, keep these points in mind.

## I. Fear-contingent "have-to"

## A. Process (List the steps)

1. Faced with a disliked task
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.

- B. Her "have-to" is irrational, which results in other, logical but irrational responses. Why?

## II. Self-reward contingent "have-to"

## A. Process (List the steps)

1. Faced with a disliked task.
- 2.
- 3.
- 4.

- B. This is the rational use of "have-to" and results in calm, to positive feelings.

## III. Concept of "Should"

- IV. Refusal to do the D Challenge
  - A. Why her "It seemed so real" is irrational:
    - 1.
    - 2.
  - B. Not doing D Section creates the 'illusion B thoughts are rational.
- V. Luck or fate
- VI. Intelligent sounding, but meaningless noise
  - A. Examples:
    - 1.
    - 2.
  - B. Communicates nothing of relevance about the solution of the problem.
- VII. Fallible human being.
  - A. What are the failures of human beings?
  - B. You aren't the same as your behavior.

After viewing the video, answer the following questions.

1. In your own words, using the material from the outline and the video, explain what a fear-contingent "have-to" is, and the implications and results of using them. When do you use fear-contingent "have-to's"? How do you respond to them?

2. Do you ever see yourself as being arbitrarily ordered around? Give an example. How do you respond? What would be a more rational view for you to take?

Objective Questions on  
"How to Motivate Yourself  
Rationally, Part 1"

1. T. F. By using the fear-contingent "have-to's", you can teach yourself to hate the task you're doing.
2. T. F. Lettie really was unlucky.
3. T. F. The teacher shouldn't have assigned Lettie the night rotation.
4. T. F. You never have to do anything except die.
5. T. F. People who use fear-contingent "have-to's" often feel angry at others for forcing them to do things.
6. T. F. The following is an example of a self-reward contingent have-to: If I want to graduate, I have to take statistics.
7. T. F. Real, intense bad feelings are a legitimate reason for not doing RSA.
8. T. F. Feelings are always correct with reference to objective reality.
9. T. F. It doesn't matter whether or not you do the "D" section.
10. T. F. You aren't the same as your behavior.

Major Points and Discussion Items for  
 "How to Motivate Yourself Rationally, Part 2"

In her last session, Lettie became aware of how she was irrationally using fear to motivate herself to do things she doesn't want to do. Since then, she stopped using fear-contingent "have to's" to motivate herself. But then she wasn't motivated to work on the task at all, until she again started scaring herself. This stage of not doing disliked tasks is very common when a person gives up a motivational system based on fear. Giving that system up is not enough to get her to do the task; she will have to replace that motivational system with another one to get herself to do disliked tasks without becoming significantly upset or uncomfortable.

In this session, Dr. Maultsby explains how a rationally thinking person motivates himself and contrasts the rational method to that of an irrationally thinking person. Before viewing the tape, become familiar with the following points. Keep them in mind as you view the session and take notes on points that seem personally relevant.

- I. Fear-contingent "have-to's"
  - A. When do you use them?
    - 1.
    - 2.
    - 3.
  - B. When did you learn fear-contingent "have-to's"?
  
- II. Irrational motivational system
  - A. Process an irrationally motivated person goes through  
 (List the steps)
  - B. First asks,
  - C. Then: If yes,  
 If no,
  - D. Advantage
  - E. Disadvantages
  
- III. Rational motivational system
  - A. Process

- IV. The effect of self-hate on motivation
- V. Steps to solving motivational problem (list them)
  - A.
  - B.
  - C.
- VI. Chronic depression is maintained by chronic, active self-hate.

## Objective Questions

"How to Motivate Yourself  
Rationally, Part 2"

1. T. F. When you're motivating yourself irrationally, you use fear-contingent have to's to get yourself to do what you want to do.
2. When faced with a task, the first question an irrationally thinking person asks is: "\_\_\_\_\_?"
3. T. F. It doesn't matter whether you ask yourself, "Do I have to do it?" or "Is it in my best interest?"
4. T. F. If a rationally thinking person wants to do something that isn't in his best interest, he does it anyway.
5. T. F. A rationally thinking person immediately schedules tasks that he/she doesn't want to do, but believes is in his/her best interest.
6. T. F. People who hate themselves won't motivate themselves consistently just because something is in their best interest.
7. T. F. To motivate yourself rationally you have to accept yourself calmly.
8. T. F. It's a fact that some people can only work under pressure.
9. T. F. There is no advantage in doing a disliked task immediately.
10. T. F. A rationally thinking person always wants to do what's in his/her best interest.

## Tape 7

## "The Rational Approach to Decision-Making, Part II"

In her second session, Tilly demonstrates how she used insights she had in her first session to make a decision based more on her brain and less on her gut. Now that she has defined her problem correctly and clearly she is in a position to eliminate it.

The following major points are discussed in the tape:

- I. Importance of the correct use of language.
  - A. "It"
  - B. Why?
- II. Rational view of romantic relationship.
- III. Irrational approach to romantic relationship.
- IV. How to adopt a new belief. (List the three ways).
  - A.
  - B.
  - C.

## Objective Questions on

"Rational Approach to Decision  
Making, Part 2"

1. T. F. Tilly's statement that "It happened again" was based on objective reality.
2. T. F. If one just keeps waiting long enough things will eventually change.
3. From a rational point of view an individual will be most ready to enter a mature romantic relationship when: (choose one)
  - a. He/she thinks he/she needs it.
  - b. She/he thinks she/he cannot survive without it.
  - c. She/he is convinced she/he does not need it.
4. T. F. In order to be happy one needs to be romantically involved all the time.
5. T. F. It is enough to change your mind in order to bring about emotional reeducation.
6. The way to accept a new belief is: (choose one)
  - a. Change your mind and then your feeling.
  - b. Change your mind and then act on your new belief.
  - c. Both a & b.
7. Tilly would have proven that she had accepted the new belief by: (choose one)
  - a. Staying home thinking about it and feeling depressed
  - b. Asking a guy for a date even though she felt anxious in the process.
  - c. Going back to her former boy friend.
8. T. F. An empty apartment is depressing.
9. T. F. Not having a love relationship is evidence that one is a no-good human being.
10. T. F. The final stage of adopting a new belief is when you think it, feel appropriately, and act on the new belief.

## Tape 8

## "How to Overcome Your Irrational Grief, Parts 5, 6, 7."

The following video segments have been selected from a series of therapy sessions conducted with Mrs. Gray, a suicidally depressed woman experiencing prolonged grief response over the death of her husband. These segments illustrate the importance of correctly practicing Rational Behavior techniques. Notice how Mrs. Gray upsets herself by incorrectly practicing Rational Emotive Imagery. Contrast this with how she is able to help herself feel much better by correctly doing a Rational Self-Analysis.

The following outline, of major points covered in the video, has been provided for your convenience. There is space for you to take notes.

- I. Difference between Irrational emotive imagery and rational emotive imagery.
  
  
  
  
  
  
  
  
  
  
- II. Correctly done Rational Self-Analysis
  
  
  
  
  
  
  
  
  
  
- III. Importance of Continued Practice

Objective Questions on  
 "How to Overcome a Suicidal Grief Reaction,  
 Parts 5, 6, 7"

1. T. F. Mrs. Gray was doing REI by picturing her husband with her.
2. T. F. Correctly done REI can cause you to upset yourself sometimes.
3. By picturing herself alone doing things she and her husband used to do together, Mrs. Gray was doing \_\_\_\_\_.
4. T. F. By teaching Mrs. Gray correct REI, Dr. Maultsby was taking her husband away from her.
5. Mrs. Gray's husband is dead. This is the \_\_\_\_\_ or fact.
6. T. F. Homework (RSA) format is based on the format of the anatomy of an emotion.
7. What is the A section in a homework?
8. T. F. The C section in a homework always comes from the B section.
9. The five criteria for rational are:
  - 1.
  - 2.
  - 3.
  - 4.
  - 5.
10. T. F. Rational thinking was not helping Mrs. Gray because she stopped thinking rationally.
11. T. F. Only Mrs. Gray can control what she thinks.
12. T. F. As long as Mrs. Gray practices her irrational way of thinking, she should be miserable.

13. When everything necessary to get or make something happen is done, it \_\_\_\_\_ happen.
14. If you feel afraid without any reason to be afraid, what is the most rational thing to do?
15. T. F. Mrs. Gray has created her fears herself.

Description and Discussion Questions on  
"How to Overcome Suicidal Grief Reaction, Part 9"

In Dr. Maultsby's ninth session with Mrs. Gray, they discuss how she overcame her five month grief response to her husband's death and her suicidal ideation. The intensity and length of her suicidal grief reaction resulted from her irrational demand that she feel better without first thinking better. In this session, she says she realizes that she can feel better - - but only if she consistently thinks better and does better. She has put that insight into effect by correctly doing rational self analysis, particularly when she's upset, and rational emotive imagery. She now feels better and realizes that she can enjoy life if she's willing to work at it rationally.

Major Points

I. Importance of correctly doing Rational Emotive Imagery

II. Correct Homework Format

III. Importance of practicing rational thinking

Objective Questions on  
"How to Overcome Suicidal  
Grief Reaction, Part 9"

1. T. F. In order to feel better, you must first think better.
2. T. F. Thinking rationally takes practice.
3. T. F. Mrs. Gray feels better now because she has forgotten about her husband.
4. T. F. Rational Self Analysis can't be done when you're upset.
5. T. F. Only a well-educated person can really understand and practice RBT.
6. T. F. By correctly doing Rational Emotive Imagery (REI), Mrs. Gray is pleasantly remembering her husband without depressing herself.
7. T. F. Now that Mrs. Gray knows how to correctly use rational self-help techniques, she will never need to practice them again.
8. T. F. By doing all the things necessary to help herself feel better, Mrs. Gray should feel better.
9. T. F. A rational reason not to do RSA's is that you don't have time.
10. T. F. Feeling bad about an undesirable situation will improve it.

## References

## References

- Adler, A. Understanding human nature. New York: Greenberg, 1927.
- Adler, A. The neurotic constitution. New York: Dodd, 1930.
- Adler, A. What life should mean to you. New York: Blue Ribbon Books, 1931.
- Adler, A. Social interest: A challenge to mankind. New York: Capricorn Books, 1933.
- Allison, R.D. An investigation into the attitudes toward science of college chemistry students as a function of laboratory experience. Greeley, Colo.: University of Northern Colorado, 1972. (University Microfilms, Ann Arbor, Mich., No. 73-253).
- Ansbacher, H.L. Sensus privatus versus sensus communis. Journal of Individual Psychology, 1965, 21, 48-50.
- Ard, B.N. Communication in marriage. Rational Living, 1971, 5(2), 20-23.
- Arene, F.T. Developing critical thinking in the junior high school. Clearing House, 1960, 34, 456-461.
- Balch, P., & Ross, A.W. Predicting success in weight reduction as a function of locus of control: a unidimensional and multidimensional approach. Journal of Consulting and Clinical Psychology, 1975, 43(1), 119.
- Bandura, A. Principles of behavior modification. New York: Holt, Rinehart & Winston, 1969.
- Baron, R.A. Authoritarianism, locus of control and risk taking.

- Journal of Psychology, 1968, 68, 141-143.
- Becker, J.J., Spielberger, C., & Parker, J. Value achievement and authoritarian attitudes in psychiatric patients. Journal of Clinical Psychology, 1963, 19, 57-61.
- Best, J.A., & Steffy, R.A. Smoking modification procedures for internal and external locus of control clients. Canadian Journal of Behavioral Science, 1975, 7(2), 155-165.
- Burkhead, D.E., Travers, R.M.W., & Carlson, W.A. An experimental reduction of emotional responses through rational-emotive therapy. Reported in whole, D.S. Goodman & M.C. Maultsby, Jr. Emotional well-being through rational behavior training. 1974, 87-101.
- Campbell, D.T., & Stanley, J.C. Experimental and quasi-experimental designs for research. Reprinted from Handbook of research on teaching. Chicago: Rand McNally, 1963.
- Carlson, W.A., Travers, R.M.W., & Schwab, E.A. A laboratory approach to the cognitive control of anxiety. Paper presented at American Personnel and Guidance Association Convention, Las Vegas, 1969.
- Cautela, J.R. Covert sensitization. Psychological Reports, 1967, 20, 459-468.
- Chance, J.E. Internal control of reinforcements and the school learning process. Paper presented at the meeting of the

Society for Research in Child Development, Minneapolis, March, 1965.

Constantine, M. An experimental study of the development of critical thinking skills of high school English teachers.

Illinois State-Wide Curriculum Study Center, Urbana, Ill., May, 1968.

Corsini, R. (Ed.) Current psychotherapies. Itasca, Illinois: F.E. Peacock, 1973.

Cossman, G.W. The effects of a course in science and culture designed for secondary school students. Iowa City, Io.: Iowa University, 1967. (University Microfilms, Ann Arbor, Mich. No. 68-913).

Crandall, V.C., Katkovsky, W., & Preston, A. Motivational and ability determinants of young children's intellectual academic situations. Child Development, 1962, 33, 643-661.

Crandall, V.C., Katovsky, W., & Crandall, V.J. Children's beliefs in their control of reinforcements in intellectual-academic achievement behaviors. Child Development, 1965, 36, 91-109.

Crego, C.A. A pattern approach to the measure of modes of expression of psychological differentiation. Journal of Abnormal Psychology, 1970, 76, 194-198.

Croft, R.G.F. Attitude changes in a behaviorally oriented mother discussion group. Unpublished manuscript, University of Rochester, 1973.

- Diamond, M.J. & Shapiro, J.E. Changes in locus of control as a function of encounter group experiences: a study and replication. Journal of Abnormal Psychology, 1973, 82, 514-518.
- Dinkmeyer, D., & Dreikurs, R. Encouraging children to learn: The encouragement process. Englewood Cliffs, New Jersey: Prentice-Hall, 1963.
- Dollard, J., & Miller, N. Personality and psychotherapy. New York: McGraw-Hill, 1950.
- Dua, P.S. Comparison of the effects of behaviorally oriented action and psychotherapy reeducation on introversion-extroversion, emotionality, and internal-external control. Journal of Counseling Psychology, 1970, 17(6), 567-572.
- Duckworth, J.B. The effect of instruction in general semantics on the critical thinking of tenth and eleventh grade students. Detroit, Mich.: Wayne State University, 1968. (University Microfilms, Ann Arbor, Mich., No. 69-6092).
- Eisenman, R. Experience in experiments and change in internal-external control scores. Journal of Consulting and Clinical Psychology, 1972, 39, 434-435.
- Ellis, A. Outcome of employing three techniques of psychotherapy. Journal of Clinical Psychology, 1957, 13, 344-350.
- Ellis, A. Reason and emotion in psychotherapy. New York: Lyle Stuart, 1962.
- Ellis, A. Adler's concept of man and present day theorizing. A paper presented at the 78th Annual Convention of the American

- Psychological Association, September 7, 1970.
- Ellis, A. Growth through reason. Palo Alto, California: Science & Behavior Books, 1971
- Ellis, A. Executive leadership: A rational approach. New York: Citadel Press, 1972.
- Ellis, A. Humanistic psychotherapy: A rational-emotive approach. New York: Julian, 1973.
- Elwes, R.H.M. (trans.) The Ethics by B. Spinoza. London: Bell, 1888a.
- Elwes, R.H.M. (trans.) On improvement of the understanding by B. Spinoza. London: Bell, 1888b.
- Feather, N.T. Valence of outcomes and expectations of success in relation to task difficulty and locus of control. Journal of Personality and Social Psychology, 1967, 7, 372-386.
- Fotopoulos, S. Internal vs. external control: increase of heart rate by thinking under feedback and no-feedback conditions. Dissertation Abstracts International, 1971, 31, 3703-3704.
- Foulds, M.L. Changes in locus of internal-external control: a growth experience. Comparative Group Studies, 1971, 2, 293-300.
- Glasser, W. Reality therapy. New York: Harper, 1964.
- Goesling, W.J. Relationship between internal and external locus of control and the operant conditioning of alpha through bio-feedback training. Perceptual and Motor Skills, 1974, 39(3),

1339-1343.

- Goodman, D.S. (M.C. Maultsby, Jr., Collaborator). Emotional well-being through rational behavior training. Springfield, Illinois: Thomas, 1974.
- Gordon, J.E. (Ed.) Handbook of clinical and experimental hypnosis. New York: Macmillan, 1967.
- Gough, H.G. California psychological inventory manual. Palo Alto, California: Consulting Psychologists Press, 1957.
- Gough, H.G., & Heilbrun, A.B. The adjective checklist manual. Palo Alto, California: Consulting Psychologists Press, 1965.
- Grossack, M.M. Why rational-emotive therapy works. Psychological Reports, 1965, 16, 465.
- Guilford, J.P. Creativity. American Psychologist, 1950, 5, 444-454.
- Hauck, P.A. The neurotic agreement in psychotherapy. Rational Living, 1966, 1(1), 31-34.
- Hauck, P.A. An open letter to us. Rational Living, 1968, 3(1), 29-30.
- Hauck, P.A. Can rational emotive therapy serve the Christian? Journal of Pastoral Counseling, 1969, 4(1), 31-38.
- Hauck, P.A. A RET [Rational-Emotive Therapy] theory of depression. Rational Living, 1971, 6(2), 32-35.
- Hauck, P.A. Rational child management (2nd ed.). Roslyn Heights, New York: Libra, 1972.
- Hauck, P.A. Overcoming depression. Philadelphia: Westminster

- Press, 1974.
- Hersch, P.D., & Scheibe, K.E. Reliability and validity of internal-external control as a personality dimension. Journal of Consulting Psychology, 1967, 31, 609-613.
- Herzberg, A. Active psychotherapy. New York: Greene & Stratton, 1945.
- Hoffman, B. The tyranny of multiple-choice tests. Harper's, 1961, 222, 37-44.
- Hull, C.L. Principles of behavior: an introduction to behavior theory. New York: Appleton-Century-Crofts, 1943.
- James, R.K. A comparison of group and individual instruction techniques in seventh grade science. Journal of Research in Science Teaching, 1972, 9(1), 91-96.
- James, W.H. Internal versus external control of reinforcement as a basic variable in learning theory. Unpublished doctoral dissertation, Ohio State University, 1957.
- Joe, V.C. Review of the internal-external control construct as a personality variable. Psychological Reports, 1971, 28, 619-640.
- Johnson, W.G. & Croft, R.G.F. Locus of control and participation in a personalized system of instruction course. Journal of Educational Psychology, 1975, 67(3), 416-421.
- Kant, I. The classification of mental disorders. (C.T. Sullivan, Ed.), Doylestown, Pa.: Doylestown Foundation, 1964.
- Kerlinger, F.N. Foundations of behavioral research. New York:

- Holt, Rinehart, & Winston, 1973.
- King, D.I. An image theory of classical conditioning. Psychological Reports, 1973, 33, 403-411.
- Klugh, H.E. Statistics: the essentials for research. New York: Wiley & Sons, 1970.
- Knipping, P.A. & Chandler, L. A classroom comparison of behavioral modification techniques. Journal of School Health, 1975, 45 (1), 33-36.
- Kooker, E.W. The relationship between performance in a graduate course in statistics and the Miller Analogies Test and the Watson-Glaser Critical Thinking Appraisal. Journal of Psychology, 1971, 77(2), 165-169.
- Krippner, S. Relationship between reading improvement and ten selected variables. Perceptual and Motor Skills, August, 1964, 15-20.
- Lefcourt, H.M. Internal versus external control of reinforcements: a review. Psychological Bulletin, 1966a, 65, 206-220.
- Lefcourt, H.M. Belief in personal control: research and implications. Journal of Individual Psychology, 1966b, 22(2), 185-195.
- Lewis, P., & Dawes, A.S. Effects of sensitivity training on belief in internal control of interpersonal relationships. Psychotherapy: Theory, Research and Practice, 1974, 11(3), 282-284.
- Long, G. Discourses of Epictetus. London: Bell, 1906.

- Luck, J.I. & Gruner, C.R. Note on authoritarianism and critical thinking ability. Psychological Reports, 1970, 27(2), 380.
- MacDonald, A.P. & Games, R.G. Ellis' irrational values. Rational Living, 1972, 7(2), 25-28.
- MacDonald, A.P. & Hall, J. Perception of disability by the non-disabled. Journal of Consulting and Clinical Psychology, 1969, 33, 654-660.
- MacDonald, A.P. & Hall, J. Internal-external locus of control and perception of disability. Journal of Consulting and Clinical Psychology, 1971, 36, 338-343.
- MacDonald, A.P. & Tseng, M.S. Dimensions of internal versus external control revisited. Unpublished paper, West Virginia University, 1971.
- Majumder, R.K., Greeves, K.B., Holt, P.R., & Friedland, B.U. Counseling techniques tested: Field study shows effective internal-external counseling. Journal of Rehabilitation, 1973, 39(5), 19-22.
- Maultsby, M.C., Jr. Rational emotive imagery. Rational Living, 1971, 6(1), 24-27.
- Maultsby, M.C., Jr. Help yourself to happiness. Boston, Massachusetts: Marlborough/Herman, 1975.
- Maultsby, M.C., Jr., Costello, R.T., & Carpenter, L.L. Classroom self-counseling. Submitted for publication, September, 1974.
- Maultsby, M.C., Jr., Knipping, P., & Carpenter, L.L. Teaching self-help in the classroom with rational self-counseling.

- Journal of School Health, 1974, 44(8), 445-448.
- Meichenbaum, D.H., & Goodman, J. Training impulsive children to talk to themselves. Journal of Abnormal Psychology, 1971, 77, 115-126.
- Miller, A.G., & Minton, H.L. Machiavillianism, internal-external control, and the violation of experimental instructions. Psychological Record, 1969, 19, 369-380.
- Moser, A.J. Structured group interaction: A psychotherapeutic technique for modifying locus of control. Journal of Contemporary Psychotherapy, 1975 (Winter), 7(1), 23-28.
- Mowrer, H.O. Learning theory and behavior. New York: John Wiley & Sons, 1960.
- Mowrer, H.O. Learning theory and symbolic process. New York: John Wiley & Sons, 1963.
- Mowrer, H.O., & Viek, P. An experimental analogue of fear from sense of helplessness. Journal of Abnormal and Social Psychology, 1948, 43, 193-200.
- Nie, N.H., Hull, C.H., Jenkins, J.G., Steinbrenner, K, & Bent, D.H. Statistical package for the social sciences (2nd ed.). New York: McGraw-Hill, 1975.
- Nisbett, R.E., & Schacter, S. Cognitive manipulation of pain. Journal of Experimental and Social Psychology, 1966, 2, 227-236.
- Oldfather, W.A. (trans.) Epictetus. New York: Putnam, 1928.
- Paul, G.L. Insight versus desensitization in psychotherapy: an

- experiment in anxiety-reduction. Stanford, Calif.: Stanford University Press, 1966.
- Phares, E.J. Changes in expectancy in skill and chance situations. Unpublished doctoral dissertation. Ohio State University.  
See Journal of Abnormal and Social Psychology, 1957, 54, 339-342.
- Platt, J.J., & Eisenman, R. Internal-external control of reinforcement, time perspective, adjustment and anxiety. Journal of General Psychology, 1968, 79, 121-128.
- Rotter, J.B. Social learning and clinical psychology. New York: Prentice-Hall, 1954.
- Rotter, J.B. Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs, 1966, 80 (1, Whole No. 609).
- Rotter, J.B., Chance, J.E., & Phares, E.J. Social learning theory of personality. New York: Holt, Rinehart & Winston, 1972.
- Rotter, J.B., Seeman, M., & Liverant, S. Internal versus external control of reinforcement: A major variable in behavior theory. In N.F. Washburne (Ed.), Decisions, values, and groups (Vol.2). New York: Pergamon Press, 1962.
- Rust, V.I. Factor analysis of three tests of critical thinking. Journal of Experimental Education, 1960, 29, 177-182.
- Rust, V.I., & Kaiser, H.F. A factor analytic study of critical thinking. Journal of Educational Research, 1962, 55, 253-259.
- Shafer, P.J. Critical thinking ability of teachers. Journal of

Instructional Psychology, 1974, 1(4), 39-40.

- Shirner, S.W. A comparison of student outcomes in various earth science courses taught by seventeen Iowa teachers. Iowa City, Io.: Iowa University, 1967. (University Microfilms, Ann Arbor, Mich., No. 68-974).
- Shybut, J. Time perspective, internal vs. external control, and severity of psychological disturbance. Journal of Clinical Psychology, 1968, 24, 312-315.
- Simon, A., & War, L.O. The performance on the Watson-Glaser critical thinking appraisal of university students classified according to sex, type of course pursued, and personality score category. Educational and Psychological Measurement, 1974, 34(4), 957-960.
- Skinner, B.F. The behavior of organisms: an experimental analysis. New York: Appleton-Century-Crofts, 1938.
- Skinner, B.F., & Holland, J.G. The analysis of behavior. New York: McGraw-Hill, 1961.
- Smith, A.N. A comparative study of a research-oriented high school advanced biology class and a conventional textbook-centered class. State College, Pa.: The Pennsylvania State University, 1971. (University Microfilms, Ann Arbor, Mich., No. 71-28, 732).
- Smith, R.E. Changes in locus of control as a function of life crisis resolution. Journal of Abnormal Psychology, 1970, 3 328-332.

- Smith, T.C., Jr. The utility of an evaluative model in judging the relationship between classroom verbal behavior and student achievement in three selected physics curricula, final report; National Center for Educational Research and Development, Washington, D.C., 1971.
- Straatmeyer, A.J., & Watkins, J.T. Rational-emotive therapy and the reduction of speech anxiety. Rational Living, 1974, 9(1), 33-37.
- Thorne, F.C. Principles of personality counseling. Brandon, Vermont: Journal of Clinical Psychology Press, 1950.
- Trexler, L.D. Rational-emotive therapy, placebo, and no-treatment effects on public-speaking anxiety. Unpublished doctoral dissertation, Temple University, 1971.
- Trexler, L.D., & Karst, T.O. Initial study using fixed role rational emotive therapy in treating public speaking anxiety. Journal of Clinical Psychology, 1970, 34(3), 360-366.
- Trexler, L.D., & Karst, T.O. Rational-emotive therapy, placebo, and no-treatment effects on public speaking anxiety. Journal of Abnormal Psychology, 1972, 79(1), 60-67.
- Troxel, V.A. Analysis of instructional outcomes of students involved with three courses in high school chemistry. Iowa City, Io.: Iowa University, 1968. (University Microfilms, Ann Arbor, Mich., No. 68-16867.
- Veblen, T. The theory of the leisure class. New York: Macmillan, 1899.

- Velton, E. A laboratory task for the induction of mood states. Behavior Research and Therapy, 1968, 6, 473-482.
- Wall, J.B. Relationship of locus of control to self-actualization. Psychological Reports, 1970, 27, 282.
- Ward, C. S-T-A-R-T: Improve your psychological shorthand. Rational Living, 1971, 6(1), 32-34.
- Washburne, N.F. Decisions, values, and outcomes. New York: Pergamon-Press, 1962.
- Watson, G., & Glaser, E.M. Watson-Glaser critical thinking appraisal manual. New York: Harcourt, Brace, & World, 1964.
- White, A.M., Fechtenbaum, L., & Dollard, J. Measurement of what the patient learns from psychotherapy. Journal of Nervous and Mental Disease, 1969, 149, 281-293.
- Wolpe, J. Psychotherapy by reciprocal inhibition. Stanford, Calif.: Stanford University Press, 1958.
- Yonge, C.D. (trans.). The lives and opinions of eminent philosophers. London: Bell, 1905.
- Zingle, H.W. Therapy approach to counseling underachievers. Unpublished doctoral dissertation, University of Alberta, 1965.

## ABSTRACT

### THE EFFECTS OF RATIONAL SELF-COUNSELING ON THE LOCUS OF CONTROL OF TREATED SUBJECTS

CLAWSON, THOMAS WARREN, Ed.D.  
THE COLLEGE OF WILLIAM AND MARY IN VIRGINIA, 1976

CHAIRMAN: DR. FRED L. ADAIR

Rational self-counseling (RSC) has been used with a variety of subjects with success. This study explored the effectiveness of RSC in changing subjects' internal-external locus of control of generalized expectancies (I-E). In addition, a measure of critical thinking, evaluating arguments, was incorporated to ascertain whether RSC had any effect upon that construct.

Subjects for the experiment included: 20 counselors and visiting teacher/counselors from one school system; 20 school system employees from a second school system; and 20 telephone crisis counselors ( $N = 60$ ). All subjects received a 16 hour, eight week treatment course in the principles of RSC. It included lecture, written homework, pre-taped counseling interviews, reading assignments and experiential class discussion. No control group was used.

Testing for the effects of RSC consisted of pre-posttest administration of the Rotter Internal-External Locus of Control Scale (I-E Scale) and the Watson-Glaser Critical Thinking Appraisal (CTA). A course evaluation test of subjects' knowledge of course content was administered as a posttest. The CTA was used as a covariant measure; in addition, the CTA subtest--Evaluation of Arguments was used as a change measure for the treatment effects.

Predicted outcomes and results included:

1. Subjects receiving the treatment course in RSC will show significant movement in the internal direction on I-E Scale scores. (Accepted,  $p < .001$ )
2. External subjects receiving the treatment course in RSC will show significant movement in the internal direction on I-E Scale scores. (Accepted,  $p < .001$ )
3. Internal subjects receiving the treatment course in RSC will show significant movement in the internal direction on I-E Scale scores. (Accepted,  $p < .001$ )
4. Subjects receiving the treatment course in RSC will show a significant increase in scores on the CTA, subtest--Evaluation of Arguments. (Rejected)
5. There will be a relationship between pretest CTA scores and course evaluation scores of RSC treated subjects. (Accepted,

$p < .001$ )

6. A negative relationship will occur between pretest I-E scores and pretest CTA scores. (Rejected)

The first three hypotheses were tested by repeated measures analysis of covariance with I-E scores the dependent variable. CTA pretest scores and course evaluation test scores acted as covariants. The fourth hypothesis was tested by repeated measures analysis of variance and the last two hypotheses were tested by Pearson product-moment correlations. Hypothesis 2 was tested at the .01 level while all others were tested at the .05 level.

Results indicate that RSC is effective in changing I-E in the internal direction regardless of whether internals or externals are treated. RSC is not effective in increasing argument evaluation. Critical thinking is related to the amount of course content learned by subjects while it is not related to I-E.

