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THE TREATMENT OF TEST ANXIETY BY
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DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By
Gerard E. Boutin  B.A., M.S.

* * * *

The Ohio State University
1976

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Approved By

Herman J. Peters
To my lovely wife, Rossala
ACKNOWLEDGEMENTS

O Lord! that lends me life,
Lend me a heart replete with Thankfulness!

-- Shakespeare

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CHAPTER I

INTRODUCTION

We are in a highly evaluative society, and as such have tended to rely heavily on testing and test results. With our increasing population, the enormous increases in industrial and scientific knowledge, more complex social rituals and an increased depersonalization of man, we have devised a multitude of methods with which to advance, retard, admit, exclude, reward, license, label, honor, permit, certify, diagnose, discriminate for and against all types of people for entrance into a wide variety of schools, programs, occupations and professions. We test mental abilities, interests, aptitudes, personalities, and learning abilities.

It is obvious that tests have a great impact on our lives in terms of goal expectations, job placement, training programs, school, college and graduate school admissions: license to practice a trade or profession. Since success in our society is largely dependent on successful performance on tests, the development of effective therapeutic strategies to decrease test anxiety is essential.
A large amount of research on the correlation between anxiety and learning in educational settings has demonstrated that high anxiety is associated with a lower level of academic achievement at both the school and university level. (Sarason, 1963; Paul & Eriksen, 1964; Spielberger, 1966; Whittmairer, 1974). Spielberger (1962) reports a college dropout rate resulting from academic failure for high anxious students that is four times as great as that for low anxious students.

Specific measures of test anxiety have consistently showed negative correlations with performance on various achievement and aptitude tests such as the Scholastic Aptitude Test, American College Test and others (Alpert and Haber, 1960; Dember, Nairne and Miller, 1962; Sarason, 1957, 1959, 1960, 1961, 1963; Sarason and Madler, 1952; Walsh, Engbretson and O'Brien, 1968; and Phillips, 1972). When low test anxious people were compared to high test anxious people, high test anxious people tended to have lower grade point averages (Alpert and Haber, 1960; Dember, Nairne and Miller, 1962; Desiderato and Koskinen, 1969; Sarason, 1957, 1959, 1960, 1961, 1963; Sarason and Mandler, 1952) and lower classroom test scores (Alpert and Haber, 1960; Dember, Nairne and Miller, 1962; Paul and Eriksen, 1964; Walsh, Engbretson and O'Brien, 1968). Is this because high anxious scorers are less bright or alert, or because they are more deleteriously affected by
stress than are others in the test anxiety score distribution? Knowing that a correlation is statistically significant does not tell us why it is so or whether it is psychologically significant. Experimental studies have shown that on a variety of tasks, highly test anxious people consistently performed better under low stress conditions than under high stress conditions (Mailett and Watson, 1968; McCoy, 1965; Russell and Sarason, 1965; Sarason, Pederson and Nysman, 1968). Further studies strongly suggest that many highly test anxious persons are not deficient in intellectual ability. The problem seems to be that they exaggerate and personalize inordinately the threat of evaluation that may inhere in a given situation (Mandler and Sarason, S.B., 1952; Sarason, 1956, 1957; Sarason and Minard, 1962; Watson and Fried, 1969). The results of these studies point to the conclusion that what distinguishes the high test anxious individual is (1) the lower performance of high anxious students is evoked by the stressful situation and not the result of lower ability, and (2) the manner in which he attends to the events of his environment and how he interprets and utilizes the information provided by these events. Empirical evidence demonstrates that high levels of test anxiety, or the specific anticipatory anxiety in test-taking situations, interferes with academic performance; consequently, many high test anxious individuals perform poorer on
examinations than their intellectual ability indicates. This poor performance results in consequences such as poor grades, dropping out of school, and a general inability to achieve goals which are realistically attainable.

Research on test anxiety suggests that the difference in test performance between high and low anxious persons is largely due to a difference in attentional focus during test taking (Sarason, 1972; Wine, 1971). The research suggests that in evaluative situations low test anxious subjects tend to focus on task-relevant variables. High anxious subjects, on the other hand, divide their attention between self-relevant and task-relevant variables. The intrusion of irrelevant thoughts focusing on self-evaluative, self-deprecatory thinking, and perception of high emotional arousal interferes with full attention to the task and results in performance decrement (Mandler and Watson, 1966; Wine, 1971; Morris and Liebert, 1970; Sarason, 1973).

Research by a variety of investigators (Siebert and Morris, 1967; Mandler and Watson, 1966; Wine, 1971; Morris and Liebert, 1970; Sarason, 1973) indicated highly test anxious people, in situations in which their performance is being evaluated, spend much of their time (1) worrying about their performance and about how well others are doing, (2) ruminating over alternatives, (3) being preoccupied with such things as feelings of inadequacy,
(4) anticipating punishment, loss of status or esteem, and (5) developing heightened somatic and autonomic reactions. In other words, worry components direct attention away from the task and result in performance decrement. Thus, a treatment procedure aimed at controlling the worry component and the attential style of the highly test anxious client should improve test performance (Meichenbaum, 1974; Meichenbaum and Cameron, 1975). Research must investigate conditions and variables that will alter the interfering responses elicited by the anxiety. Rational Stage Directed Hypnotherapy (RSDH) is such an approach.

**Rational Stage Directed Hypnotherapy (RSDH)**

Fromm (1972) indicates a need for an integration of hypnotherapy with new psychotherapies. She predicts that there will be many attempts to integrate hypnotherapy with some of the newer psychotherapies such as behavior modification, desensitization, aversive conditioning, and self-actualization therapies. The Rational Stage Directed Hypnotherapy approach is a therapeutic approach designed to integrate hypnotherapy, imagery, and rational emotive therapy (RET) with those stages of client growth identified by Tosi (1974).

RET (Ellis, 1973) is an active directive psychotherapy which views emotional and behavioral disturbances as resulting from a person holding to illogical or
irrational beliefs, ideas or attitudes about self or situations, both real and imagined (Arnold, 1968; Lazarus, 1966; Meichenbaum, 1973; Miehl, 1966; Moleski and Tosi, 1975; Tosi and Marzella, 1975; Raimy, 1975). RET is a cognitive behavior modification procedure which specifically restructures a person's irrational beliefs which underlie emotional disturbance and self-defeating behaviors. RSDH is an integration of hypnosis with RET while simultaneously guiding the client through various growth stages, via imagery. These growth stages - which include exploration, commitment to rational thinking and acting, internalization of rational thinking and acting, and change/redirection - are adaptations and modifications for counseling and psychotherapy by Tosi and Marzella (1975) of those identified by Mooney (1969) and Quaranta (1971).

RSDH is an active-directive cognitive behavior therapy which guides a client's growth through the various growth stages while focusing on one problem area or on a group of problem areas.

RSDH makes extensive use of cognitive-emotive imagery while the client is in a hypnotic trance state. Marzella (1975) states:

RSDH is stage directed and places priority on high level covert cognitive control over emotional, behavioral and situational conditions. Through these various stages, the client uses a cognitive restructuring intervention.
The cognitive restructuring intervention used is Tosi's (1974) A,B,C,D,E self-analysis (see Appendix J) - an elaboration of Ellis' A,B,C paradigm (1962). Tosi and Eshbaugh (1975) state that the concept of rationality-irrationality implies much more than evaluative cognition alone; it includes affective, physiological and behavioral-motoric variables. In Tosi's self-analysis the client encounters real or imagined events, via imagery, which serve to activate the irrational and illogical self-verbalizations underlying the affective/physiological/behavioral disorders.

The client first learns the essentials of rational emotive theory and learns to develop proficient skills in identifying irrational prophesies and to forthrightly question and challenge these ideas so that he can uproot them and replace them with more rational self-enhancing attitudes. These rational analysis skills are then developed, reinforced and implemented while the client is in a hypnotic state. These imageric tasks are then augmented with in vivo tasks which are similar in content to the imagery (Tosi and Marzella, 1975).

In RSDH, the purpose is to actively confront and challenge irrational internalized beliefs and attitudes so as to minimize or eliminate altogether these illogical cognitions which are the root of neurotic disturbance. Then it assists in cognitive reconstruction of such internalized
beliefs and attitudes, and replaces them with more self-
enhancing ones. RSDH is considered a cognitive behavior
theory in that it assumes a person's faulty attitudes,
belief systems and thinking patterns are largely learned
and can be unlearned and replaced by rational attitudes,
beliefs and thinking patterns (Meichenbaum, 1974, 1975;
Wine, 1971; Ellis, 1962; Beck, 1970, 1972; Tosi and
Moleski, 1974; Maultsby, 1971; Marzella, 1975).

Hypnosis has been applied to various therapies to
increase their effectiveness. However, in the past,
experimental researchers frequently tried to replicate the
findings of clinicians and often failed. Whenever this
happened, the clinicians were criticized for poor methodol-
gy and faulty observation.

Marzella states (1975):

Clinicians, practicing in the field, tend to
overlook the lack of control, placebo groups,
and suggestibility factors and lean toward
practicing "what works" for them. On the
other hand, research that overgratifies,
overcontrols and oversterilizes results, and
methodologies tend to negate the notion of a
trance state and attribute any significance
to intervening, expectory, and motivational
variables. While being statistically sound
and experimentally precise, most of the "art"
and conviction of the hypnotist is sacrificed
for sterility; hence, clinicians find little
applicability of these techniques outside the
laboratory.

However, in the last few years, experimentalists as well as
clinicians have come to realize that not all clinical data
can be readily replicated in the laboratory; clinical and
experimental situations have differing social characteristics that often elicit different reactions from the hypnotized individual. Some clinicians have argued that a patient comes to his therapist with a set of expectations totally different from those of the curious student who comes to the hypnosis laboratory to participate in a new experience. It is possible, too, that a student who is paid a fee to participate in an hypnosis experiment may react differently from one who wishes to experience hypnosis out of intellectual and/or emotion-loaded curiosity. More research needs to be done concerning the problem of similarities and differences between clinical and experimental hypnosis (Shor, 1972). While this study is not an attempt to resolve this question, it is an acknowledgment of the problem.

The problems in comparing clinical and experimental hypnosis are based on the unwillingness of laboratory researchers to accept as real, phenomena that may not be fully replicable in the traditional laboratory. While it is true that clinicians may have been overly "credulous," the "skeptical" experimenter, with his emphasis on objectivity, can, it is felt, inhibit the occurrence of certain valid hypnotic phenomena. This study is an attempt to bring together the objectivity of the experimentalist with the "art" of the clinician.
Need for the Study

The experimental study of test anxiety has much to recommend it. It is less diffuse than more global concepts of anxiety. It deals with an important problem, one of wide generality, with "real life" consequences. It is manageable because it is susceptible to manipulation and study in laboratory situations. Whereas separation or castration anxiety is less tailor-made for investigation in the laboratory, tasks on which people—especially students—perform have taken on, or can easily be made to take on, face validity.

The topic of test anxiety is also of interest to the student of personality, the clinician, and the teacher. It has served as a bridge between the more research-oriented and the more clinically oriented psychologist (Meichenbaum and Cameron, 1975).

The effort to eliminate or minimize persistent fears and anxieties has constituted a major psychotherapeutic problem. According to research, traditional methods of dealing with such problems have not been very impressive (Truax, 1966; Truax and Carkhuff, 1967).

These circumstances have led us to search for more effective ways of dealing with problems. RSDH is one such new approach.
In a study by Bronzaft and Epstein (1973), the relative evidence of test anxiety now versus five years earlier was investigated. In this study, 317 undergraduates at three New York colleges, with high test anxiety, were compared with the same number at those colleges five years earlier, using the Alpert-Haber test of anxiety, which measures both facilitating and debilitating anxiety. The results showed that at all three schools the mean facilitating test-anxiety scores had decreased, whereas the mean debilitating anxiety scores increased. This study shows the need for more effective methods of dealing with test anxiety.

Besides the traditional self report measures of test anxiety, a good study which tests the effectiveness of a therapeutic procedure should use a sensitive physiological measure. In research involving the use of hypnosis there is a need for experiments which incorporate rigorous designs (Shor, 1972; Marzella, 1975). Shor (1972) sees two fundamental problems in hypnosis research:

...the two dangers are the danger of not providing sufficient disciplined skepticism, and the danger of not providing sufficient positive catalyst. In other words, the attitude of disciplined skepticism, so essential for building a realistic science must not become a blinding preoccupation that the investigator thereby becomes an inept hypnotist. But equally important, the hypnotists exuding of confident persuasiveness, so essential for properly catalyzing the hypnotic processes, must
not become such a blinding preoccupation that the investigator thereby loses his scientific objectivity. Thus, taking the "magic" out of hypnosis debilitates the phenomena, but taking the "magic" too seriously deludes the investigator.

An attempt was made in this study to carefully control for these two dangers as much as possible by standardizing the treatment procedures, while still providing enough freedom to deliver the art of psychotherapy. Controls for therapists, therapeutic treatments, hypnotic suggestibility, repeated measures on the dependent variables, and the subjects themselves.
Purpose of the Study

The purpose of the study was to examine the feasibility of a new approach to therapy, rational stage directed hypnotherapy on the reduction of test anxiety of female nursing students. A subquestion was to assess the extent to which the level of client susceptibility to hypnosis and the therapists themselves contribute to the therapeutic process. The feasibility of the approach was examined by comparing groups of nursing students who were enrolled at Grant Hospital School of Nursing.

Hypotheses

The following null hypotheses were investigated:

Main effects: Treatments

Means representing test anxiety in the self-report and physiological domains as measured by the State Trait Anxiety Inventory, the Anxiety Differential, MAACL, S-R Inventory Test Anxiety Scale, Personal Beliefs Inventory, and Palmar Sweat Print, from groups of subjects defined in terms of various treatments, Rational Stage Directed Hypnotherapy (RSDH), Hypnosis, Placebo, and Control will not differ significantly across pre, post I and post II conditions.

Main effects: Susceptibility

Means representing test anxiety in the self report and physiological domains as measured by STAI, AD, MAACL, S-R Inventory, TAS, the PBI, the Palmar Sweat Print from groups of subjects defined as high and low on the Barler Suggestibility Scale (1965) over pre, post I and post II conditions will not differ significantly.
Main effects: Therapists

Means representing test anxiety in the self report and physiological domains of the STAI, the MAACL, the AD, S-R Inventory, the TAS, the PBI, the Palmar Sweat Print and from groups of subjects within RSDH, Hypnosis, Placebo and Control having assigned therapists will not differ significantly across pre, post I and post II conditions.

Interaction effects:

Observed means representing test anxiety in the self report and physiological domains as measured by the STAI, the MAACL, the AD, the S-R Inventory, the TAS, the PBI, the Palmar Sweat Print, from groups of subjects defined in terms of and in combination of treatment, therapist, and hypnotic susceptibility will not differ significantly from the means expected from the simple addition of the appropriate main effects.

Assumptions

Several assumptions were implicit in the design of this study. These assumptions were as follows:

1. The subjects chosen for this study were aware that they had test anxiety.
2. The differences between the experimental and control groups were the result of the treatments.
3. The size of the groups were adequate enough to justify undertaking and generalizing from the study.
4. The subjects administered the pre, post I and post II tests were candid enough to make tests valid.
5. The test anxiety reduction can be accomplished in the time allotted to the study.

**Limitations of the Study**

The limitations of this study were as follows:
1. The subjects selected were all female students enrolled in Nursing at Grant Hospital School of Nursing.
2. The results of the study cannot necessarily be generalized to populations outside Grant Hospital School of Nursing.
3. The time allotted for the study was restricted to the Autumn Quarter, 1975, at Grant Hospital School of Nursing.

**Definition of Terms**

The following terms were used extensively in this research and are therefore defined for better understanding of the research.

**Hypnosis:** State of concentrated focused attention as brought about by positive attitudes, motivations, expectancies, and the Ss willingness to cooperate, think, imagine, and respond to the suggestions offered.
Placebo: The treatment condition where Ss met and received direct suggestions that any test anxiety they had would be alleviated. No specific method for dealing with test anxiety was offered, and all questions were answered in a very reflective and non-directive manner.

Rational Stage Directed Hypnotherapy: A cognitive-behavioral treatment intervention which is both didactic and experiential, specifically designed to guide a client through the growth stages of awareness, exploration, commitment to rational thinking and acting, internalization of rational thinking and acting, and change or redirection.

Susceptibility to Hypnosis: Susceptibility to hypnosis is operationally defined as the score each subject obtains on the Barber Suggestibility Scale (BSS). A score greater than "8" implies high susceptibility; a score less than or equal to "8" implies low susceptibility. Susceptibility refers to the responsiveness with which a subject responds to suggestions offered in a state labeled as hypnosis.

Rational: Rationality is a non-static concept based upon logically correct thinking relative to a given set of facts (Tosi and Marzella, 1975). R.W. Sperry (1974) states that rationality is a method by which we achieve our main goals and values. Maultsby (1971) lists five criteria to determine whether or not one's thinking and acting are rational. Thinking and acting is rational when:
1. It is based on objective and subjective reality.
2. It helps preserve life.
3. It helps one achieve his immediate and long term goals.
4. It minimizes significant personal stress.
5. It minimizes significant environmental stress.
   (By significant we mean any amount of conflict you are willing to avoid.)

**Organization**

Chapter I has established the purpose of the study, assumptions, limitations of the study, hypotheses and a definition of terms. Chapter II contains a review of related literature. The methodology employed, the collection of the data, and the method of analyzing the data are presented in Chapter III. Chapter IV contains the analysis of findings and Chapter V contains the summarized conclusions that emerged as a result of the research.
CHAPTER II

REVIEW OF THE LITERATURE

It is very obvious that we are influenced not by "facts" but by our interpretations of facts. Alfred Adler

The purpose of this chapter is to present a selective and representative review of the literature which the investigator considers most relevant to the research problem. The major question of this study focuses upon the effects of rational stage directed hypnotherapy on the reduction of test anxiety as measured by the Stait-Trait Anxiety Inventory, the Test Anxiety Scale, the Anxiety Differential, the Multiple Adjective Checklist, the Personal Beliefs Inventory, the S-R Inventory, and the Palmar Sweat Print.

Counselors and psychotherapists are faced with a very nagging problem. Since widely diverse methods of treating similar problems have both successes as well as failures, how can one defend a given set of treatment procedures as superior to others. Since, quite different, even contradictory methods of treatment produce similar results, explanations for the success of treatment must be
sought outside the realm of method or technique. It is quite evident that successful treatment of emotional problems does not depend on the following issues:

Focusing on the past or upon the present, treating individuals in private or treating them in groups; exploring unconscious impulses or attending to conscious motivations; employing directive procedures or practicing nondirect procedures; training therapists who radiate love and affection or training therapists to maintain a cool objectivity. (Raimy, 1975)

How then do we account for successful therapy. There have been three popular ideas which try to explain this. One is to search for unknown characteristics of the therapist which might influence changes in the client. Despite some current research aimed at identifying therapist variables (Truax and Carkhuff, 1964; Truax, 1963; Truax and Wargo, 1967; Carkhuff and Truax, 1965; Truax, 1968) still it is largely of random conjecture. The most impressive recent research in this direction is found in the methods of the behavior therapists who have concentrated on operant behavior which is controlled by its consequences. (Skinner, 1962) The behavior therapies have had rather remarkable successes in dealing with fears and phobias but have not as yet been very successful with the more complex psychological problems which are more common to counselors and therapists.
The problem the behavior therapists have been able to successfully treat can be dealt with by so many different behavioral techniques, here quite different and contradictory methods seem to have quite similar success with similar problems.

The third direction in which the search for successful treatment can turn is one can quite logically search for characteristics in the client namely the beliefs and attitudes that each individual has about himself and the external world. Beliefs and attitudes can be modified or eliminated in many ways, to propose that there is one and only one way to eliminate or change beliefs is as ridiculous as saying there is one and only one way to conduct successful counseling/therapy.

The investigator believes that test anxiety is caused by false ideas implanted in the mind and that rooting out these false beliefs will bring about improved adjustment. This paper is concerned with the effectiveness of Rational Stage Directed Hypnotherapy in the modification or elimination of faulty ideas, beliefs and attitudes.

Theory of Test Anxiety

It is the purpose of this section to examine test anxiety within the framework of Rational Emotive Therapy (Ellis, 1962, 1973).
A rational-emotive analysis of test anxiety is closely related to existing theories of test anxiety. Mandler and Sarason (1952) state two kinds of drives are evoked in the testing situation:

1) learned task drives, which are reduced by "responses or response sequences which lead to completion of the task (Mandler & Sarason, 1952), and

2) a learned anxiety drive, which can elicit two classes of responses: those related to task completion, which are anxiety reducing, and those which interfere with task completion.

Those responses which interfere with task completion are described by Mandler and Sarason (1952):

These responses . . . may be manifested as feelings of inadequacy, helplessness, heightened somatic reaction, anticipations of punishment or loss of status and esteem, and implicit attempts at leaving the test situation. It might be said that these responses are self rather than task centered.

In other words, these internal sentences are self oriented rather than task oriented which results in an inability to think clearly in spite of adequate preparation, and is usually independent of a realistic appraisal of one's ability so they either block completely or answer inadequately. This also interferes with the individual's ability to learn specific task relevant responses.
Oliver (1975) suggests that blocking is a method of coping with stress, attendant upon the perceived threat of harm which the individual anticipates as the inevitable outcome of the test. The fear of some consequences of the test is the overriding component of the behavior repertoire of the test anxious individual.

Sarason (1960, 1973) and others emphasize that high and low anxious subjects differ in their response pattern under threat. So persons scoring high and low in anxiety differ in their response tendencies activated by personally threatening conditions. Whereas high scoring Ss respond to threat with self-oriented thoughts, low scoring Ss react to such conditions with increased effort and attention to the task at hand.

RET specifies the illogical thoughts, demands, and the catastrophic predictions which distort the view that test-anxious people take of the test situation. It distinctly specifies the internal sentences which generate anxiety and result in self-defeating behaviors. What specifically are test anxious people saying to themselves which interferes with their performance? What are the dire consequences which they anticipate?

Dividing attention between task relevant responses and negative self-evaluations as the cause of test anxiety is further supported by the work of Liebert and Morris (1967). These authors reported that test anxiety is
composed of two major components, worry and emotionality. Liebert and Morris (1967) did a factor analysis of the Test Anxiety Scale (TAS) and they came up with two orthogonal factors, one being "worry" and the other as "emotionality". Worry is defined as cognitive concern over performance, lack of confidence, and emotionality as autonomic responses. The debilitating effects of worry on test performance has been documented by many clinicians and researchers (Doctor and Altman, 1969; Liebert and Morris, 1967; Morris and Liebert, 1970; Spiegler, Morris and Liebert, 1968; Tobias, Hedl, Towle, 1974). These studies show that worry scores are negatively correlated with pretest ratings of performance expectancy and their actual performance in the test taking situation. Morris and Liebert (1969) thus suggest it is the worry component in a situation perceived as personally threatening, which affects performance on cognitive and intellectual tasks in the test situation. Wine (1970, 1971) therefore draws the conclusion that the worry component seems quite related to an attentional interpretation of test anxiety, which says that the reason worry debilitates test performance is that it demands too much time and the high anxious students are not paying adequate attention to the test. Dividing their time between task relevant responses and negative self-evaluations result in negative emotions such as intense anxiety and fear. Which in turn
result in negative physiological changes such as sweaty palms, tension headaches, nausea, butterflies in stomach, etc. These negative emotions and physiological symptoms result in negative and self-defeating behaviors such as the individual who studied hard for a test, knew the material well but fell apart when taking the test. They either block completely or answer incorrectly, thus are unable to achieve goals which are within their intellectual competence.

What distinguishes high test anxious individual are: 1) the manner in which he attends to the events of his environment and 2) how he interprets and utilizes the information provided by these events.

These characteristics may be viewed as habits or acquired attributes whose strength is influenced by specific types of person-environment encounters.

Test anxiety is a function of observational opportunities and other learning variables. Here are some examples: (Izard and Tomkins, 1966)

1. Jimmy notices that his mother gets upset when he mentions he will have an arithmetic test tomorrow.

2. Mary heard her father say that his boss did not like the way he handled a particular problem.

3. Frank gets upset because his classmates don't seem as worried about taking tests as he feels.
4. Bob has observed that his mother is nicer to his father when Dad describes his concerns about how poorly he is doing his job at the office.

5. Frank's mother has on several occasions told about how Dad couldn't get a job because he couldn't pass the qualifying examination.

These examples suggest the type of soil in which test and evaluation anxiety can grow and flourish. The lowest contains two products. In the cognitive realm, there are undesirable self-perceptions, expectations, fears and attitudes. In the autonomic sphere there is heightened physiological reactivity. High test anxious individuals often function maladaptively in both areas.

**Irrational Beliefs Which Evoke and Maintain Test Anxiety**

Ellis (1962) lists ten irrational ideas that are commonly found in patients. The first six are supposed to figure prominently in the development of anxiety:

1. I must be loved or approved of by everyone, or if not be everyone, at least by those I deem significant.

2. I am not worthwhile unless I am completely competent, adequate and achieving.

3. I am unable to control my own happiness.

4. I am controlled by my past history and by my important past experiences.

5. I face disaster if I cannot find the one perfect solution to my problems.
6. I must always be prepared for the worst by constantly agonizing over it.

7. I believe that wicked people should be blamed and punished.

8. I am better off if I avoid difficulties and responsibilities rather than face them.

9. I face disaster if my life does not work out just as I would like to have it.

10. I must become very disturbed over other people's problems.

Our society's value system is imbued with the belief that achievement is highly desirable. Of course a person who achieves to his utmost will reap many rewards and satisfactions in life. Yet many individuals who subscribe graciously to the achievement ethic become so anxious in the face of a test that they defeat their own goals by not performing to their capabilities (Sarason and Mandler, 1952; Atkinson, 1964). Since not all highly motivated people are test anxious, a basic difference between the two is the "fear of failure" also called the irrational demand "I must succeed." Test anxious students believe the need for achievement is epigrammatic. RET shows the individual that it is highly desirable, and in their own self interest to do their best but the statement "I must succeed" implies a demand whose corollary is "I can't stand it if I don't."
Is this threat due to a realistic appraisal of the real life consequences of failure. If it is then one can simply work harder to prepare adequately or one can change his goals and make them more in line with one's abilities and interests. On the other hand, I believe the threat is due to the self-evaluative consequences of the failure to achieve. The statement "I must succeed" therefore holds many implications. It implies an absolute criterion of performance by which I, as a person must be judged. If I fall short of this standard of achievement, I am a worthless person. If I fail at a task, then that makes me a failure.

Oliver (1975) says a "failure" is by definition, a person whose consistent achievement is a high competence in the act of failing. The test anxious person makes the prediction that he will continue do to poorly on tests. This prediction tends to become a self-fulfilling prophecy and his anxiety will continue; his irrational demand for success will be salvaged; his self-defeating behavior will be maintained. The test anxious person proves to himself that (1) his anxiety was justified, (2) he is a worthless person. He has catastrophized the possible consequences of failure to the most cherished aspect of his value system: his self-worth.

Is there really such a thing as a worthless person or a failure? Rather there are only individuals who have a
self-defeating tendency to perform poorly on tests. There are, in fact no valid standards with which to rate people as either worthwhile or worthless. Therefore you are much better off to accept yourself unconditionally as being what you are, a fallible human being. Rating yourself serves no useful purpose, so you would be better to rate your performance which you can measure. This is not a justification for not trying but it does mean that if you give up, the irrational demand that "I must succeed" and the irrational belief that "If I don't succeed, then I am a worthless person" the student is then free to replace it with the rational statement "It is desirable and in my best interest to do well."

There are many people who believe in the irrational idea that they must be perfect. They must always be first or number one. They become obsessed with reaching the unattainable perfection, anything less than that is failure. This fear of failure is the underlying cause in test anxiety for the perfectionistic individual, but to these people failure is the achievement or anything less than perfect. They make statements to themselves such as I might make a mistake and wouldn't that be awful. Any performance less then perfect results in self condemnation and guilt. "I should have answered that question correctly." "What an idiot I am." This fear of not being perfect results in the individual not performing and limiting his behavior rather
than risk a mistake. At the same time he feels guilty for not having succeeded and condemns himself as a worthless person.

Another irrational belief which test anxious individuals foster is the idea that "I must at all times win the approval of others. Unless others approve of me, I am not a worthwhile person. Many students say, "If I fail my friends won't accept me, my parents won't accept me." Although it is desirable to be approved by some people sometime, it is not necessary—or possible to win other people's approval all of the time. In fact, it is not necessary to win the approval of anyone, any of the time. It is preferable but it is not a dire necessity to enjoy good relations with friends and relatives. The idea that one must have others approval is based on the magical belief that you can control the minds of others. Dire necessities are irrational demands. "They must love me and approve of me. If I don't succeed, they won't love me. If they don't love me, I am not a worthwhile person." When an individual gives up this irrational idea, he lives with less anxiety and greater attention is devoted to the task at hand, knowing that the outcome can only affect his immediate goal and not his self worth. If others make their love or friendship contingent upon your success that is their problem not yours.
Mandler and Watson (1966) have shown that many individuals who have adequately prepared for a test, block on a test, have a sense of loss of control or helplessness and then experience panic. He knows that he knows the answer but feels helpless to find it. He becomes frustrated and angry. He starts thinking "I should be able to answer this easy question, what a dummy I am, this is terrible, I'll never get into graduate school like this." He is unable to cope with his frustration and he becomes too rigid to search for logical answers which results in blanking and withdrawal. The person momentarily escapes from this panic, his anxiety is reduced temporarily. He has now strengthened a phobic avoidance response to tests.

The test anxious individual is now really in trouble. The next time he faces a test, he not only becomes anxious about passing the test, but also becomes anxious about getting anxious. The person then restates the self-fulfilling prophecy, he tells himself, "Because I got anxious in the past, I will continue to do so, I know I'll get nervous, I can't help it." When he starts saying, "I can't help it" helplessness, hopelessness and self pity occur, guaranteeing failure. The result is further self deprecation and anxiety. As if this were not enough, the individual has certain physiological concomitants of anxiety such as nausea, headaches, etc. This serves as a
danger signal and is interpreted as threats which also
evoke anxiety. The test anxious individual has himself
in a continuous self-defeating cycle.

The self-defeating behavior of the high test
anxious subjects include expressions of lowered self-
esteem, feelings of inadequacy, fear of failure and other
negative consequences, self blame for not having reached
one's previously established standards (perfectionism)
and for his own perceived faults, social evaluations in
relation to one's being accepted by others and evaluations
in relation to one's estimate of how others are doing in
the test. These negative self-statements are usually
represented by simple declarative sentences while taking
the test, such as, "I wonder how I am doing? I can't
make it. I should know this answer, I'm an idiot, this
is terrible." These self statements intrude during the
test and interfere with task-relevant responding and nega-
tive predictions such as "I'll never pass this test, and
that will be awful," actively accompany pretest studying.
Since test performance does influence one's life, high test
anxious individuals generally catastrophize the importance
of the test, doubt their ability to succeed, set up self
defeating irrational assumptions about how awful it would
be to fail and thus fail when encountering a test. This
all tends to fulfill and reinforce the self-fulfilling
prophecy.
Implications for Treatment

The literature reviewed supports a cognitive-attentional interpretation of the debilitating effects of test anxiety on task performance. The highly test anxious person responds to pressures in examination situations with ruminative, self deprecatory thinking, and consequently, cannot focus completely on task relevant variables. Oliver (1975) stated the main implications of RET analysis of test anxiety as follows:

1. Test anxiety is evoked and maintained by irrational beliefs and irrational demands.

2. The perceived threat of harm stems from the anticipated inability to satisfy these irrational demands, and the catastrophizing of the consequences.

3. The catastrophic consequences are primarily to one's feeling of self worth, which is irrationally equated with the test outcome.

4. Irrational beliefs, irrational demands and catastrophic predictions are over learned responses (habits) which are rehearsed before and during a test.

5. Blocking on a test in an avoidance mechanism which is momentarily anxiety reducing but serves to maintain both the anxiety and the irrational belief system.

6. Since irrational, self-defeating beliefs are learned habits, they can be unlearned.

7. New, self-enhancing beliefs and behaviors can be learned.
Personality Characteristics of Test Anxious Individuals

Test anxiety is more commonly experienced by high anxious individuals, that is by those people who have an innate or learned dispositional tendency to perceive a wide variety of events as threatening. However, not all highly anxious people become test anxious. Some use their anxiety to heighten motivation and to facilitate concentration on the task at hand. Others "psyche" themselves up to the point of emotional and intellectual debilitation, to the detriment of performance. (Alpert and Haber, 1960)

There is evidence from studies reporting relationships between scores on anxiety scales, irrational belief inventories and other paper and pencil personality measures that high anxious subjects hold more irrational beliefs, actively rehearse negative self-evaluations which compete for attention during the test situation, are more self deprecatory, more self preoccupied, and generally less content with themselves than low test anxious subjects (I. Sarason, 1960, 1973; Mandler and Watson, 1966; Wine, 1971; Meichenbaum, 1972, 1974; Goldfried and Sobocinski, 1975). Further, some recent studies provide evidence that these self-focusing tendencies are specifically activated by the stress of the testing situation.

In this study, Mandler and Watson (1966) administered to extreme low and high test anxious groups a series...
of digit symbol tasks. After taking these tasks a questionnaire was administered which included the question "How often during the testing did you find yourself thinking how well or badly you seemed to be doing?" High test-anxious subjects reported a much greater occurrence of such thoughts than did the low test-anxious group. Marlett and Watson, 1968; Neale and Katahn, 1968; replicated this study and both reported equivalent results. Tobias, Hedle, and Towle (1974) investigated the effects of easy and difficult test items on high and low test anxious students. The results indicated that high anxious Ss performed more poorly on difficult items than low anxious Ss. The high anxious Ss also had higher levels of state anxiety during the testing than the low anxious Ss. Bottenberg and Goosbauer (1975) investigated the effects on 215 fifth grade boys and girls of three uncorrelated measures of anxiety (test anxiety questionnaires, teacher rating, Rorschach) on short term memory of meaningless and meaningful verbal material. High test anxious Ss performed less well on both meaningful and meaningless material when told it was a test situation. Ganzer (1968) investigated the effects of audience presence and test anxiety on the serial verbal learning of females. He analyzed, while the subjects were working on tasks, the frequency and content of all task-irrelevant comments. The
content analysis indicated that high test anxious subjects comments were mostly of a self-oriented or apologetic nature.

In summary, the evidence from these studies clearly indicates that highly test anxious subjects are more self-preoccupied and self-deprecatory than low test anxious subjects and that these tendencies are activated specifically in testing situations.

**Rational Emotive Therapy**

RET was developed by Ellis (1972). According to its theory, affect is essentially caused by cognitive mediation. The effect of self statements on emotions has been supported by Cove (1922), Korzybski (1933), Johnson (1946), Kelly (1955) and Phillips (1956). It has been investigated by Velten (1968). His subjects read self-referent statements which varied in content. Some reflected elation ("This is great--I really do feel good--I am elated about things") others were depressive ("I have too many bad things in my life") and others were neutral ("Utah is the beehive state"). Using various unobtrusive indicators as well as verbal report as measures of mood state, he found mood to change as a function of the type of statements read. A subsequent study by Rimm and Litvak (1969) supported this finding. RET views emotions as Arnold (1960, 1968) does, as a felt tendency toward
anything appraised as good or away from anything appraised as bad. This felt tendency is accompanied by physiological changes which reinforce approach-avoidance behavior. For Ellis, man is both a rational and irrational being whose emotional disturbances are caused by his adhering to irrational and illogical beliefs and thinking.

The goals of RET are to reduce anxiety and hostility to a minimum by helping, forcing and sometimes cajoling an individual to reorder their perceptions and to reorganize their thinking.

RET utilizes many techniques to achieve these goals. Tosi (1974) cites several techniques which may be used within the RET framework: Rational Emotive Modeling based on Bandura (1969), use of the Premark Principle (Tosi, Briggs & Mosley, 1971), Assertive Training (Wolpe, 1958), Cognitive Restructuring (Lazarus, 1971), Covert Sensitization, Aversive Imagery (Cautela, 1972), Rational Emotive Imagery (Maultsby, 1971) and Systematic Written Homework (Maultsby, 1972). Other techniques include Systematic Rational Restructuring (Goldfried, Decenteco and Weinberg, 1974) and Rational Stage Directed Imagery and Rational State Directed Hypnotherapy (Tosi and Marzella, 1975).

Meichenbaum and Cameron (1974) have demonstrated the clinical potential of modifying what clients say to themselves. Schachter and Singer (1962) reported the results of a study which showed that affective states are a function
of physiological arousal and a cognition or self statement appropriate to that state of arousal. Meichenbaum et al. (1971) showed that RET was more effective than SD in treating individuals with social distress who suffered anxiety in multivaried situations. Many other researchers have shown RET to be effective in various situations (Di Loreto, 1971; Thorpe, 1973; Jacobs, 1971; Moleski and Tosi, 1975; Trexler and Karst, 1972; Wargo, Willis and Hendricks, 1971). The support for cognitive control over emotional states is ever growing. Ellis (1962) states that an individual can be reinforced by his own thinking. Meichenbaum (1974), Staats (1972), Arnold (1968), Velten (1968), Lazarus (1971), Beck (1963, 1970, 1972), Rotter (1954), and Taylor (1974) have investigated cognitive control over both pleasant and unpleasant emotions and have found how the Ss interprets situations to have significant effect on the resulting felt emotion. Even further research has shown that therapeutic techniques which teach positive self statements can significantly reduce anxiety, just as negative self statements can cause anxiety or other self defeating emotions (Kelly, 1955; Phillips, 1956; Ellis, 1962, 1973; Schachter, 1966). Controlled outcome studies support the effectiveness of RET for anxiety reduction. According to Meichenbaum, Gilmore and Fedoravicius (1971) and Trexler and Karst (1972) RET is as effective as systematic desensitization in the treatment of speech anxiety.
The success of systematic desensitization (SD) in the treatment of test anxiety has been documented clinically and experimentally (Paul, 1964; Paul and Shannon, 1966; Suinn, 1968; Cohen, 1969; Donner and Guerney, 1969; Doctor, Aponte, Burry and Welsh, 1970; Allen, 1970; Johnson and Sechrest, 1968; Allen, 1972; Osterhouse, 1972). These studies demonstrate the effectiveness of SD for test anxious Ss as evidenced by self-report measures of lowered anxiety and often improved grades. Allen (1972) points out the vast majority of these studies suffer from serious methodological shortcomings.

Wine (1971) points out two assumptions which underlie any SD: treatment of test anxiety: (1) it is assumed that test anxiety differs only in degree to anxieties and phobias such as snakes, rats, etc., and (2) the emotional arousal component of test anxiety is its defining characteristics. Behavior therapists thus believe that lowering of the autonomic arousal of the test anxious Ss by SD should lead to a reduction of anxiety and result in an improvement of test performance. Treatment by SD, however, does not directly treat the cognitive or worry component of test anxious individuals. Wine (1971) further states a cognitive-attentional view of test anxiety suggesting a quite different approach to the treatment of test anxiety. Wine (1971) suggests two approaches to test anxiety: (1) Give the subjects intensive practice in dealing with tests and (2)
teach the student to focus fully on the task at hand and to inhibit self depreciatory thinking.

Meichenbaum (in press) compared subjects who received a cognitive-modification treatment, subjects who underwent systematic desensitization, and subjects in a waiting-list control group. The emphasis of the cognitive-modification procedure was to gain insight into the thoughts and self-verbalizations that are emitted prior to and during the test situation and to train the subjects to emit "task relevant self-statements" and to perform "arousal-inhibiting behaviors," such as relaxation. The results of the study indicated that a cognitive-modification treatment procedure was significantly more effective than standard desensitization in reducing test anxiety. This was evident in an analogue test situation, on self-report measures, and on grade-point average. The improvement was maintained at a one month followup assessment. The originally high test-anxious subjects who were in the cognitive behavior modification group did not significantly differ from low-test anxious subjects on performance and self report measures. Only the subjects in the cognitive-modification group showed a post treatment increase in facilitative anxiety as measured by the Alpert-Haber Anxiety Scale (1960). This result is highly significant since desensitization studies have shown modified behavior but a very minimal decrease in self reports of
fear and anxiety (Lang and Lazovik, 1963; Paul, 1966). Johnson and Sechrest (1968) investigating the effects of systematic desensitization on high test anxious subjects, failed to obtain changes in self-report on the Alpert-Haber scale, stating: "That verbal behavior of reporting oneself as an anxious student is not dealt with directly by systematic desensitization treatment."

Lang (1969) has stated that changes in the S's self-verbalizations may mediate any behavioral change resulting from desensitization. Lang stated "desensitization is designed to develop the response 'I am not afraid,' or a potentially competing response, in the presence of a graded set of discriminative stimuli." Zeisset (1968) also directly substantiates the claims of systematic desensitization as a cognitive change process as he compared the effectiveness of SD procedures with a modification of it which included relaxation training with information on how to use it. He found both treatments to be essentially equal. Zeisset concluded that it is the learning of a strategy to cope with anxiety that is the crucial aspect of SD. Davison and Valins (1968) also have suggested the importance cognitive restructuring plays during SD.

Six recent studies have investigated the effectiveness of a cognitive treatment approach for reducing test anxiety.
Maes and Heimann (1970) compared three approaches to the reduction of test anxiety in high school students. The three approaches consisted of Rational Emotive Therapy, Systematic Desensitization and Client Centered Counseling. Test Anxiety was measured by self-report instruments, an analogue test situation, and grade point average. The results of the study indicate that Rational Emotive Therapy and Systematic Desensitization were effective in reducing test anxiety in the analogue test situation and grade point average. RET was also effective in lowering the scores on the self report measures and was significantly more effective than the SD treatment. Wine (1970) conducted a pilot study comparing the effectiveness of attentional training, attentional training with relaxation and an "insight" therapy approach with test anxious undergraduate students. The attentional training treatment group showed a significant decrease in test anxiety as measured by self report measures as well as two performance measures. The attentional treatment plus relaxation also showed significant improvement on the two performance measures, but no significant decrease in self report anxiety. The insight group did not change significantly on any of the measures. Meichenbaum (1972) investigated the relative efficacy of a group cognitive-modification procedure by comparing it with a group desensitization and a waiting-list control group. The cognitive-modification
group was similar to the study referred to earlier (Meichenbaum, in press). It combined making the Ss aware of their self-defeating thoughts, the use of coping imagery on how to handle anxiety and self-instructional training to attend to the task and not to ruminate about oneself. Changes in test anxiety were measured by: 1) test performance in an analogue test situation, 2) self reports given immediately after post-treatment and later at a one month following, and 3) grade-point average. The results of the study showed the cognitive modification group produced the greatest improvement, although not significantly different from the SD group. The SD and cognitive-modification group improved significantly more than did the waiting list control group. Following treatment, the test anxious Ss in the cognitive-modification group did not differ from a group of low test anxious Ss. The cognitive-modification group also reported a significant increase in facilitative anxiety as measured by the Alpert-Haber Anxiety Scale (1960). Bruch (1974) investigated the efficacy of a cognitive-modification group by comparing it with desensitization and a waiting control group. This approach involved exposing the irrational nature of test anxious Ss' worries by discussing the self-defeating consequences of such thoughts, the verbal modeling of more rational thoughts, and self instructions to attend to study and test taking behaviors. Only the cognitive-modification treatment
resulted in significant decrease in reported anxiety after treatment. Thompson (1974) investigated the relative efficacy of desensitization, desensitization using coping imagery, cognitive-modification (essentially the same as RET with some elements of desensitization) and Rational Emotive Therapy with test anxious college students. The results indicate that the RET group improved the most on all self-report measures of test anxiety and they responded most favorably to the group treatment format, Norman and Craighead (1974).

The review of the literature illustrates that attitudes, beliefs, values and perceptions are subject to modification through the cognitive process. The same cognitive processes that mediate the learning and maintaining of attitudes.
Rational Stage Directed Hypnotherapy

Rational Stage Directed Hypnotherapy is an integration of Rational Emotive Therapy or cognitive restructuring with hypnosis and imagery while guiding the client through various stages of client growth.

Hypnosis and imagery are important processes in RSDH in that actually visualizing, imagining and experiencing cognitive, emotive or physiological states is different from merely talking about them (Marzella, 1975). The cognitive visualization process in hypnosis and imagery along with a cognitive coping model should result in greater generalization of treatment. I. Sarason (1973) in a study with female undergraduates showed the value of imagery or cognitive modeling procedures in reducing deleterious effects of test anxiety.

White (1941) states that once a person is comfortably relaxed, images and experiences tend to become more vivid, more concrete and absolute. The major difference between hypnosis and relaxation training which is utilized in systematic desensitization is where the subject's attention is focused. In hypnosis the use of direct suggestions of relaxation and warmth with instructions to maintain alertness is employed, rather than direct suggestion of drowsiness and sleep (Paul, 1969; Marzella, 1975).
Evidence for cognitive control of relaxation has been presented by Valins and Ray (1967) and Jencks (1973).

Tosi and Marzella (1975) state that as a person acquires new skills and becomes competent in rational self-management he progresses through various stages. These growth stages, awareness, exploration, commitment, skill development, skill refinement, and redirection or change have grown out of the works of Mooney (1963) and Quaranta (1971). Tosi (1974) has adapted these stages to counseling and psychotherapy. Tosi further states that these stages are not discrete stages but highly interrelated ones. For example, if a person were exploring new ways of behaving, he would also be gaining awareness as well. Tosi and Marzella (1975) have further adapted and modified these stages for Rational Stage Directed Hypnotherapy. The growth stages of RSDH are self awareness, exploration, commitment to rational/constructive action, the implementation of rational action, the internalization of rational action, and change and redirection. The person's progress through these stages is noted not only in the therapy situation but also in real life, "in-vivo" situations.

Tosi and Marzella (1975) define these growth stages as:
Awareness - The client sees in himself and his environment new possibilities for growth. He is introduced to new conditions that are contradictory to his self-defeating thoughts, feelings, and actions. He sees that new thoughts, feelings, and actions (skills) are needed to interact more effectively with his environment and with himself. He comes to consider himself both as subject and object. He realizes that he has consciousness of himself. Awareness implies witnessing, observing, as well as participating in one's innermost thinking, emotional experiences, physiological functioning, motoric functioning, and transactional functioning.

Exploration - The client tests out his new awareness or knowledge about himself in the therapeutic context and in real life situations. He submits his old as well as his new ideas, translated into hypotheses, to the empirical test. He is engaging in high level cognitive restructuring in an experimental way. He experiences or reexperiences situations he previously avoided, tries out new behaviors or roles, and evaluates the consequences of his acts. Awareness is expanded as a result of self-institutional explorations. Resistance becomes increasingly apparent in this stage. He is exploring and developing skills in this stage.

Commitment to rational/constructive/action - The client poses his previous awareness and explorations and skills against his tendency to resist or not to resist an authentic encountering of self-and-environment. He is more aware of the innermost thoughts that produce affective/physiological/reactions associated with his tendencies to approach or to avoid significant life situations or to develop the skills necessary to overcome his cognitive/emotional/behavioral/social difficulties. The stage of commitment represents an act of faith, a risk. A last minute attempt to avoid
subjective or objective reality. It is the juncture at which many terminate therapy—the point of choice or decision to act.

Implementation - The client, after privately and/or publically committing himself to constructive action, implements constructive action or the self and environmental skills he is in the process of acquiring. His skills at this stage may involve cognitive control over emotional/physical, and behavioral states—bio feedback, meditation, cognitive/behavioral restructuring, problem solving, decision making, self-hypnosis, progressive relaxation and the like. He then proceeds to practice "in-vivo" and refine these skills. They are eventually internalized.

Internalization - The client shows signs of making his new learnings and experiences a part of himself. He shows obvious signs of incorporating more reasonable modes of thinking and acting into his behavioral repertoire. The use of behavioral modifying procedures becomes second nature—he implements them with greater ease and proficiency.

Change, redirection - The client observes himself. He notes significant changes in his thinking, he sees that he can control significantly negative emotions and self-defeating actions. He transacts more effectively with his environment—thus maximizing positive consequences. He may reaffirm his process at this point, or redirect himself through the stages once again—relative to some other set of problematic concerns. He realizes the need for further growth.

During each stage the client is learning and developing new behavioral skills. Self-monitoring and observational skills are learned during the awareness stage. The exploration stage fosters the development of empirical-hypothesis testing skills. Rational or cognitive
restructuring skills are acquired through practice and testing. In the commitment stage the client is forced into making a decision, he learns how to use the new information and make more rational choices. The implementation stage is where the client moves from the safety of the therapist's office to using his new knowledge in his real life situation. He is continually testing out new modes of behavior. Finally, as he internalizes these new and more self-enhancing approaches to real life situations he then can further develop and refine his thinking and behaviors.

Rational Stage Directed Hypnotherapy, being a new technique for dealing with emotional stress, has a very limited amount of research study. Three recent studies will be examined.

Marzella (1975) investigated the relative efficacy of Rational Stage Directed Imagery and Rational Stage Directed Hypnotherapy in reducing psychological stress in 60 upper level Masters degree students at Ohio State University. Psychological stress was operationally defined by Ss' scores on the Minnesota Multiphasic Personality Inventory, the Multiple Affect Adjective Checklist, the Self-Rating Depression Scale, the State-Trait Anxiety Inventory and the Depression Inventory. Besides the two treatment groups there were three control groups, which consisted of (1) Hypnosis only, (2) Placebo, and (3) a no
treatment control group. The results showed only conditional support for the specific treatment but the data revealed a generally positive finding for sensory imagery approaches. RSDH, RSDI and hypnosis all showed positive effects in the reduction of emotional stress. The effects of treatment were qualified by different susceptibility and therapist factors. The major limitations of this study were: (a) all Ss were upper level M.A. students in counseling, who were for the most part normal. There is a need to replicate with a more clinically disturbed population; (b) the study tried to measure too broad a category, psychological stress. Further studies need to pinpoint a specific disturbance; (c) three weeks are too short a time span between post test and follow up; and (d) Taking the MMPI and the other four instruments three times within a ten week period was an overburden.

Boutin and Gwynne (in press) in a case study investigated the effects of RSDH on the reduction of test anxiety in two female nursing students. The results of the study showed both nursing students demonstrated large decreases in reported anxiety on all three of the paper and pencil scales (Test Anxiety Scale, TAS, State-Trait Anxiety Inventory, STAI-T; STAI-S). The results indicate a significant reduction in both situational anxiety level as measured by the STAI-S (p .05) as well as the measures of trait anxiety obtained from STAI-T (p .02) and TAS scores (p .05). The
performance measures, which consisted of certain subscales of the Weschler Adult Intelligence Scale (Digit Span, Blockdesign and Arithmetic) showed that one subject improved in all three of the scales while one subject improved on two of the three scales. This study showed that changes in self-report, cognitive, performance and physiological domains (reduction in physiological reported symptoms) demonstrated the effectiveness of the therapy procedures.

Reardon and Tosi (1975) describe a case study where Rational Stage Directed Imagery (RSDI) was effective in reducing self-observed guilt as a function of time with resulting changes in internal beliefs, in self-enhancing emotions, reduction in negative physiological symptoms and an increase in appropriate behavior. The limitations of these case studies are obvious: (1) the sample of test anxious subjects is too small, (2) no adequate control group was employed, (3) both studies were conducted by the therapist who was also the author, and fully knowledgeable about the hypothesis of the study.

The study described in the next chapter is designed to investigate further the effectiveness of Rational Stage Directed Hypnotherapy. More specifically, it purports to compare the relative effectiveness of Rational Stage Directed Hypnotherapy, Hypnosis only, an attention-placebo group and a control group in reducing test anxiety.
CHAPTER III

METHOD

This chapter will describe the research methodology and statistical procedures used in this study. The chapter will provide sections related to the selection of instruments, sample selection, therapists, design, treatments, statistical procedures, and a general chapter summary.

A 2X4X2X3 factorial design with two levels of therapists, four levels of treatments, two levels of susceptibility, and three repeated measures, was used in the investigation of the effects of Rational Stage Directed Hypnotherapy on the reduction of test anxiety. Specifically, this study was conducted to determine the efficacy of RSDH in reducing test anxiety as measured by Ss scores on the Test Anxiety Scale (TAS), Multiple Affect Adjective Check-list (MAACL), the State-Trait Anxiety Inventory (STAI), the S-R Inventory of Test Anxiety (S-R), the Anxiety Differential (AD), the Personal Beliefs Inventory (PHI), and Palmar Sweat Print, (PSP).

The design included one treatment group and three control groups, each having equal numbers of high and low suggestible Ss. The treatment group was Rational Stage Directed Hypnotherapy. The control groups included (1)
hypnosis only, (2) placebo, and (3) a no treatment control group.

The dependent measures for this were pre, post, and followup measures on the (1) Test Anxiety Scale (TAS), (2) the Multiple Affect Adjective Checklist (MAACL), (3) the State-Trait Anxiety Inventory (STAI), (4) the S-R Inventory of Examination Anxiety (S-R), (5) the Anxiety Differential (AD), (6) the Personal Beliefs Inventory (PBI), and (7) the Palmar Sweat Print (PSP). Pretreatment measures, including the Barber Susceptibility Scale, were obtained one week prior to the beginning of treatment. Post treatment measures were attained after six weeks of treatment, and followup measures were obtained eight weeks after the last session.

Selection of Instruments

Barber Suggestibility Scale (BSS)

All Ss were administered the BSS prior to the beginning of treatment to determine their basal level of suggestibility. The BSS consists of eight standard test suggestions which include (1) arm lowering, (2) arm levitation, (3) hand lock, (4) thirst hallucination, (5) verbal inhibition, (6) body immobility, (7) posthypnotic-like response, and (8) selective anmesia. These suggestions were read to each Ss, and a possible total score of sixteen points could be scored. (See Appendix A for BSS and
administration instructions) Eight points could be scored on the objective part of the BSS and eight points could be scored on the subjective section. According to Barber and Glass (1962), Barber (1959), and Marzella (1975) a subject attaining a score of eight or higher on the entire test was considered high on susceptibility, and a person who scored less than eight was considered low.

A subject scores one point for each of the eight objective suggestions passed. The criteria for passing each were if: the right arm moves down four or more inches; the left arm rises four or more inches; the S tries but does not unclasp his hands; he swallows, moistens his lips or any other marked mouth movements, and states post experimentally that he became thirsty during this test; he tries but does not say his name; he tries but fails in standing fully erect, he coughs or clears his throat when the specific stimuli is presented post-experimentally; and he forgets that his arm was rising when asked to name the tests postexperimentally.

A subject scores one point for each of the eight subjective suggestions passed. The criteria for passing are if he states, during the standard post-experimental interview, that he actually experienced the suggested effects, and that he did not respond simply to follow instructions or to please the examiner.
Barber and Glass (1962) in a study of 60 female college students under "base-level" conditions showed a test-retest correlation of .88 (p .001).

Other investigators have also attained test-retest correlations of .80 or above for the BSS (Barber and Calverly, 1963, Barber and Calverly, 1964; Barber, 1965; Marzella, 1975). Barber (1969) computed the split half reliability on the odd-even items of the BSS. The Spearman Brown reliability for the scale indicates internal consistency reliabilities greater than .80. Two independent raters, both Ph.D. candidates in the Faculty of Special Services at the Ohio State University, assessed a random selection of each therapist's administration of the BSS. Each therapist was rated on 10 randomly selected administrations. The correlations between the raters and the therapists are as follows:

Table I

<table>
<thead>
<tr>
<th>Therapists</th>
<th>Raters 1</th>
<th>Raters 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$r = .97$</td>
<td>$r = .96$</td>
</tr>
<tr>
<td>2</td>
<td>$r = .98$</td>
<td>$r = .97$</td>
</tr>
</tbody>
</table>
A Spearman rank order correlation was performed on a random selection of 20 Ss in order to ascertain any changes in susceptibility after the treatment period. The Rho coefficient, \( p = .87 \), was significant (\( p < .05 \)). This finding agrees with the finding of Marzella (1975). These results suggest that those Ss who were high in susceptibility prior to treatment remained high after treatment. Those who were low in susceptibility prior to treatment remained low after treatment.

**Multiple Affect Objective Check List** (MAACL)

The MAACL was designed to fill the need for a test instrument to provide valid measures of changes in "verbalizable" anxiety. It is the reduction of "verbalizable" anxiety that is being observed in this study. The MAACL is a brief instrument which takes less than five minutes to administer. The checklist consists of 132 adjectives each of which the subject reads and checks if it describes him generally. (See Appendix B for the MAACL).

In a study on test-anxiety by Zuckerman (1960) a class of 32 students were given the MAACL Anxiety Scale on consecutive class meetings a week apart. In each case the anxiety scale showed a significant increase relative to the baseline, on days when it was given just prior to the examination. It was also significant that the rise in anxiety level was significantly greater for students who
obtained low grades on the exam than for those who obtained high grades. This effect was replicated by seven other studies (Zuckerman & Biase, 1962; Zuckerman, Nurnberger, Vandineer, Barret, 1963; Lieberman, 1965; Winter, Ferrarra and Nausom, 1963; Hayes, 1964; Lieberman, 1965; Zuckerman, et al., 1967). The results of these studies establish the sensitivity of the MAACL of test anxiety. Correlations between the MAACL and the Taylor Manifest Anxiety Scale are reported to be .65. This correlation is similar in magnitude between the MAACL and other measures of anxiety. Test-Retest reliability over an eight day interval has been reported at .77 for the anxiety scale (Zuckerman and Julian, 1965).

The State-Trait Anxiety Inventory (STAI)

STAI (Speilberger, Gorsuch, and Lushene, 1969) consists of two separate self-report scales that measure state anxiety (A-State) and trait anxiety (A-Trait). The instrument was developed as a research instrument for measurement of anxiety with non-psychiatrically disturbed adults. The STAI A-Trait scale consists of 20 statements that ask people to describe generally how they feel. The A-State scale also consists of 20 statements that ask people how they feel at a particular moment in time (See Appendix C for the STAI).
State Anxiety (A-State) is defined as:

a transitory emotional state or condition of the human organism that is characterized by subjective consciously perceived feelings of tension and apprehension, and heightened autonomic nervous system activity (Speilberger et al., 1969).

Trait Anxiety (A-Trait) refers to:

... to relatively stable individual differences in anxiety proneness; that is, to differences between people in the tendency to respond to situations perceived as threatening with elevations in A-State intensity.

The range of possible scores for the STAI varies from a minimum score of 20 to a maximum score of 80 on both the A-State and A-Trait subscales. Subjects respond to each item by rating themselves on a four-point scale. The four categories for A-State are: (1) not at all, (2) somewhat, (3) moderately so, and (4) very much so. The categories for A-Trait are: (1) almost never, (2) sometimes, (3) often, and (4) almost always. Some of the items are worded in such a manner that a rating of "4" indicates a high level of anxiety, while on others, a rating of "4" indicates a low level of anxiety. A scoring procedure has been worked out so that for items on which a high rating indicates low anxiety, the scoring weights are reversed.

To reduce the potential influence of acquiescence set, the A-State scale has ten directly scored items and
ten reversed items. The A-Trait scale has seven reversed items and thirteen directly scored items.

Five of the items on the STAI are used in both scales with three being worded exactly the same and two containing the same key terms. The remaining fifteen items on each scale are significantly different in content to be regarded as independent items (Speilberger et al., 1969).

Test-retest reliability for the A-Trait Scale is rather high, ranging from .73 to .86 for periods of up to 104 days. The reliability coefficients for the A-State scale were low, with a median r of only .32. This was expected as A-State should be sensitive enough to the influence unique situational factors. With this transitory nature of anxiety, internal consistency would seem to be a more meaningful measure of the reliability of the A-State scales. The K-R coefficient ranged from .83 to .92 for A-state which is relatively high.

Evidence for the concurrent validity of the A-Trait scale is shown by a correlation of .80 with the IPAT anxiety scale and the Taylor Manifest Anxiety Scale (TMAS) (Speilberger, 1969). Both the IPAT and the TMAS are supposed to be measures of A-Trait Anxiety. Speilberger has concluded that all three of these scales can be considered A-Trait measures.
The evidence to indicate the construct validity of the A-State scale has been summarized by Speilberger et al. (1969). The A-State scale was administered in a single testing session to 197 undergraduate students under four different conditions. The first administration occurred at the beginning of the testing session (Normal Condition). The second administration of the scale followed a 10-minute period of relaxation training (Relax Condition). The third administration followed a 10-minute period in which the Ss worked on the Terman Concept Mastery Test, which was presented as a "relatively easy I.Q. test" (Exam Condition). The final administration followed immediately after the Ss viewed a stressful movie (Movie Condition) depicting several accidents in a woodworking shop.

The mean score for the A-State was lowest in the Relax Condition and highest after the Ss viewed the stressful film. In the Normal and Exam Conditions the scores were approximately the same for males and females, indicating that these conditions had a similar impact on both sexes. The Movie Condition was particularly upsetting for the females whereas the Relax Condition seemed most effective in reducing their emotional intensity. This condition suggests that the A-State scale is a sensitive measure of anxiety occurring under differing stimuli conditions and also suggests that females are more emotionally liable than males and/or that they are willing to report their feelings.
The Test Anxiety Scale (TAS) (Sarason, 1952) has been used a great deal in anxiety research. It purports to measure anxiety that results from a specific set of stress inducing circumstances that is from evaluation situations. The TAS is a questionnaire which consists of thirty-seven true or false items. The range of scores is from a low of one to a high of thirty-seven. The questionnaire contains questions about attitudes and experiences in three kinds of testing situations; the individual intelligence test, the group intelligence test, and course examinations. (See Appendix D for the TAS.)

Liebert and Morris (1967) did a factor analysis of the TAS and found that anxiety as measured by the TAS can be thought of as "two orthogonal factors," one being "worry" and the others "emotionality". Worry is defined as a lack of confidence, and emotionality as autonomic responses.

Split-half reliability of the TAS has generally produced a Spearman-Brown correlation of .91 while test-retest analysis on other groups has produced correlations around .82.

The validity of the TAS was summarized by Sarason et al. (1953). In an experiment the TAS was administered to every Yale freshman. Extreme high test anxious and low test anxious subjects were selected to participate in the study. They were split into two groups: expected to finish (ETF) and not expected to finish (NECTF). The ETF group
were told they would have no trouble finishing the test as any average college student could finish the test. The NETF group were told they could not possibly finish the test. In fact no one finished the test, it was impossible to. The test consisted of a modification of the Wechsler-Bellevue-Digit Symbol Subtest, a 50 second time limit was used for each of five trials. The results showed the high anxiety groups did significantly poorer than the low-anxious ETF group, although they did not differ significantly from the low-anxious NETF group.

Mandler and Sarason (1953) showed the TAS correlated highly with characteristics of a test anxious person. (e.g., task-irrelevant responses, self-centered feelings of inadequacy, attempts at leaving the situation, etc.)

Sarason has reported the correlation of the TAS and the Taylor Manifest Anxiety Scale (TMAS) in two separate studies. In one (Sarason, 1959) the correlation for males was .41, for females .49. In a later study (Sarason, 1961) these correlations were .46 and .53 respectively.

The S-R Inventory of Anxiousness (S-R)

S-R (Endler, Hunt and Rosenstein, 1962) employs a sample of 14 responses which represent, first, positive as well as negative excitement or drive and the commonly reported feeling of keen anticipatory excitement, secondly,
to sample the Ss perceptions of physiological responses and thirdly, to include some of the complaints that have been diagnostic in the Minnesota Multiphasic Personality Inventory and the Taylor Manifest Anxiety Scale. (See Appendix E for the S-R.)

The S-R Inventory employs a five-step scale, ranging from none to very much. Each subject is asked to register the felt intensity of his own response to the final exam situation.

The Alpha-Reliability for the S-R Inventory of Test Anxiety has been reported to range from .83 to .87 which shows it to be highly reliable. In two separate studies the coefficient alpha reliabilities for each of the 14 scales within the S-R range between a low of .64 and a high of .91. The reliability of the S-R is very high. The S-R has shown a correlation of .66 with the Test Anxiety Scale and has also shown a statistically significant correlation with the IPAT Anxiety Scale, the Taylor Manifest Anxiety Scale and the Gordon Sarason Anxiety Questionnaire.

The Anxiety Differential (AD) (Alexander & Husek, 1962) was developed to fill a need for an adequate verbal response measure of situational anxiety. (See Appendix F for the AD.)
The Ad was developed on the rationale that the person who is anxious for a short period is in a different state and perceives things differently from when he is not anxious. Among the changes produced by anxiety are changes in cognition, that is, changes in the meanings of various events, persons, objects and ideas. In other words the AD test items are designed to measure cognitive changes and those changes are influenced by changes in the nature of the anxiety.

The AD consists of an eighteen item semantic differential booklet which takes about five minutes to administer. Each item was presented in the following manner:

HANDS

tight: ___: ___: ___: ___: ___: ___: ___: loose

The semantic differential technique was used as it is especially sensitive to those aspects of cognition which Osgood et al., (1957) has labeled connotative ("the affective, feeling times of meaning"). In addition the semantic differential (Sd) is quick and easy to score. The AD, unlike the conventional use of the semantic differential has a large number of novel pairings of scales and concepts. (Sd: President Ford:effective-ineffective; AD:Germs:shallow-deep) These combinations make it difficult to fake as it is difficult for the subject to discern what was a good or desirable response.
The internal consistency of the Ad was examined by using Alpha Coefficients. The Alpha coefficients ranged between .58 and .80 with a median coefficient of .68. This would seem to indicate that the Ad possesses adequate internal consistency reliability.

The scores of highly anxious subjects were correlated with their scores on the anxiety factor of the Naulis-Green adjective checklist. The correlations between the adjective checklist measure ranged from a low of .48 to a high of .63. All of these correlations are significant beyond the .001 level of confidence.

Cronbach and Meehl (1955) stated that when there are no entirely adequate criteria available for defining the quality or attribute being measured, then construct validity becomes the primary method for establishing validity of a test. This seems to be the only reasonable method for the validation of measures of motivational states of anxiety. Although construct validity is a length process two pieces of relevant evidence are available (a) a factor analysis of the scale yielded one clear anxiety factor and (b) the positive correlation with the anxiety factor of the Naulis-Green adjective checklist support it. This checklist is a measure of momentary anxiety states and the positive correlation suggests the AD also measures momentary anxiety states.
Two studies examined the sensitivity of the AD to preexamination anxiety experienced in a college setting. (Husek and Alexander, 1963) In one study 112 male students were given the AD a few minutes before taking the final given in a course. A control group of Ss males responded to the AD during a regular class meeting. In study two, 126 males and 111 females in an introductory psychology class took the AD just prior to the final examination in the course. The control group consisted of 110 males and 70 females in another introductory psychology class. They responded to the AD in a regular class session. The results of studies one and two indicate that the AD is reasonably sensitive to pre-examination anxiety. The test was able to differentiate significantly between the anxiety and control groups. Earlier studies with the AD show it as sensitive as a one-time measure but that it was more sensitive to induced anxiety states if pre-post changes were measured (Alexander and Husch, 1962).

The AD is appropriate for research because, not only does it have adequate reliability and validity, but it is (1) of a nature that subjects are unlikely to falsify their responses, (2) not susceptible to response sets (3) scorable by an objective, nonjudgmental key, (4) easily administered to groups of any size, (5) short, and (6) inexpensive.
The Personal Beliefs Inventory (PBI)

The Personal Beliefs Inventory (PBI) (Hartman, 1968) is a 60-item, self administered objectively scored, 6-point rating scale (ranging from totally agree to totally disagree) for assessing specific levels of irrational thinking. (See Appendix G for the PBI.) Item selection (from a pool of 135 items) was based on item-total mean-score correlations in a sample of 500 college students. The PBI was then given to one group of 30 college students and readministered five days later. Analysis of scores yielded a test-retest reliability coefficient of .89 and a split half reliability of .95. Analysis of scores, after one week, of another group of 85 college students yielded a test-retest reliability coefficient of .91 and a split half reliability of .90. Hartman (1968) obtained the mean scores on the PBI of a sample of eight patients before and after undergoing 10 sessions of Rational Emotive Therapy and of a sample of 23 students in a psychopathology class which emphasized rational-emotive principles. The difference in pre-post treatment mean scores of the two groups were impressive, but no test of significant differences are reported. Hartman stated his findings "... have empirically shown the PBI to possess a high level of validity and reliability to be extremely sensitive to irrational thinking."
A recent study of Goldfried and Sobocinski (1975) found a positive relationship between the extent to which individuals held irrational beliefs and their scores on measures of test anxiety. It was also found that the Ss' tendency to view situations irrationally was related to the Ss' susceptibility to emotional upset in situations related to such expectations.

Tosi and Eshbaugh (1975) examined the construct validity of the PBI through a factor analytic study. As hypothesized, the hierarchical factor analysis revealed a general factor suggesting a basic or generalized attitude involving self worth. This analysis supported Hartman's idea that the PBI is a general measure of irrationality. In addition two second-level and four third-level factors were found. The second-level factors were depression and cognitive rigidity, while the third-level factors were associated with (a) achievement, (b) delay of gratification, (c) moral control, and (d) moral shame and guilt.

The PBI is a quick and easy instrument to administer and score and gives a general measure of irrationality. It also shows evidence of reliability and construct validity.

The Palmar Sweat Print (PSP)

The Palmar Sweat Print (PSP) (Silverman & Powell, 1942) was originated as a simple technique for obtaining finger sweat prints which proved useful as a measure of
emotional and motivational arousal and clinical anxiety (Bixenstine, 1955; Davis, 1957; Gladstone, 1953; Haywood, 1962; Molmo, 1965; Mowrer, 1953).

Sweating of the body occurs under many conditions, one of these is emotional, intellectual and sensory stimuli, which cause a type of sweating involving palms, soles, and axillae. This type of sweating is seen in both physiologic and disturbed states. Silverman and Powell (1942) state that emotional sweating is commonly seen in states of anticipation and has sometimes been referred to as anticipatory sweating. A student before an examination, an expectant father before the delivery of his child, or a drafter waiting for his number will show sweating particularly of the palms. The relationship of emotions to sweating was noted by Sanctorius (1970) in 1614, when the first scientific studies on perspiration were performed. Sanctorius observed "a body which is at rest whilst the mind is violently agitated has a stronger perspiration and less weight than a body that is strongly moved whilst the mind is at rest." Sweating of the palms differs from sweating in the general body surface. Krause (1942) found twice as many sweat glands per square area in the palm than anywhere else in the body, four times as many as on the chest, and over five times as many as on the back and buttock. Functionally, the amount of perspiration on the
palm is from five to ten times as great as that of the general body surface.

Also of significant importance is that, exposure to a high temperature does not augment sweating on the palms. Experimentally (Kuno, 1934) it has been demonstrated that palmar sweating is evoked by mental stimuli. For example, a problem in simple arithmetic will cause a distinct and measurable increase in sweat in the palms. In a relaxed state, such as sleep, the palms are dry. The palm is one of the few places where emotional sweating takes place, and is peculiarly an indicator of emotional disturbances. In anxiety neurosis, where autonomic phenomena are frequent, excessive sweating of the palms is seen (Solomon, 1934).

Palmar Sweating was administered according to the procedure described by Droppleman (1969). (See Appendix H for PSP procedure.) PSPs were taken of the right index finger of the left hand. The PSP prints were scored according to a fifteen point visual scale photograph (McNair personal communication)(see Appendix H). Interrater reliability with the scale has been consistently above .90. Twenty PSPs were randomly selected and independently rated by two upper-level nursing students who were not involved in the study. The inter-rater reliability was .94 for the pre-test PSPs and .92 for the post-test PSPs.
Lore (1966) found the PSP to measure reliably and validly the response in kindergarten children to a mildly anxiety arousing state. Paul (1966) found the technique differentially sensitive to changes in anxiety in response to four types of treatment of fear associated with public speaking.

McNair and Lipper (1972) suggest the PSP is excellent as an evaluation of anti-anxiety treatments with non-psychiatric populations. Pillard and Fisher (1967) found the PSP effective as a physiological measure to test the effects of anti-anxiety drugs. Droppleman and McNair (1972) found significant increases in palmar sweating and self-ratings of arousal prior to a simple public speaking performance.

In summary, the PSP is a valid, reliable, simple, objective, inexpensive and sensitive physiological measure of anxiety.

Subjects

During the Autumn Quarter, 1975, 153 subjects volunteered to participate in an experiment designed to help them better cope with test anxiety. No mention of hypnosis, nor any other specific method was made until each S was assigned to his particular treatment.

From the 153 volunteers, 48 persons were randomly selected to participate in the study. Subjects consisted
of 48 females, all of whom were nursing students at Grant Hospital School of Nursing. Table 2 contains a descriptive analysis of the subjects who participated in the study.

**Table 2**

Descriptive Analysis of the Subjects

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>RSDH</th>
<th>Hypnosis</th>
<th>Placebo</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Range</strong></td>
<td>16 - 21</td>
<td>17 - 19</td>
<td>17 - 21</td>
<td>17 - 19</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>18.5</td>
<td>19.1</td>
<td>19.5</td>
<td>18.9</td>
</tr>
<tr>
<td>Mode</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td><strong>Years in College</strong></td>
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<tr>
<td>Level I</td>
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<tr>
<td>Level II</td>
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<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Level III</td>
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<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>College X</td>
<td>2</td>
<td>1.9</td>
<td>1.9</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 3 presents a comparison of female undergraduate means and standard deviations, with those of its undergraduate female nursing students who were used as the sample for this study.

**Table 3**

Comparison of Means and Standard Deviations of Female Undergraduates in General and the Female Nursing Student Sample on the MAACL and the STAI.

<table>
<thead>
<tr>
<th></th>
<th>A-Trait Mean</th>
<th>A-Trait SD</th>
<th>A-State Mean</th>
<th>A-State SD</th>
<th>MAACL Mean</th>
<th>MAACL SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female Undergraduates</td>
<td>38.25</td>
<td>9.40</td>
<td>43.67</td>
<td>9.25</td>
<td>5.46</td>
<td>3.44</td>
</tr>
<tr>
<td>Female Nursing Students</td>
<td>63.40</td>
<td>9.32</td>
<td>66.31</td>
<td>12.61</td>
<td>17.11</td>
<td>3.46</td>
</tr>
</tbody>
</table>
Each subject was administered the Barber Suggestibility Scale (BSS) to determine their basal level of susceptibility. Each Ss was also administered the TAS, S-R, AD, STAI, PBI and the MAACL during a pretesting period which lasted approximately fifty minutes. Each Ss was also administered the PSP just prior to taking the midterm exam, which was arranged to fall the day after their pretesting. Just prior to the midterm exam each subject was seated, asked to close their eyes and imagine themselves taking a very important test. This was done to insure that the subjects were thinking about the exam situation thus controlling for a confounding variable. A palmar sweat (PSP) of the third finger of the left hand was also collected, according to the procedures suggested by Droppleman. (See Appendix H for the PSP procedure.)

Ss were then randomly assigned to a treatment process via a table of random numbers. Each Ss participated in six treatment sessions lasting approximately 60 minutes each. All treatment was completed within a six week period. All treatment took place in comfortable lounges at the Grant Hospital School of Nursing. The content for the treatment sessions was suggested by each subject's performance on the Self Directed Behavior Change Instrument (Tosi, 1973) and by Test Anxiety Theory, which was previously stated.
The therapists providing the treatment were two advanced doctoral students in Counseling at the Ohio State University. The ages of the therapists were 29 and 30. Both therapists have completed internships in counseling and psychotherapy and have had considerable training in Rational Emotive Therapy and hypnotherapeutic techniques.

Each therapist treated eighteen subjects, with an equal number of high and low susceptibilities across all treatments. Independent raters assessed randomly selected performances of each therapist to insure that the therapists adhered to the specific methodologies. (See Rating Scale for Therapists, Appendix I) Both raters were advanced Ph.D. students in the Faculty of Special Services. Each rater rated 20 randomly selected sessions. The Pearson Product Moment Correlations of the inter-reliability of each therapist's performance are:

Table 4

Pearson Product Moment Correlations of Inter-Rater Reliability for Therapists Treatment Performance

<table>
<thead>
<tr>
<th>Therapist</th>
<th>Inter-rater Reliability</th>
</tr>
</thead>
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<tr>
<td>1</td>
<td>.94</td>
</tr>
<tr>
<td>2</td>
<td>.91</td>
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</table>
Design of the Study

A 2X4X2X3 factorial design with one within-subjects variable (3 levels of a repeated measure) and 3 between-subjects variables (therapists, susceptibility and treatments) was used in analyzing the data (see Figure 1). All Ss were randomly assigned to one of four treatment modes, Rational Stage Directed Hypnotherapy, hypnosis only, placebo and a control group, with an equal number of high and low susceptibles in each treatment group. Each S received six treatments lasting approximately 60 minutes in length over a six-week period. All 48 subjects received the Barber Suggestibility Scale to determine their basal level of suggestibility, and all other pre, post and follow-up tests.
Figure I

Therapists

<table>
<thead>
<tr>
<th>Hi S₁</th>
<th>S₂</th>
<th>Hypnosis</th>
<th>Placebo</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lo S₁</td>
<td>S₂</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hi S₁</td>
<td>S₂</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lo S₁</td>
<td>S₂</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

RSDH
Followup Testing

Eight weeks after post-assessment, all post-assessment measures were administered to all Ss as a followup measure. The followup assessment coincided with the beginning of the Nursing School's first important examination. Results from this testing should thus indicate how the subjects felt about taking exams at a time when they experienced academic stress.

Treatments

Rational State Directed Hypnotherapy (RSDH)

The procedure described by Marzella (1975) was adapted to this study. RSDH is an integration of Rational Emotive Therapy with hypnosis while simultaneously guiding the subject through the growth stages of awareness, exploration, commitment to rational action, implementation, internalization, and change/or redirection.

The specific objectives for this treatment group were:

(1) to make Ss aware of the thoughts, self-verbalizations and self-instructions emitted prior to and in test situations which contribute to poor performance.

(2) to help Ss become aware of the irrationality of such self-verbalizations and self-instructions.
(3) to teach Ss to challenge and confront inappropriate self-instructions by giving Ss a more logical cognitive set towards test taking.

These objectives were carried out by teaching the subjects the essentials of Rational Emotive Theory, they were then asked to do a rational self analysis of their test anxiety using the Self-Directed Behavior Change Instrument (Tosi, 1973; See Appendix J).

Each subject was asked to visualize the test-taking situation, and after experiencing the emotional responses associated with exam taking, the subjects were then directed to challenge and confront their earlier identified irrational thoughts specific to the test taking situation; to rationally challenge them and to finally supplant them with more rational self talk.

The subjects were then hypnotized by a standard induction procedure (see Appendix K) and again directed to visualize the test-taking situation and to experience the resulting anxiety associated with test taking. As the subject engaged in more rational self talk, he was directed to experience the more positive affect elicited by the rational self talk. The therapist guided the Ss through each stage at the client's own pace. Thus if a particular client needed to explore more rational behaviors a number of different techniques for looking at the problem were suggested by the therapist during the exploratory stage.
The Ss were given a post-hypnotic suggestion to practice the RSDH procedure three times per week outside the sessions in order to facilitate change.

The hypnosis is expected to intensify the imagery and the rational restructuring process, allowing it to become more fully utilized and thus to hasten the implementation and internalization of more rational and self-enhancing thinking, feeling and responding. (See Appendix L for RSDH treatment plan and Appendix M for an example session.)

Maultsby (1971) suggests that the use of imagery is important in the learning of any new behavior. We learn a behavior by thinking about it and thus we can transfer it to actual behavior. Tosi (1974) also suggests the overall emotional effect of real or imagined stimuli are qualitatively the same. Therefore the client can learn to substitute more desirable thoughts, feelings and behaviors for undesirable ones via imagery.

**Hypnosis**

Ss in this group were administered a hypnosis only method. This group was essentially a control group for the effects of the hypnotic phenomena. This treatment consisted of administering a standardized hypnotic induction to the subjects. (See Appendix K) The subjects were told that hypnosis leads to relaxation which is antagonistic to anxiety and it was suggested that the induction would be enough to deal with test anxiety.
Placebo

_Ss_ in this group met and were given suggestions to relax and that talking about anxiety in general would lead to a decrease in physiological symptoms indicative of test anxiety. Therapists in this treatment were instructed not to answer any questions directly and to be extremely reflective and nondirective. The _Ss_ were not given any specific methodology to deal with test anxiety.

_Treatment Control_

Inclusion of this group allowed for assessment of changes in the self-report and physiological measures as a result of repeated measures of these variables. Twelve _Ss_ were informed that there was not enough space for them in the study but were asked to participate in the "ongoing research on study effectiveness" being conducted by the examiner. No expectation of future treatment was given to any subject in this group.

_Statistics_

Data collected in this study were analyzed by a 2X4X2X3 Multivariate Analysis of Variance with Repeated Measures. The Standard discriminant function analysis method of followup was used to compare all possible combinations of means following significant _F_ ratios for main effects and interactions (Tatsuoka, 1970).
Summary

Chapter III has presented the procedures and methodology of the study. It also contains a description of the sample, a descriptive analysis of the Ss, the pre, post and followup measures, therapists, design of the study, treatments and the statistical analysis of the data.
CHAPTER IV

ANALYSIS OF DATA

The purpose in this study was to determine the effects of Rational Stage Directed Hypnotherapy (RSDH) on the reduction of test anxiety of nursing students. Also of concern were the extent to which student susceptibility to hypnosis and the therapists contribute to the therapeutic process. The groups were identified as group one (Rational Stage Directed Hypnotherapy), group two (hypnosis only), group three (attention placebo) and group four (control).

The hypotheses were tested by three between-subjects, one within-subjects multivariate analysis of variance (MANOVA) with repeated measures. The three between-subjects variables consisted of four levels of treatments, two levels of therapists, two levels of susceptibility. The one within-subjects variable was three levels of a repeated measure. F-ratios were transformed from the Wilkes-Lamda criterion for each main effect and interaction using the Component Analysis of Variance program (CANOVA). In order to ascertain equivalence on subjectively experienced test anxiety for the four groups, one way analyses of variance were performed for each of
the eight dependent variables. The results show clearly
that there were no differences in the pre-treatment test
scores; the F-values, obtained were all nonsignificant.
Subsequent to significant MANOVA F-ratios for the treat­
ment x trials interaction, the Standard Discriminant
function analysis was used in post-hoc analysis (Tatsuoka,
1974).

There were eight dependent variables included in
this study. Each dependent variable was discussed in
light of the multivariate analysis of variance. A summary
table of each analysis was included and where statistical
significance was observed, a table of means was also in­
cluded.

A 2X2X4X3 MANOVA was used to evaluate the null hy­
pothesis of this study. Hypothesis number two states:

Susceptibility: Means representing test
anxiety in the self reported physiological
domains as measured by the STAI, AD, MAACL,
S-R Inventory, TAS, PBI, and PSP from groups
of subjects defined as high and low on the
Barber Suggestibility Scale (1965) over pre,
post I and post II conditions will not
differ significantly.

The multivariate difference for susceptibility
conditions can be accounted for by chance alone (F = 1.237,
P .319). Hypothesis number three showed a similar effect:

Therapists: Means representing test anxiety
in the self reported and physiological domains
of the STAI, MAACL, AD, S-R Inventory, TAS,
PBI and the PSP and from groups of subjects
within SRDH, Hypnosis, placebo and control having assigned therapists will not differ significantly across pre, post I and post II conditions.

The multivariate difference for therapists conditions can be accounted for by chance alone ($F = .940, P < .503$). These results therefore lead us to fail to reject the null hypothesis. The data suggests that susceptibility is not an important factor in test-anxiety or test-anxious individuals. Both high and low susceptibles were equally prone to be test anxious. The data also suggest that the therapists performed equally well across all groups and trials; therefore no significant differences were found. This results in a study which has successfully controlled for extraneous variables which might have interfered with the interpretation of the ensuing data.

The multivariate analysis of variance for differences in treatment main effects, trials main effects and an interaction effect between treatment trials was found to be significant ($F = 6.747, P < .001$; $F = 25.686$, $P < .001$ and $F = 7.546, P < .001$) by the Wilkes Lamda criterion. Tables 5, 6, and 7 present complete univariate F tests for treatments, trials and treatments x trials for each of the eight variables following the significant MANOVA F-ratios. These data reveal significant F-ratios for each of the eight dependent variables.
### TABLE 5

Univariate F Tests of Treatment X Trials Interaction  
(DF = 6, 64)

<table>
<thead>
<tr>
<th>Variable</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>P less than</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAACL</td>
<td>5790.355</td>
<td>965.060</td>
<td>52.582</td>
<td>.001</td>
</tr>
<tr>
<td>PBI</td>
<td>55583.109</td>
<td>9263.852</td>
<td>143.677</td>
<td>.001</td>
</tr>
<tr>
<td>PSP</td>
<td>451.431</td>
<td>75.239</td>
<td>72.229</td>
<td>.001</td>
</tr>
<tr>
<td>TAS</td>
<td>1505.438</td>
<td>250.906</td>
<td>52.555</td>
<td>.001</td>
</tr>
<tr>
<td>AD</td>
<td>5073.141</td>
<td>845.523</td>
<td>37.477</td>
<td>.001</td>
</tr>
<tr>
<td>S-R</td>
<td>2149.059</td>
<td>358.177</td>
<td>24.509</td>
<td>.001</td>
</tr>
<tr>
<td>ST</td>
<td>2790.365</td>
<td>465.061</td>
<td>20.718</td>
<td>.001</td>
</tr>
<tr>
<td>TR</td>
<td>1326.399</td>
<td>221.066</td>
<td>12.077</td>
<td>.001</td>
</tr>
</tbody>
</table>

**MAACL**

The MAACL was included in this study as a measure of general anxiety. The univariate F ratio for the MAACL was significant beyond the .001 level for both treatments and trials. Table 8 presents the total mean scores for Ss' performance on the MAACL by treatments. Inspection of these mean scores by treatments revealed that RSDH has the lowest mean score of anxiety as measured by the MAACL followed by the hypnosis group, the placebo group and the control group. MAACL mean scores for the significant treatment x trials interaction (F = 52.582, P < .001) are shown.
## TABLE 6

Univariate F Tests of Trials Main Effect  
(DF = 2, 64)

<table>
<thead>
<tr>
<th>Variable</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>P less than</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAACL</td>
<td>3912.538</td>
<td>1956.269</td>
<td>106.590</td>
<td>.001</td>
</tr>
<tr>
<td>PBI</td>
<td>37582.289</td>
<td>18791.145</td>
<td>291.440</td>
<td>.001</td>
</tr>
<tr>
<td>PSP</td>
<td>343.993</td>
<td>171.996</td>
<td>165.118</td>
<td>.001</td>
</tr>
<tr>
<td>TAS</td>
<td>1138.351</td>
<td>569.175</td>
<td>119.221</td>
<td>.001</td>
</tr>
<tr>
<td>AD</td>
<td>3415.831</td>
<td>1707.915</td>
<td>75.701</td>
<td>.001</td>
</tr>
<tr>
<td>S-R</td>
<td>776.596</td>
<td>388.298</td>
<td>26.570</td>
<td>.001</td>
</tr>
<tr>
<td>ST</td>
<td>1582.321</td>
<td>791.161</td>
<td>35.245</td>
<td>.001</td>
</tr>
<tr>
<td>TR</td>
<td>1244.339</td>
<td>622.170</td>
<td>33.989</td>
<td>.001</td>
</tr>
</tbody>
</table>
TABLE 7
Univariate F Tests of Treatments Main Effect
(DF = 3, 32)

<table>
<thead>
<tr>
<th>Variable</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>P less than</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAACL</td>
<td>8770.949</td>
<td>2923.651</td>
<td>35.005</td>
<td>.001</td>
</tr>
<tr>
<td>PBI</td>
<td>115371.437</td>
<td>38457.164</td>
<td>28.236</td>
<td>.001</td>
</tr>
<tr>
<td>PSP</td>
<td>842.555</td>
<td>280.852</td>
<td>49.200</td>
<td>.001</td>
</tr>
<tr>
<td>TAS</td>
<td>1778.084</td>
<td>592.695</td>
<td>6.331</td>
<td>.002</td>
</tr>
<tr>
<td>AD</td>
<td>9653.242</td>
<td>3217.749</td>
<td>22.808</td>
<td>.001</td>
</tr>
<tr>
<td>S-R</td>
<td>3118.594</td>
<td>1039.531</td>
<td>11.269</td>
<td>.001</td>
</tr>
<tr>
<td>ST</td>
<td>4967.145</td>
<td>1655.715</td>
<td>18.128</td>
<td>.001</td>
</tr>
<tr>
<td>TR</td>
<td>2164.265</td>
<td>721.422</td>
<td>10.520</td>
<td>.001</td>
</tr>
</tbody>
</table>
### TABLE 8

Mean Scores for Ss' Performance on the Multiple Affect Adjective Checklist by Treatments

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSDH</td>
<td>64.39</td>
</tr>
<tr>
<td>Hypnosis</td>
<td>76.22</td>
</tr>
<tr>
<td>Placebo</td>
<td>81.14</td>
</tr>
<tr>
<td>Control</td>
<td>85.19</td>
</tr>
</tbody>
</table>

in Table 9. These data show that Ss in RSDH and hypnosis rated themselves as less test anxious on the post test than on the pretest. Ss in the RSDH treatment continued

### TABLE 9

Mean Scores for Ss' Performance on the Multiple Affect Adjective Checklist by Treatment X Trials

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Pre</th>
<th>Trials Post I</th>
<th>Post II</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSDH</td>
<td>86.25</td>
<td>53.75</td>
<td>53.17</td>
</tr>
<tr>
<td>Hypnosis</td>
<td>83.25</td>
<td>71.31</td>
<td>74.36</td>
</tr>
<tr>
<td>Placebo</td>
<td>83.42</td>
<td>79.00</td>
<td>81.00</td>
</tr>
<tr>
<td>Control</td>
<td>83.42</td>
<td>85.92</td>
<td>86.25</td>
</tr>
</tbody>
</table>
to maintain a reduction in test anxiety after the termination of therapy while the clients who received hypnosis, placebo and no-treatment control tended to realize higher anxiety scores after the discontinuation of therapy.

The main effects which attained statistical significance (treatments, trials) cannot be interpreted because of the significant interaction between treatments and trials. Therefore, discriminant function analysis was used as a followup procedure to find out where the significance lies. See figure 2 for the discriminant function analysis graph of the significant interaction between treatments across trials. This analysis will be discussed in a later section.

Personal Beliefs Inventory

The PBI was included in this study as a measure of irrational thinking. The univariate F-ratio for the PBI was significant beyond the .001 level for both treatments and trials. Table 10 presents the total mean scores for Ss performance on the PBI by treatments.
TABLE 10

Mean Scores for Ss' Performance on the Personal Beliefs Inventory by Treatments

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSDH</td>
<td>145.2</td>
</tr>
<tr>
<td>Hypnosis</td>
<td>183.7</td>
</tr>
<tr>
<td>Placebo</td>
<td>211.5</td>
</tr>
<tr>
<td>Control</td>
<td>216.5</td>
</tr>
</tbody>
</table>

These data reveal that the RSDH group has the lowest mean score on the PBI (the lower the score the more rational the thinking), followed by the hypnosis group, the placebo group and the control group.

PBI mean scores for the significant treatment x trials interaction ($F = 143.677, P < .001$) are shown in Table 11. These data show that Ss in RSDH and hypnosis rated themselves as holding to fewer irrational ideas on the post test than on the pretest.
TABLE 11

Mean Scores for Ss' Performance on the Personal Beliefs Inventory by Treatment x Trials

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Pre</th>
<th>Trials Post I</th>
<th>Post II</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSDH</td>
<td>212.5</td>
<td>113.5</td>
<td>109.7</td>
</tr>
<tr>
<td>Hypnosis</td>
<td>208.2</td>
<td>171.6</td>
<td>171.5</td>
</tr>
<tr>
<td>Placebo</td>
<td>214.7</td>
<td>205.7</td>
<td>214.1</td>
</tr>
<tr>
<td>Control</td>
<td>212.8</td>
<td>218.2</td>
<td>218.4</td>
</tr>
</tbody>
</table>

Ss in RSDH treatment continued to reduce their holding to irrational beliefs after termination of therapy. The clients in the hypnosis group continued to maintain their reduction of irrational beliefs after the termination of therapy, while clients in the placebo and control groups continued to maintain their pretreatment adherence to irrational ideas and beliefs.

Palmar Sweat Print

The palmar sweat print was included in this study as a sensitive physiological measure of test anxiety. For both treatments and trials a significant univariate F-ratio was found for the PSP ($F = 49.2$, $P < .001$). The total mean scores for the Ss' performance on the PSP by treatments are presented in Table 12.
TABLE 12

Mean Scores for Ss' Performance on the Palmar Sweat Print by Treatments

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSDH</td>
<td>7.27</td>
</tr>
<tr>
<td>Hypnosis</td>
<td>11.81</td>
</tr>
<tr>
<td>Placebo</td>
<td>13.08</td>
</tr>
<tr>
<td>Control</td>
<td>13.25</td>
</tr>
</tbody>
</table>

The results of these data show that the RSDH group had the lowest mean score on the PSP of the four treatment groups, while the hypnosis group ranked second. Both the placebo group and the control group had approximately the same mean scores for the PSP.

PSP mean scores for the significant treatment x trials interaction ($F = 72.229, P < .001$) are presented in Table 13.
TABLE 13

Mean Scores for Ss' Performance on the Palmar Sweat Print by Treatments x Trials

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Pre</th>
<th>Trials Post I</th>
<th>Post II</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSDH</td>
<td>13.67</td>
<td>4.08</td>
<td>4.08</td>
</tr>
<tr>
<td>Hypnosis</td>
<td>13.33</td>
<td>10.38</td>
<td>11.82</td>
</tr>
<tr>
<td>Placebo</td>
<td>13.58</td>
<td>12.33</td>
<td>13.33</td>
</tr>
<tr>
<td>Control</td>
<td>13.50</td>
<td>13.17</td>
<td>13.08</td>
</tr>
</tbody>
</table>

The results of these data show that Ss in an RSDH group had a mean change from pretest to post test of 8.8 points. The clients in the hypnosis group had a mean change of 3.95 points, the placebo group decreased 1.25 points and the control group decreased .33 points. Ss in the RSDH group maintained their reduction of physiologically measured anxiety after the termination of therapy, while the clients in both the hypnosis group and the placebo group showed increases on this physiological instrument after the termination of therapy. The control group stayed fairly constant across pre, post I and post II.

Test Anxiety Scale

A significant univariate F-ratio was found for the TAS (F = 6.331, P < .002) for both treatments and trials.
The total mean scores for the Ss performance on the TAS by treatment are presented in Table 14.

**TABLE 14**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSDH</td>
<td>16.31</td>
</tr>
<tr>
<td>Hypnosis</td>
<td>21.53</td>
</tr>
<tr>
<td>Placebo</td>
<td>24.31</td>
</tr>
<tr>
<td>Control</td>
<td>25.39</td>
</tr>
</tbody>
</table>

Table 14 shows again that the RSDH group continues to consistently have lower mean scores on all of the dependent variables. The rankings of the groups have also remained consistent with the hypnosis group holding the second lowest mean score followed by the placebo and control groups in that order.
<table>
<thead>
<tr>
<th>Treatment</th>
<th>Pre</th>
<th>Trials</th>
<th>Post I</th>
<th>Post II</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSDH</td>
<td>27.67</td>
<td>10.67</td>
<td>10.58</td>
<td></td>
</tr>
<tr>
<td>Hypnosis</td>
<td>25.17</td>
<td>18.54</td>
<td>21.09</td>
<td></td>
</tr>
<tr>
<td>Placebo</td>
<td>25.17</td>
<td>22.25</td>
<td>25.50</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>25.25</td>
<td>25.42</td>
<td>25.50</td>
<td></td>
</tr>
</tbody>
</table>

Table 15 presents TAS mean scores for the significant treatment x trials interaction (F = 52.555, P < .001). These data reveal that Ss in RSDH, hypnosis and the placebo groups rated themselves as being less test anxious on the post test than on the pretest, while the control group essentially did not change. Two months after termination of treatment the Ss in the RSDH group maintained their rating of being less test anxious, while the hypnosis group had a mean increase of 2.55 points and the placebo group had a mean increase of 2.25 points. The clients in the control group remained consistent across pre, post I and post II.

**Anxiety Differential**

The anxiety differential was included in this study as a measure of cognitively experienced test anxiety. Table
16 presents the mean scores for Ss' performance on the AD by treatments following a significant univariate analysis of variance ($F = 22.808, P < .001$). These data also show the same trend as the previous four dependent variables with the RSDH treatment group rating themselves as less test anxious than the other three groups, the hypnosis treatment group being lower than the placebo and control groups. The placebo group rated themselves lower on test anxiety than the control group.

**TABLE 16**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSDH</td>
<td>47.56</td>
</tr>
<tr>
<td>Hypnosis</td>
<td>59.75</td>
</tr>
<tr>
<td>Placebo</td>
<td>63.97</td>
</tr>
<tr>
<td>Control</td>
<td>69.89</td>
</tr>
</tbody>
</table>

Mean scores on the AD for the significant treatment x trials interaction ($F = 37.477, P < .001$) can be seen in Table 17.
TABLE 17

Mean Scores for Ss' Performance on the Anxiety Differential by Treatments x Trials

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Pre</th>
<th>Post I</th>
<th>Post II</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSDH</td>
<td>67.50</td>
<td>37.42</td>
<td>37.75</td>
</tr>
<tr>
<td>Hypnosis</td>
<td>66.67</td>
<td>54.31</td>
<td>58.64</td>
</tr>
<tr>
<td>Placebo</td>
<td>66.83</td>
<td>60.25</td>
<td>64.83</td>
</tr>
<tr>
<td>Control</td>
<td>67.50</td>
<td>72.17</td>
<td>70.00</td>
</tr>
</tbody>
</table>

These data reveal that Ss in the RSDH treatment group had a mean change from pretest to post test of 30 points. The hypnosis treatment group decreased 12 points; the placebo group decreased six points and the control group increased in their ratings of anxiety by five points. At the two month followup test after termination of therapy, the RSDH treatment group maintained lowered rating of cognitively experienced anxiety, while both the hypnosis and placebo treatment groups increased in their ratings about four points. The control group decreased two points which was in-between their ratings in the pre and post tests.

S-R Inventory of Test Anxiety

The univariate F-ratio for the S-R Inventory was significant for both treatments and trials (F = 11.269,
Table 18 presents the mean scores for Ss' performance on the S-R Inventory by treatments.

**TABLE 18**

Mean Scores for Ss' Performance on the S-R Inventory of Test Anxiety

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSDH</td>
<td>35.42</td>
</tr>
<tr>
<td>Hypnosis</td>
<td>41.50</td>
</tr>
<tr>
<td>Placebo</td>
<td>45.56</td>
</tr>
<tr>
<td>Control</td>
<td>47.61</td>
</tr>
</tbody>
</table>

Inspection of these mean scores by treatments revealed that the RSDH treatment group again had the lowest mean score of anxiety as measured by the S-R Inventory of anxiety. The hypnosis group was second, the placebo was third and the control group was fourth. The RSDH treatment group consistently had lower reported anxiety scores than the other three treatments. The S-R Inventory's mean scores on the significant treatment x trials interaction (F = 24.509, P < .001) are shown in Table 19.
TABLE 19

Mean Scores for Ss' Performance on the
S-R Inventory of Test Anxiety by Treatments x Trials

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Pre</th>
<th>Trials</th>
<th>Post I</th>
<th>Post II</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSDH</td>
<td>46.67</td>
<td>29.83</td>
<td>29.75</td>
<td></td>
</tr>
<tr>
<td>Hypnosis</td>
<td>45.58</td>
<td>37.62</td>
<td>41.64</td>
<td></td>
</tr>
<tr>
<td>Placebo</td>
<td>45.17</td>
<td>45.42</td>
<td>46.08</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>45.17</td>
<td>48.75</td>
<td>48.92</td>
<td></td>
</tr>
</tbody>
</table>

Inspection of these data show that Ss in the RSDH treatment group and the hypnosis group rated themselves as less anxious on the post test than on the pretest. The RSDH group continued to have a much lower rating than the hypnosis only group. The placebo treatment group stayed consistent across pretest, post test I and post test II. The no treatment control group showed an increase in reported anxiety on the post test I and maintained this same level at a follow-up test two months after treatments had been terminated. While both the RSDH and hypnosis only treatment groups showed decreases in reported test anxiety on the post test I, the RSDH group maintained this level after two months while the hypnosis group showed an increase in reported anxiety.
The State-Trait Anxiety Inventory was included in this study because it yields two separate measures; state and trait anxiety. The univariate F-ratio for the STAI (state and trait) was significant beyond the .001 level for both treatments ($F = 18.12, F = 10.52$) and trials ($F = 35.2, F = 3.39$). Tables 20 and 21 present the total mean scores for Ss' performance on the State-Trait Anxiety Inventory by treatments. The results of these data continue to show the same trends as the other six dependent variables. The RSDH treatment group continues to have the lowest mean score followed by the hypnosis group, the placebo group and the control group. This trend occurred in both measures of state and trait anxiety. State and Trait mean scores for the significant treatment x trials interactions ($F = 20.718, P < .001; F = 12.077, P < .001$) are shown in Tables 22 and 23. The results of this interaction show that Ss in the RSDH, hypnosis and placebo groups rated themselves as less test anxious on the post test than on the pretest on both state and trait measures of anxiety. The RSDH treatment group showed the greatest decrease in anxiety with the hypnosis group rated second and the placebo group rated third. The control group remained static across pretest, post test I and post test II. Ss in the RSDH treatment continued to maintain a reduction in test anxiety on a
followup test two months after therapy had been terminated. This occurred on both state and trait measures of anxiety. Both the hypnosis and placebo treatment groups showed increases in reported anxiety on the followup test for both state and trait measures of anxiety.

TABLE 20

Mean Scores For Ss' Performance on the State-Trait Anxiety Inventory - State by Treatments

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSDH</td>
<td>51.69</td>
</tr>
<tr>
<td>Hypnosis</td>
<td>63.81</td>
</tr>
<tr>
<td>Placebo</td>
<td>65.31</td>
</tr>
<tr>
<td>Control</td>
<td>66.22</td>
</tr>
</tbody>
</table>

TABLE 21

Mean Scores For Ss' Performance on the State-Trait Anxiety Inventory - Trait by Treatments

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSDH</td>
<td>54.47</td>
</tr>
<tr>
<td>Hypnosis</td>
<td>57.03</td>
</tr>
<tr>
<td>Placebo</td>
<td>61.58</td>
</tr>
<tr>
<td>Control</td>
<td>64.44</td>
</tr>
</tbody>
</table>
TABLE 22
Mean Scores For Ss' Performance on the State-Trait Anxiety Inventory - State by Treatments X Trials

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Pre</th>
<th>Trials Post I</th>
<th>Post II</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSDH</td>
<td>66.67</td>
<td>44.08</td>
<td>44.33</td>
</tr>
<tr>
<td>Hypnosis</td>
<td>67.25</td>
<td>60.85</td>
<td>63.55</td>
</tr>
<tr>
<td>Placebo</td>
<td>65.25</td>
<td>63.75</td>
<td>66.92</td>
</tr>
<tr>
<td>Control</td>
<td>66.08</td>
<td>65.67</td>
<td>66.92</td>
</tr>
</tbody>
</table>

TABLE 23
Mean Scores For Ss' Performance on the State-Trait Anxiety Inventory - Trait by Treatments X Trials

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Pre</th>
<th>Trials Post I</th>
<th>Post II</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSDH</td>
<td>65.08</td>
<td>49.42</td>
<td>48.92</td>
</tr>
<tr>
<td>Hypnosis</td>
<td>61.75</td>
<td>53.69</td>
<td>55.82</td>
</tr>
<tr>
<td>Placebo</td>
<td>62.33</td>
<td>59.75</td>
<td>62.67</td>
</tr>
<tr>
<td>Control</td>
<td>64.42</td>
<td>63.42</td>
<td>65.50</td>
</tr>
</tbody>
</table>

The MANOVA for differences in trials main effects was found to be significant ($F = 25.686, P < .001$) by the Wilkes Lambda criterion. Table 5 presents complete univariate
F-tests for each dependent variable. All eight univariate F-ratios were significant beyond the .001 level. Table 24 presents the mean scores for Ss' performance on each of the eight dependent variables by trials.

**TABLE 24**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre</th>
<th>Post I</th>
<th>Post II</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAACL</td>
<td>84.08</td>
<td>72.47</td>
<td>73.68</td>
</tr>
<tr>
<td>PBI</td>
<td>212.1</td>
<td>177.1</td>
<td>178.6</td>
</tr>
<tr>
<td>PSP</td>
<td>13.52</td>
<td>10.0</td>
<td>10.55</td>
</tr>
<tr>
<td>TAS</td>
<td>25.81</td>
<td>19.20</td>
<td>20.66</td>
</tr>
<tr>
<td>AD</td>
<td>67.12</td>
<td>56.00</td>
<td>57.79</td>
</tr>
<tr>
<td>S-R</td>
<td>45.65</td>
<td>40.35</td>
<td>41.60</td>
</tr>
<tr>
<td>ST</td>
<td>66.31</td>
<td>58.63</td>
<td>60.36</td>
</tr>
<tr>
<td>TR</td>
<td>63.40</td>
<td>56.51</td>
<td>58.28</td>
</tr>
</tbody>
</table>

**Discriminant Function Analysis**

Although the data presented strongly suggest the superiority of RSDH treatment, the data does not show which specific levels of the treatment variable are different from one another, nor does the data show whether the treatment groups differ on one dependent variable or on all of them. Finally, it does not indicate which specific levels
of the trials variable are different from one another. A follow-up test is needed to determine the answer to the above questions. The only legitimate post-hoc analysis for a multivariate analysis of variance is the discriminant function analysis (Tatsouka, 1970).

Figure 2 presents a graph of the standard discriminant scores for the eight dependent variables combined for each group across the pre-test, post test I and the post test II. Inspection of the results shows the RSDH treatment group to have been significantly more effective than hypnosis only, placebo and control groups on the post test I. The hypnosis only group is shown to be more effective than either group three or group four.

The placebo group and the control group were both essentially as effective in reducing test anxiety. The placebo group reduced anxiety slightly, while Ss in the control group increased in anxiety from the pre-test to the post test I. Two months after the termination of treatments a follow-up test was given which consisted of the same eight dependent variables. The discriminant function analysis shows the RSDH group as having maintained its large decrease in test anxiety as well as a further slight decrease in test anxiety. The hypnosis only group also maintained its large decrease in test anxiety over the follow-up period. Both the placebo group and the control
group increased in test anxiety over the two month post-treatment period.

By calculating the standardized discriminant function coefficients (SDFC) for each of the eight dependent variables, we are able to determine the relative contribution of each variable to the overall significance of the discriminant function analysis. The four most important variables are the personal beliefs inventory (SDFC = 5.51.) which contributed most to the significant effects, the anxiety differential (SDFC = 1.52) which contributed second most to the significant effects; third is the test anxiety scale (SDFC = 1.162) and fourth is the palmar sweat print (SDFC = 1.147). The overall results show the RSDH and hypnosis treatments as being effective in reducing test anxiety and that the RSDH treatment is significantly more effective than hypnosis only treatment.
FIG. 2. DISCRIMINANT FUNCTION ANALYSIS
CHAPTER V
SUMMARY, CONCLUSIONS, RECOMMENDATIONS
AND INTERPRETATIONS

This Chapter is divided into four parts, summary, conclusions, recommendations and interpretations. The summary contains a brief overview of the study and the conclusions present inferences as a result of data gathered in the study. Recommendations include statements of further research of rational stage directed hypnotherapy as an approach to anxiety reduction. The final section, interpretation, is an extrapolation of the study on the basis of the writer's feelings and beliefs.

Summary

The purpose of this study was to examine the effects of rational stage directed hypnotherapy on the reduction of test anxiety of nursing school students. The feasibility of this approach to test anxiety reduction was examined by comparing the reduction of anxiety of a rational stage directed hypnotherapy experimental group with three other control groups: hypnosis only group, attention placebo group and a waiting list control group. Students comprising the sample were females enrolled in Grant Hospital School of Nursing during the autumn quarter, 1975.
Forty-eight female nursing students comprised the subjects for this experiment. Each subject was administered the Barber Suggestibility Scale (BSS) to determine their basal level of hypnotic susceptibility. Following the administration of the BSS, all subjects were administered the MAACL, PBI, PSP, TAS, AD, S-R, and the STAI. Ss were then randomly assigned to one of four treatment groups. The treatment groups met for six one-hour sessions.

A 2X2X4X3 multivariate analysis of variance with repeated measures was used to test the hypothesis of this study. One way analysis of variance was performed for each of the eight dependent variables. The results show clearly that there were no differences in the pre-treatment test scores; the F-values obtained were all nonsignificant.

The general hypotheses tested by this study consisted of three main effects hypotheses and one interaction hypothesis. The three main effects hypotheses were concerned with the effects of therapists, treatments, and susceptibility upon the reduction of test anxiety in both the self-report and physiological domains. The interaction hypothesis predicted that Ss' mean scores on the test anxiety measures, from groups of Ss defined in terms of ordinary combination of treatment, hypnotic susceptibility and therapists, would not differ significantly from the means expected from the simple addition of the appropriate main effects.
Conclusions

The final results of the MANOVA failed to reject the null hypotheses for two of the main effects hypotheses, therapists \( (P = .503) \) and hypnotic susceptibility \( (P = .319) \); and the interaction hypotheses. The failure to reject the null hypothesis for the hypnotic susceptibility main effect demonstrates that both high and low susceptibles are equally prone to be test anxious. The null hypothesis for the therapists main effects reveals no significant differences between therapists and their presentation of the experimental therapy procedures, this finding is in agreement with the high interrater correlation of therapists performance presented in Chapter 3 (see Table 3). The failure reject the null hypotheses for interaction disavows the effects of treatments qualified by differential effects of therapists and susceptibility.

A significant main effect was found for treatments \( (P < .001) \) and trials \( (P < .001) \), while a significant interaction was found between treatments across trials \( (P < .001) \). Although a significant main effect for treatments was obtained, the means cannot be meaningfully interpreted as there was a significant interaction between treatments across trials. Since an analysis of variance of each dependent variable showed no significant differences
between groups on the pre-test then a look at the post-
test and follow-up test for any differences is indicated. The univariate F-ratios for all of the eight dependent
variables were found to be significant beyond the .001.
Inspection of mean scores for each dependent variable
for treatments across trials reveals the RSDH treatment
group as having the greatest mean reduction in test
anxiety. The results of this analysis show a fairly
static trend, with the hypnosis only group ranking second,
also showing a large reduction in reported test anxiety,
but not nearly as large as the RSDH group. The placebo
group ranked third with only a slight decrease in test
anxiety, while the control group showed a very slight
increase in test anxiety. Probably the most interesting
finding of this study is the decrease in test anxiety over
the follow-up test for the RSDH group. The RSDH treatment
group not only maintained the decrease in self-reported
anxiety over the follow-up test, but also continued to
decrease slightly in reported test anxiety on four of the
dependent variables. This result suggests that Ss who
received the RSDH treatment were able to internalize new
philosophies and cognitive attitudes towards test taking
and to maintain these attitudes. The hypnosis only group
showed a slight increase in reported test anxiety on many
of the dependent variables and also showed a slight decrease
on other variables for the follow-up test. Both the placebo and control groups increased in reported test anxiety during the two months after treatment had been terminated. Following a significant F-ratio for the treatments across trials it did not show which levels of the treatment variable differ from each other nor whether the treatment groups differ across levels of trials. There was a need to know which dependent variables contributed most to the significant effect of the MANOVA. The only legitimate followup procedure for the MANOVA is the discriminant function analysis. The results of the discriminant function analysis show the RSDH treatment being significantly more effective than hypnosis only, placebo and control groups. The RSDH group also showed a slight decrease in anxiety two months after treatments had been terminated. The hypnosis treatment was significantly better than both the placebo and control groups in relieving test anxiety. The hypnosis treatment also showed a slight decrease in anxiety on the followup measure. Both the placebo and control groups were not significantly different across post-test and followup. Although the placebo group showed a slight decrease in anxiety on the post-test, for the followup test the group reverted to the pre-test mean. The control group increased slightly in anxiety on both the post-test and followup.
In order to determine which variables contributed most to the significant effect, a standardized discriminant function coefficient (SDFC) was calculated for each dependent variable. Although all eight dependent variables contributed to the overall significant effect, four variables stood out as contributing most to the significant effect. The four variables in order of relative contribution were: the personal beliefs inventory (SDFC = 5.51), the anxiety differential (SDFC = 1.52), the test anxiety scale (SDFC = 1.162), and the palmar sweat print (SDFC = 1.147). The results of these data are highly interesting and relevant. These results show the most important factor in the reduction of test anxiety was in the personal beliefs inventory, a measure for assessing specific levels of irrational thinking. The RSDH treatment group focused on changing irrational beliefs, and the data demonstrate that it was extremely effective in doing so. Although the hypnosis treatment group's effectiveness did not approach the RSDH group, it was significantly effective in reducing test anxiety. Examination of the SDFC again suggests that the reason the hypnosis treatment was effective was because of the changing of the cognitive element or the level of irrational thinking. To further substantiate this claim, the variable whose relative contribution was second to the PBI was the anxiety differential.
The AD is a measure of situational anxiety and was designed to measure cognitive changes, changes in the meanings of various events, persons, objects and ideas. Among the other two large contributors, the test anxiety scale measures worry and emotionality, and the palmar sweat print measures actual physiological changes in the test taking situation.

**Recommendations**

The following recommendations are made as a result of this study:

1. The use of Rational Stage Directed Hypnotherapy with other types of behavioral and emotional disorders is suggested by the highly significant results of this study.

2. The use of RSDH with other types of behavioral and emotional disorders is suggested by the feedback gathered from subjective reports which indicates a rather high generalization effect to other types of emotional problems.

3. That tests measuring performance be used as dependent variables for the pretest, posttest and followup. These tests would provide information as to whether performance would be increased by a reduction in test anxiety.
4. That a study be conducted to compare the effects of individual and group approaches to the use of rational stage directed hypnotherapy. The writer feels that individual RSDH would not differ significantly from group administered RSDH.

5. The study should be replicated using a different population.

Interpretations

The following interpretations were made as a result of this study:

1. Rational Stage Directed Hypnotherapy is an extremely effective treatment for the reduction of test anxiety as revealed by the statistical data and as revealed by the comments of the experimental subjects.

2. Hypnosis only is also effective in reducing test anxiety, though not as effective as the RSDH treatment.

3. The standardized discriminant function coefficient identified four dependent variables as contributing most to the overall significance of the MANOVA. These variables ranked in the order of their relative contribution are: the personal beliefs inventory, the anxiety differential, the test anxiety scale and the palmar sweat print. This result shows the major contributing factor in the reduction of test anxiety in this study was the decrease in the levels of irrational thinking.
The anxiety differential is a measure of cognitively experienced anxiety, the test anxiety scale is made up of two factors "worry" and "emotionality." Worry is defined as a cognitive lack of confidence, and emotionality as physiological responses. The fourth most important variable is the palmar sweat print which is a sensitive physiological measure. The RSDH treatment was effective because it specifically intervened in the cognitive, affective and physiological domains. The hypnosis treatment intervened only at the physiological domain but also was effective in changing the cognitive component of the Ss. This result fits very well into the theoretical and philosophical assumptions of the RSDH treatment. In most psychological and physiological disorders, the operation of cognitive factors outweighs the realistic external stresses. The meaning attached to particular types of experience is the effective agent in converting a relatively innocuous situation into a stressful situation. The overestimation of the danger and the underestimation of the individuals' coping capacity produces high levels of anxiety and autonomic arousal. The secondary phase of this psychological and physiological disorder is the exacerbation cycle (Beck, 1972). The threatening content of the ideation leads to anxiety. Feedback of the cues of anxiety is automatically "read"
as a danger signal, thus producing additional anxiety. Furthermore, the physiological symptoms are similarly interpreted as a threat which also evokes anxiety. Consequently, a continuous spiraling of cognition-anxiety physiological symptoms are similarly interpreted as a threat which also evokes anxiety. Consequently, a continuous spiraling of cognition-anxiety physiological symptoms is procuded (Beck, 1972). See Figure 3.

![Figure 3. Feedback among systems.](image)

The clinical implications of this model are apparent. It is necessary to break up the primary or secondary spiral (Beck, 1972). Intervention at any of the points in the cycle would be beneficial. The client could be temporarily removed from the anxiety-producing situation, or his tendency to magnify the danger of external events may be modified by cognitive
therapy (Beck, 1970), or his anxiety may be reduced by the use of drugs, hypnosis or relaxation training -- RSDH combines hypnosis with cognitive therapy which results in a larger reduction of anxiety. The hypnosis treatment reduced the Ss' physiological symptoms which resulted in breaking up the spiral and successfully modified the cognitive interpretation of these symptoms as threatening. Thus the hypnosis treatment also modified some aspects of cognition.

4. Rational stage directed hypnotherapy is an effective short term approach to psychotherapy. This is supported by the statistical data and from the subjective feedback from subjects and experimenters which could offer a savings of time and money for subjects and therapists.

5. Although rational stage directed therapy is not a panacea for all emotional and psychological disturbances it has shown to be a viable therapeutic method. The evidence for the generalization of the effects of RSDH suggest that it may be effective in treating other emotional disturbances.
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APPENDIX A

EIGHT TEST—SUGGESTIONS

1. Arm Lowering. "Hold your right arm straight out in front of you like this." (Guide the subject to extend the right arm directly in front of body at shoulder height and parallel to the floor.) "Concentrate on your arm and listen to me."

   (Begin timing.) "Imagine that your right arm is feeling heavier and heavier, and that it's moving down and down. It's becoming heavier and heavier and moving down and down. It weighs a ton! It's getting heavier and heavier. It's moving down and down, more and more, coming down and down, more and more; it's heavier and heavier, coming down and down, more and more, more and more." (End 30 seconds.)

   "You can relax your arm now." (If necessary, ask the subject to lower the right arm.)

   Objective score criterion: 1 point for response of 4 inches or more. (Response is measured by placing a ruler near the subject's hand at the beginning of the suggestions and noting degree of displacement at the end of the 30-second suggestion period.)

2. Arm Levitation. "(Keep your eyes closed and) put your left arm straight out in front of you in the same way. Concentrate on your arm and listen to me."

   (Begin timing.) "Imagine that the arm is becoming lighter and lighter, that it's moving up and up. It feels as if it doesn't have any weight at all, and it's moving up and up, more and more. It's as light as a feather, it's weightless and rising in the air. It's lighter and lighter, rising and lifting more and more. It's lighter and lighter and moving up and up. It doesn't have any weight at all and it's moving up and up, more and more. It's lighter and lighter, moving up and up, more and more, higher and higher." (End 30 seconds.)

   "You can relax your arm now." (If necessary, ask the subject to lower his arm.)

   Objective score criterion: 1 point for response of 4 inches or more during 30-second suggestion period.

3. Hand Lock. "Keep your eyes closed.) Clasp your hands together tightly, and interlace the fingers." (If
necessary, the experimenter states, "Press your hands together, with palms touching," and assists the subject to interlock the fingers and to bring the palms together.) "Put them in your lap. Concentrate on your hands and hold them together as tightly as you can."

(Begin timing.) "Imagine that your hands are two pieces of steel that are welded together so that it's impossible to get them apart. They're stuck, they're welded, they're clamped. When I ask you to pull your hands apart they'll be stuck and they won't come apart no matter how hard you try. They're stuck together; they're two pieces of steel welded together. You feel as if your fingers were clamped in a vise. Your hands are hard, solid, rigid! The harder you try to pull them apart, the more they will stick together! It's impossible to pull your hands apart! The more you try, the more difficult it will become. Try; you can't." (End 45 seconds.)

(Five-second pause) "Try harder; you can't."

(10-second pause) "You can unclasp your hands now."

Objective score criteria: 1/2 point for incomplete separation of the hands after 5-second effort; 1 point for incomplete separation after 15-second effort.

4. Thirst "Hallucination." ("Keep your eyes closed.") (Begin timing.) "Imagine that you've just finished a long, long walk in the hot sun. You've been in the hot sun for hours, and for all that time you haven't had a drink of water. You've never been so thirsty in your life. You feel thirstier and thirstier. Your mouth is parched, your lips are dry, your throat is dry. You have to keep swallowing and swallowing. You need to moisten your lips. (3-second pause) You feel thirstier and thirstier, drier and drier. Thirstier and thirstier, dry and thirsty. You're very, very thirsty! Dry and thirsty! Dry and thirsty!" (End 45 seconds.) "Now, imagine drinking a cool, refreshing glass of water." (5-second pause)

Objective score criteria: 1/2 point if the subject shows swallowing, moistening of lips, or marked mouth movements; additional 1/2 point if the subject indicates during the "post-experimental" questioning that he became thirsty during this test (e.g., "I felt dry," "I was parched," "I felt somewhat thirsty"). (See "post-experimental" questions for final scoring criteria on this test.)

5. Verbal Inhibition. "Keep your eyes closed." (Begin timing.) "Imagine that the muscles in your throat and jaw are solid, and rigid, as if they're made of steel. They're so solid and so rigid that you can't speak. Every muscle in your throat and mouth is so tight and so rigid that you can't say your name. The harder you try to say your name,
the harder it becomes! You can't talk! Your larynx has tightened up; your throat and jaw feel as if they are in a vise. Your throat is clamped so tightly that you can't talk; you can't say your name. The harder you try, the harder it will be. It's useless; the words won't come out; you can't speak your name; it's impossible to talk! The harder you try to say your name, the harder it will become. Try; you can't." (End 45 seconds.)

(5-second pause) "Try harder; you can't." (10-second pause) "You can say your name now."

Objective score criteria: 1/2 point if the subject does not say his name after 5-second effort; 1 point if he does not say his name after 15-second effort.

6. Body Immobility. (Keep your eyes closed.) (Begin timing.) "Imagine that for years and years you've been sitting in that chair just as you are now. Imagine that you've been sitting in that chair so long that you're stuck to it! It's as if you're part of the chair. Your whole body is heavy, rigid, solid and you weigh a ton. You're so heavy that you can't budge yourself. It's impossible for you to stand up, you're stuck right there! Your body has become part of the chair. When I ask you to stand up, you won't be able to do it! You're stuck tight. The harder you try, the tighter you'll be stuck, and you won't be able to get up. You're heavy in the chair! Stuck in the chair; you can't stand up. You're so heavy and stuck so tight. You can't stand up; you're stuck. Try; you can't." (End 45 seconds.)

(5-second pause) "Try harder; you can't." (10-second pause) "You can relax (or sit down) now."

(The subject is considered not standing if he rises slightly from the chair without straightening into an erect posture. In this event, the experimenter says, "Try to stand fully erect; you can't" instead of "Try harder; you can't.")

Objective score criteria: 1/2 point if the subject is not standing fully erect after 5-second effort; 1 point if not standing fully erect after 15-second effort.

7. "Posthypnotic-Like" Response. (The auditory stimulus consists of tapping once on the metal back of a stop watch with a fountain pen.) (Begin timing.) "When this experiment is over in a few minutes and your eyes are open, I'll click like this (experimenter presents auditory stimulus) and you'll cough automatically. At the moment I click (experimenter presents stimulus), you'll cough. When your eyes are open I'll click (stimulus is presented) and you'll cough. When I click you'll cough." (End 30 seconds.)
Objective score criterion: 1 point if the subject coughs or clears his throat "post-experimentally" when presented with the auditory stimulus.

8. Selective Amnesia. "Your eyes are still closed, but I'm going to ask you to open them in a minute. When they're open I'm going to ask you to tell me about these tests." (Begin timing.) "You'll remember all the tests and be able to tell me about them, all except for one. There's one that you'll completely forget about as if it never happened! That's the one where I said your arm was becoming lighter and moving up and up. You'll forget all about that and when you try to think about it, it will slip even further away from your mind. You will forget completely that I told you that your arm was becoming lighter. This is the one test that you cannot remember! You will remember that I said your arm was heavy and all the other tests will be perfectly clear, but the harder you try to remember that I told you your arm was rising, the more difficult it will become. You will not remember until I give you permission by saying, 'Now you can remember,' and then, and only then, you will remember that I said your arm was rising." (End 45 seconds.)

Objective score criterion: 1 point if the subject does not refer to the Arm Levitation item (Test-Suggestion 2) but recalls at least four other items and then recalls Test-Suggestion 2 in response to the cue words.

"POST-EXPERIMENTAL" OBJECTIVE SCORING OF TEST-SUGGESTIONS 4, 7, AND 8

"(Open your eyes), the experiment is over."

Scoring of Test-Suggestion 7. The "Posthypnotic-Like" Response item (Item 7) is scored at this point. The experimenter presents the auditory stimulus after the subject has opened his eyes and before conversation commences.

Scoring of Test-Suggestion 8. The experimenter next asks: "How many of the tests can you remember?"

The experimenter prompts the subject by asking, "Were there any others?", "Can you think of any more?", and "Is that all?" until the subject mentions at least four of the test-suggestions. If the subject verbalizes the Arm Levitation item during his recital, he receives a score of zero on Test-Suggestion 8 (Selective Amnesia). If the subject does not include the Arm Levitation item in his enumeration, the experimenter finally states, "Now you can remember," and, if the subject still does not verbalize
the Arm Levitation item, "You can remember perfectly well now!"

The subject receives a score of 1 point on Test-Suggestion 8 (Selective Amnesia) if he mentions at least four of the test-suggestions, but does not mention the Arm Levitation item before he is given the cue words "Now you can remember" or "You can remember perfectly well now!"

Final Scoring of Test-Suggestion 4. The Objective scoring of Test-Suggestion 4 is completed when the subject refers to this item during his recital. At this point the experimenter asks: "Did you become thirsty during this test?" If the subject answers Yes to this question, he receives the additional 1/2 point on Item 4. If the subject answers Yes but adds a qualifying statement, e.g., he had been thirsty to begin with, he is asked: "Did the imaginary glass of water help quench your thirst?" If the subject now answers Yes he receives the additional 1/2 point.

The maximum Objective score obtainable on the BSS is 8 points.

SUBJECTIVE SCORES

Immediately after the Objective scores have been assigned, the experimenter mentions each test-suggestion that the subject has passed with an Objective score of either 1/2 or 1 point and asks the subject if he felt the suggested effect or if he went along with the suggestion to follow instructions or to please the experimenter. Specifically, the following questions are asked (with respect to those test-suggestions that the subject has passed with an Objective score of either 1/2 or 1 point):

1. "When I said that your right arm was heavy and was coming down, did your arm feel heavy or did you just let it come down in order to follow instructions or to please me?"

2. "When I said that your left arm felt light and was rising, did your arm feel light or did you raise it deliberately in order to follow instructions or to please me?"

3. "When I said that your hands were stuck and you couldn't take them apart, did you actually feel that you couldn't take your hands apart or did you keep your hands together in order to follow instructions or to please me?"
4. "When I said that you were becoming very thirsty, did you actually become very thirsty or did you just act as if you were thirsty in order to follow instructions or to please me?"

5. "When I said that you couldn't say your name, did you actually feel that you couldn't speak your name or did you just go along with the suggestion in order to follow instructions or to please me?"

6. "When I said that you were stuck in the chair, did you feel that you were stuck and unable to stand up or did you just go along with the suggestion to follow instructions or to please me?"

7. "When I clicked and you coughed, did you feel that you coughed automatically or did you cough deliberately in order to follow instructions or to please me?"

8. "Did you actually forget that I had said that your arm was rising or did you just act as if you had forgotten in order to follow instructions or to please me?"

A Subjective score of 1 point is assigned for each test-suggestion passed objectively which the subject testifies that he had "felt." The maximum Subjective score obtainable is 8 points.

The blank used to record Objective and Subjective scores on the BSS is shown in Table 15.
I tend to blame myself too much.

I could be described a victim of circumstances.

people is that they don’t take things seriously enough.

re is one right answer, once a person has the facts.

often how to feel properly assessed of themselves.

for myself and feel others should do the same.

nervous and anxious

seem feel good at the moment, even at the cost

subjects that I can’t talk about them.

are guilty of bad sexual conduct.

or friends have habits that bother and worry me

hurt.

and uncomfortable when in the presence of these others.

er possible misfortune.

no good at all.

upset when things go wrong

crisis or difficulty.

ing jealous of one or members of my family.

upset when other people interfere with my daily activity.

ed because of my own failures or shortcomings.

cause of the sins I have committed.

ly upset and miserable when things are not the way

APPENDIX H

Palmar Sweat Print Measure

PSPs were taken on 2 cm × 6 cm strips of Whatman #1 Filter paper which had been soaked for three minutes in a 5% aqueous tannic acid solution containing 0.1% thymol as a preservative, and allowed to dry completely on a clean counter before use. The filter paper to be used on each day was prepared the night before. The right index finger of the left hand was coated by means of a cotton swab and allowed to dry for 30 seconds. The swab had been dipped before coating each finger in a solution of 13 grm of anhydrous FeCl₃ in 400 cc of reagent grade acetone with three drops of HCl. The subjects were seated beside a table with the forearm resting completely and evenly on the top. The finger maintained contact for exactly two minutes. The PSPs are scored using a photograph of a fifteen-point visual scale.
Appendix I

Therapist Rating Form

Rate the following dimensions of treatment in terms of the extent of agreement or disagreement of their presence. Rate the questions as follows: (1) Clearly Present (2) Partially Present, or (3) Unclear or (4) Not Present.

### Rational Stage Directed Hypnotherapy:

<table>
<thead>
<tr>
<th>Question</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Review of Self Directed Behavior Change</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>(b) Therapist-client identification of rational and irrational ideas.</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>(c) Stages Outlined</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>(d) Hypnosis induced</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>(e) Cognitive restructuring engaged in</td>
<td>1 2 3 4</td>
</tr>
</tbody>
</table>

### Rational Stage Directed Imagery:

<table>
<thead>
<tr>
<th>Question</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Review of Self Directed Behavior Change</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>(b) Explanation of stages</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>(c) Processing of Ss through cognitive restructuring</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>(d) Processing of Ss through Stages</td>
<td>1 2 3 4</td>
</tr>
</tbody>
</table>

### Hypnosis:

<table>
<thead>
<tr>
<th>Question</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Ss subjected to deep breathing</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>(b) Ss subjected to cognitive muscle relaxation</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>(c) Ss asked to imagine relaxing scene</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>(d) Ss deepened by counting</td>
<td>1 2 3 4</td>
</tr>
</tbody>
</table>

### Placebo:

<table>
<thead>
<tr>
<th>Question</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Ss told emotional stress will subside; no reason given</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>(b) All questions answered non-directly</td>
<td>1 2 3 4</td>
</tr>
</tbody>
</table>
APPENDIX J

Self-Directed Behavior Change
In the Cognitive, Affective,
and Behavioral Motoric Domains:

A Rational-Emotive
Approach

Donald J. Tosi, Ph.D.
The Ohio State University
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INTRODUCTION

This exercise is designed to facilitate self-directed behavioral change in the cognitive, the affective, and the behavioral motoric domains. The value of this exercise is that it can be performed in real life situations (in vivo) or in one's imagination (emotive-imagery). The exercise permits persons to develop a greater awareness of self through self-exploration. Moreover, it is intended to help persons acquire skills that they may use to excellent advantage in the control of their own behaviors.

This self-directed intervention is based upon rational-emotive theory and thus emphasizes cognitive control over emotions and behavior. Rational-emotive theory holds that most sustained negative emotions which interfere with effective behavior (problem solving, self-assertiveness, decision-making, etc.) are the result of irrational ideas which take the form of biased, prejudiced, internalized sentences. Rarely do events external to us cause our discomfort. In reality, it is our own perceptions, attitudes, or internalized sentences about those events outside of us that affect us most.

Specifically, this exercise should (1) enable a person to explicate his thinking or ideas about significant events that are associated with areas of ineffective functioning, and (2) help that person to generate more reasonable thoughts or ideas that would be associated ultimately with more positive emotions and behavior.

In completing this exercise you will be assisted with any questions or difficulties you may have by your counselor, teacher, or workshop leader. If this exercise is being completed at home, you may write your questions or comments on the extra sheets provided.
(Note) Some persons report that their behavior (D) follows feelings (C) about events (A). They appear to be unaware of the thoughts that cause, support, and sustain the feelings. In other cases, some persons are not aware of their emotions (C) and attribute their behavior (D) to their thoughts (B). In actuality, both B and C interact to cause or to influence one's behavior (D). Thus, appropriate psychological interventions assist persons initially to become fully aware of the entire ABCD sequence.

Since persons have the ability to observe themselves or consider themselves as objects, a B, a C, or a D may become an A. As can be observed, the ABCD process is cyclical in nature.

B and C are states occurring within the person exclusively. A & D are often observable to others, but may also occur within the person.
PART I

The ABCD IRRATIONAL SEQUENCE
EXAMPLE OF IRRATIONAL ABCD SEQUENCE

A
"the event"
Husband screams at wife and calls her a dirty name

B
Wife
"the cognitive appraisal. He called me a ___. He shouldn't do that. He doesn't have a right to put me down. I can't stand that man when he does that. I can't stand to be called dirty names because if other people hear they might think its true. I couldn't stand that.

C
"the emotion"
Anger
(I could kill him)

D
"the overt"
(Irrational Approach) Excessive name calling and reciprocal putting down. You are a ___ and everyone knows it. I hate you. Get away from me.

(Irrational Avoidance) Rejecting and avoiding A. Refusal to resolve or deal with conflict.
Activating Events

Each of us find that many situations or events in our environment are sources of job or unhappiness. Significant situations for most of us are school, family, friends, church, etc. Examples of events typically associated with personal unhappiness are a mate screaming at you; a boisterous child; a pending divorce; politics; an undisciplined student; excessive demands made by bosses, friends, or relatives; and certain types of deviant behavior (homosexuality, criminality); examinations; social relationships, and, making career decisions. Events may also consist of your undesirable habits or behaviors such as eating and drinking too much, oversleeping and being late for appointments.

First, list three specific and significant events that are sources of psychological discomfort for you. Second, rank these events that activate negative emotional reactions from least emotionally upsetting to most emotionally upsetting.

<table>
<thead>
<tr>
<th>Listing of Activating Events</th>
<th>Ranking of Activating Events from least emotionally upsetting to most emotionally upsetting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1.</td>
</tr>
<tr>
<td>2.</td>
<td>2.</td>
</tr>
<tr>
<td>3.</td>
<td>3.</td>
</tr>
</tbody>
</table>
Undesirable Emotional or Affective States
Associated with Significant Situational Events

The following list depicts negative emotional or affective reactions associated with certain events (real or imagined). Identify those emotional reactions accompanying each of the activating events you have already listed on the preceding page. Record these under Cu's (undesirable emotions) on Form A.

<table>
<thead>
<tr>
<th>Undesirable Emotions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Anger or great irritability</td>
</tr>
<tr>
<td>2. Anxiety, severe worry, or fear</td>
</tr>
<tr>
<td>3. Boredom or dullness</td>
</tr>
<tr>
<td>4. Failure to achieve</td>
</tr>
<tr>
<td>5. Frustration</td>
</tr>
<tr>
<td>6. Guilt or self-condemnation</td>
</tr>
<tr>
<td>7. Hopelessness or depression</td>
</tr>
<tr>
<td>8. Great loneliness</td>
</tr>
<tr>
<td>9. Helplessness</td>
</tr>
<tr>
<td>10. Self-pity</td>
</tr>
<tr>
<td>11. Uncontrollability</td>
</tr>
<tr>
<td>12. Worthlessness or inferiority</td>
</tr>
<tr>
<td>13. Stubbornness</td>
</tr>
<tr>
<td>14. Other (specify)</td>
</tr>
<tr>
<td>15. Lazy</td>
</tr>
<tr>
<td>16. Sinful</td>
</tr>
<tr>
<td>17. Self-hate</td>
</tr>
<tr>
<td>18. Excessively shy</td>
</tr>
<tr>
<td>19. Hating others</td>
</tr>
<tr>
<td>20. Vulnerable</td>
</tr>
<tr>
<td>21. Dependent</td>
</tr>
<tr>
<td>22. Mistrust</td>
</tr>
<tr>
<td>23. Rigid</td>
</tr>
<tr>
<td>24. Foolish</td>
</tr>
<tr>
<td>25. Jealousy</td>
</tr>
<tr>
<td>26. Other (specify)</td>
</tr>
</tbody>
</table>
Undesirable Behaviors, Actions, or Habits

This is a list of behaviors generally considered to be self-defeating or undesirable, especially, when they are of a high frequency, intensity, and duration. From the list below, choose those behaviors that are most often associated with the activating event(s) you specified (A) and the undesirable emotional or affective states (C) you have already determined for yourself. Record these on form A. You may need to be more specific than suggested by the above behaviors.

1. Avoiding responsibility
2. Acting unfairly to others
3. Being late to appointments
4. Demanding attending
5. Physically, attacking others
6. Procrastinating
7. Telling people off harshly
8. Whining or crying
9. Withdrawing from activity
10. Excessive drinking of alcohol
11. Cocooning
12. Underachievement
13. Overachievement
14. Excessively manipulating
15. Taking too many drugs or pills
16. Being sarcastic
17. Lying
18. Cheating
19. Overprotecting
20. Other (specify) __________________________
The Irrational Beliefs or Ideas

The following are commonly held irrational ideas or beliefs that are causes of emotional disturbances. From the list, choose those irrational ideas (IB's) that occur between the Activating Events (A) and the emotions (C) you generally experience. At first this may prove to be difficult because such thinking generally occurs in symbolic or shorthand form and may not be in one's awareness. The idea here is to slow down the thinking process enough so that those ideas associated with or cause emotional distress will come into sharp focus or awareness. It may be easier if you can translate the above ideas into words that are more familiar to you. Record those IBs you select under IB.

When you have finished this section you have completed the ABCD personal analysis of your specific thoughts, feelings, and actions associated with significant events.

1) I must be loved or approved by everyone for virtually everything I do. Or, if not by everyone, by persons I deem significant to me.

2) I believe that certain acts are sinful, wicked, or villainous, and that people who perform such acts should be severely punished and blamed.

3) I can't stand it when things are not the way I would like them to be.
(4) When I am unhappy it is because something external to me such as persons or events causes me to be that way.

(5) I should be terribly concerned about things that may be dangerous or fearsome to me.

(6) Although I want to face difficult situations and self responsibilities it is easier for me to avoid them.

(7) I need someone stronger or greater than myself on whom to rely.

(8) In order to have a feeling of worth, I should and must be thoroughly competent, adequate, intelligent, and achieving in all possible respects.

(9) When something once strongly affected me, it will always or indefinitely affect me.

(10) I don't have much control over my emotions or thoughts.

(11) I should never be angry or express my anger because such expression is bad and a sign of personal weakness.

(12) I should rarely confront other people or assert my own thoughts or feelings about another person because people are fragile and are hurt easily. I don't want to hurt anyone.

(13) Most of the time I will please other people even if I have to forgo my own pleasure.

(14) I am happiest when I just remain inactive and passive.

(15) In order to be perfectly fulfilled as a human being I need (must have) a close personal, involved, and intimate relationship with another person especially a member of the opposite sex.
# ABCD Problem Analysis

**Part I**

(Form A)

<table>
<thead>
<tr>
<th>Activating Events</th>
<th>Least Emotionally Upsetting</th>
<th>Most Emotionally Upsetting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

**Irrational Ideas or Philosophies (Thoughts)**

- Cu’s) Undesirable Emotions
- Du’s) Behavioral Consequences Associated with Ca

*Try to be as specific as possible in describing the, Cu’s, and Du’s.*
PART II

THE RECONSTRUCTION PROCESS
Psychological Reconstruction

The purpose of this section "the reconstruction process" is to assist persons to move beyond a mere understanding or awareness of those socio-psychological processes that contribute to personal and/or environmental conflict. Moving beyond awareness and understanding implies intervention. That is, self-intervention or simply one's learning to do something about those feelings and behavior that contribute to his personal unhappiness.

The central theme of rational emotive theory is "cognitive control" over emotions and behavior. Thus, since it is man's thinking that is largely responsible for his emotional distress and ineffective behavior, it is of greatest import to man that he learn to challenge, contradict, and ultimately replace those thoughts, ideas, or beliefs that do not serve his best interest with more reasonable or self-enhancing thoughts, ideas, or beliefs.
The Rational Ideas or Beliefs
(Contrast to Irrational Ideas)

The following ideas (RB's) are contrasts to those irrational ideas presented in the last section. When a person substitutes these ideas for his previously held irrational ideas, he will eventually notice positive changes in his emotional states and resultant behavior.

This exercise is designed to (1) introduce persons to more rational ways of thinking about the Activating Events associated with emotional disturbance and to (2) assist persons in the contradicting and challenging of those self-defeating ideas that support negative emotions and self-defeating behavior. This exercise can be performed "in vivo" (real life situations) or through Imagery.

The numbering of the RB's correspond to the numbering of the IB's in the preceding section. Record those RB's that contrast with those IB's you previously identified under RB in form B. While recording those RB's you select, try to imagine yourself using those ideas in those real settings (As) which are personal sources of disturbance.

(1) While it is desirable to be approved and accepted by others, it is not an absolute necessity. My life doesn't really depend upon such acceptance, nor can I really control the minds and behavior of other persons. And, furthermore, a lack of total acceptance is certainly not catastrophic or horrible and doesn't at all mean that I am worthless or a louse.
(2) Many persons do commit acts that are inappropriate, self-defeating, or antisocial. It is desirable to try to induce such persons to act more effectively than to spend needless time and energy blaming, accusing, and becoming upset over their acts. Moreover, needless blame and punishment rarely stops such persons who are usually ignorant, emotionally disturbed, or stupid from committing such acts. Demanding that persons should not commit stupid acts often times is nothing more than a demand that reality be different - reality is reality. The crucial question is, what constructive actions can I initiate to modify reality?

(3) When things don't go the way I want them to go, it is too bad or inconvenient - but not catastrophic. And, it may be in my best interest to change them or arrange conditions so that they may become more satisfactory. But, if I can't change or modify situations to my liking, I would be better off accepting their existence rather than telling myself how awful they are.

(4) While most people are taught that external events are the direct cause of one's unhappiness, in virtually most cases, human unhappiness is caused by one's thoughts, appraisals, evaluations, or perceptions of those events. That is, I create my own disturbance. Since I am human, I can expect to disturb myself often. But, that doesn't mean I have to continually disturb myself forever.

(5) If something is or may be dangerous or fearsome, it is probably in my best interest to face it and try to render it less dangerous and, if that is impossible, I could stop dwelling on such fears especially when little evidence exists that such horrible things will, in fact, occur.

(6) While it is humanly normal to want to take the easy way out such things as avoiding life's difficulties and self-responsibilities, in the long run, I would probably be better off confronting openly such difficulties, facing them squarely, and trying to solve them.

(7) Although the socio-cultural system teaches and reinforces one's tendencies to be dependent on others and things, I would be better off standing on my own two feet in facing life. Moreover,
it I fail to be independent in the short-run, that doesn't mean that I will fail in the future. After all, am I not a fallible person?

(8) Since I am a human being with biological, sociological, and psychological limitations, I cannot reasonably expect to be perfect in any endeavor. But, I certainly can strive to perform well in those tasks I deem as significantly contributing to my self-development. In those areas I am deficient, I certainly can strive to improve those areas. If, I fail, tough - too bad.

(9) Although I have been influenced greatly by my past experiences and that specific instances of the past greatly affect me today, I can profit by such experiences but not be overly prejudiced or biased by them. Nor do I need to be dominated by them in the future.

(10) Human beings, including myself, are happiest when they are actively involved in creative pursuits or when they devote themselves to people or projects outside of themselves. Long term withdrawal from the world or inaction rarely are associated with happiness. Therefore, it would be in my best interest to force myself into productive or creative activity.

(11) I could probably develop the skills necessary to control enormously my own emotions or feelings if I decide to commit myself to that process. And, it would be in my best interest if I would take the necessary risks in order to achieve a greater control over my own destiny. Of course, I don't really expect to develop these skills overnight.

(12) Anger is a normal human emotion and its expression is not a sign of personal worthlessness. Moreover, being aware of my anger and expressing it as a communication of current feelings without indiscriminately attacking the personal worth of others may be in my best interest. Denying my anger is rarely in my best interest.

(13) If I share most of my thoughts and feelings (negative or positive) honestly and openly, it will probably help me communicate more effectively with others in the long run - even though in the short run, I might experience some temporary discomfort.
(14) Striving to know and to accept others for their humanness is a reasonable goal. Moreover, it is in my best interest to try to act fairly with others so I may receive the full benefit of their humanness. However, trying to please others at the expense of my own well being is not personally growth enhancing. Therefore, I can only do my best in trying to please others. If I fail - tough!

(15) It is desirable for me to be able to develop meaningful and intimate relationships with persons especially those of the opposite sex. However, if I demand intimate and satisfying relationships with others, I will tend to focus on the outcome of such interpersonal relationships rather than the process of getting to know and accept another person. Therefore, I would be better off not demanding but trying to be spontaneous, responsive, and accepting towards significant persons.
(Cp's)

Positive Emotions

This list consists of emotions that are generally positive or desirable. Although persons do not experience these always, these emotions are experienced under a variety of conditions with varying degrees of frequency, intensity, and duration. From this list, choose those emotional responses that would be more desirably associated with those activating events (As) and rational ideas (RBs) you have already listed. Also, it is important that you imagine these more positive feelings as emotional responses to those activating events (As) and rational beliefs (RBs). Record your choices under C or form B.

Desirable Affects or Emotions

| 1. Relaxed | 14. Confident |
| 2. Joy     | 15. Self-Accepting |
| 4. Loving  | 17. Caring |
| 5. Hope    | 18. Able |
| 6. Warmth  | 19. Lively |
| 7. Guiltless | 20. Happy |
| 9. Elation | 22. Trusting |
| 11. Energetic | 24. Stable |
| 12. Merry  | 25. Pleasant |
| 13. Cheerful | 26. Other (specify) |
Desirable Behaviors, Actions, or Habits

The following behaviors are generally considered desirable or self-enhancing. More often than not persons engaging in these are more effective than they are ineffective. Choose those behaviors (Dds) that are associated with more reasonable ways of thinking (Rbs) and feeling (Cds). You may need to be more specific than suggested below. Again, try to imagine yourself utilizing these more self-enhancing behaviors as a response to the As, Rbs, and Cds you have already determined:

1. taking responsibility
2. acting fairly
3. being punctual
4. self-assertiveness
5. spontaneity
6. moderate drinking of alcohol
7. being kind
8. honesty
9. considerate
10. helpful
11. reliable
12. tender
13. responsive
14. frank
15. eating normally
16. sleeping normally
17. patient
18. minimizing dependence on people, drugs, etc.
19. taking decisive actions
20. efficient
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<th>LEAST EMOTIONAL UPSETTING</th>
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<td><strong>A) ACTIVATING EVENTS</strong></td>
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<td><strong>B) RATIONAL IDEAS OR PHILOSOPHIES</strong></td>
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<td><strong>Cp's) DESIRABLE EMOTIONAL OR AFFECTIVE REACTIONS (Real or Imagined)</strong></td>
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<td><strong>Dd's) DESIRABLE BEHAVIORAL CONSEQUENCES (Real or Imagined)</strong></td>
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**In this exercise, the more preferred C's and D's may need to be imagined first before they may actually occur in behavior.**
APPENDIX K

INDUCTION PROCEDURE

Part I: Deep Breathing

Start taking in deep breaths and feel the air circulating around your lungs to the very pit of your stomach. Breathe deeply and continue to inhale relaxation so that with each deep breath that you take, you find yourself becoming very relaxed...and very comfortable. Concentrate on becoming relaxed; on inhaling relaxation, and exhaling tension. So that with each deep breath that you take, you find that you are becoming very...very relaxed...and very...very comfortable. Your eyes may feel heavy, and if they are not already closed, you might allow them to do so...and as you do, you find yourself becoming even more comfortably relaxed. You may notice outside noises and talking, but nothing will bother you...nothing will affect your becoming very deeply...comfortably... relaxed, so that with each deep breath that you take, you find yourself slipping deeper and deeper into relaxation. You find yourself becoming very relaxed...further relaxed...deeply relaxed.... You find yourself in a very comfortable...a very warm...a very relaxed state...a very deeply relaxed state.... I want you to stop your deep breathing now and
concentrate on the second part of our relaxation process...the muscle relaxation.

Part II: **Cognitive Muscle Relaxation** (Deepening Technique)

I want you to concentrate on allowing all of the muscles in your body to become completely relaxed. You will find as you let your muscles relax, you can get even deeper into relaxation.

Concentrate now on all of the muscles in your forehead; feeling them losing tension...becoming very, very soft and relaxed...absolutely relaxed and comfortable. With all the muscles in your forehead relaxed, I want you to allow the relaxation to spread through your face...around your eyes, and chin...around your mouth and nose...so that every muscle in your face is becoming very softly, beautifully, and pleasantly relaxed. As each muscle relaxes, the relaxation very easily flows to the next set of muscles, and you find yourself becoming even more exquisitely relaxed.

Now with all the muscles in your face relaxed, concentrate on all of the muscles in your neck.... Allow them to become relaxed.... Allow every muscle to relax. There is no need for any tension...your neck muscles are very..very relaxed. Now, with all of the muscles in your neck relaxed, concentrate on allowing your shoulders and back to become very relaxed... You can feel these very powerful
muscles relaxing...a feeling of comfort comes over you... from your shoulders to your back...around your sides...to your chest. Your muscles automatically relax... As you concentrate on allowing them to become even more relaxed... they do so. Your chest wall moves effortlessly up and down...up and down...you can feel it floating as you become absolutely relaxed. You may be experiencing a very warm and a very comfortably floating sensation...a very safe feeling. Now, with each muscle in your chest absolutely relaxed...beautifully relaxed, concentrate on all the muscles in your arms. Allow your upper arms to become relaxed, to lose any tension that might be left...your lower arms are becoming very relaxed and the relaxation seems to flow through your fingers...and you are finding yourself very comfortably...very beautifully, very softly relaxed.

Now with every muscle in the entire upper half of your body very, very relaxed, concentrate on allowing every muscle in the lower half of your body to become completely and totally relaxed. Starting with all the muscles in your hips and going to your knees, allow every muscle in your hips to become very relaxed...very comfortably relaxed. You can feel your strong thigh muscles becoming soft and comfortable...becoming very relaxed. The muscles feel like they are just hanging on your bones...they are completely relaxed. Now concentrate on the lower half of your legs
becoming relaxed. From your knees to the tips of your toes, you find yourself in a very deep state of relaxation; a very deep and pleasant state...a very beautiful and comfortable state.

As you are in this very relaxed comfortable, safe state, you will find that you can go very easily and automatically into the third stage of relaxation, which is the scene we discussed earlier.

DESCRIPTION OF SCENE:

Allow yourself to imagine a peaceful, relaxing scene. It can be anything...anywhere...allow yourself to find a scene out of your past, or the future, wherein you may become even more relaxed...more deeply relaxed. Should you have any difficulty imagining a particular scene, allow your mind's eye to comfortably focus on a blank white wall...and slowly...very slowly...you may find an image beginning to appear on the wall...an image that is very pleasant...very comfortable...and you become even more deeply relaxed.

So now...as you totally immerse yourself in the scene, you find yourself extremely well relaxed...beautifully relaxed, and in your mind's eye the scene becomes even more vivid, and as it does you become even more well relaxed...more comfortable...more deeply relaxed.

Now allow yourself to maintain your relaxed state and...I want you to allow yourself to imagine that you are walking down a cobblestone path in the country, and as you walk further and further down the path, you find yourself becoming more and more relaxed...deeply relaxed. The sun is very lazily shining through the trees; it is a beautiful day out...the temperature is just right, and as you walk further down the path, you find that you have come upon a small village. In that small quaint village, there is a town square...and you continue to walk toward the village...feeling very good...well relaxed and very alert...and you find at the end of the town square...a very large old church with a steeple. You are looking up towards the steeple, and the bell in the steeple begins to
ring.....dong.....dong.....dong.....dong...and you find yourself even more well relaxed...deeply relaxed, and comfortably relaxed. The bell stops ringing now, and I want you to continue to enjoy the scene you are imagining...or if you wish, allow your mind to float freely, for a moment or two.

Now, I am going to count from one to twenty. When I reach the number twenty, you will allow yourself to be thoroughly relaxed.

Part III: **Description of Scene (Further Deepening)**

The particular scene described to the subject is important in that it includes the following four essential elements:

1. The scene should include a very serene setting which is loosely described by the therapist, e.g., a nature setting, or a peaceful seashore.

2. A rhythm must be established using some facet of the scene, e.g., the waves are rolling, rolling, rolling, into the shore, in and out...

3. Suggestions must be given that elicit peace, comfort, and serenity, as well as the visualizing and hearing of sights and sound within the scene, e.g., you find yourself at peace and extremely comfortable, so that you can actually see and possibly even hear the gulls gracefully floating overhead...

4. Direct suggestion that it is easy for the Ss to experience the scene is important, e.g., you are more able to get into it more, the details become clearer to you...there is no need for any tension...only relaxation.

The therapist must be careful not to describe the scene too rigidly, because his suggestions may conflict with the subjects' projections, therefore lessening the relaxation rather than deepening it. After the scene has
been described, the therapist says:

Now I'm going to count from one to twenty.

At twenty, you will be absolutely relaxed:

1..2..3..further and further relaxed...
4..5..6..deeper and deeper into relaxation...
7..8..9..extremely well relaxed...
10..11..12..very deeply relaxed...
13..14..beautifully relaxed..exceedingly well relaxed...
15..16..almost there, almost completely relaxed...
17..18..beautifully relaxed...
19.....more relaxed than ever before, beautifully relaxed...
20......you are now absolutely relaxed.

I will let you savor and enjoy this relaxation for a moment, then I will count to five and you will awaken. You will feel inevitably much more refreshed and relaxed and able to carry on throughout the rest of the day (evening) in a very relaxed and very attentive state.....

I am now going to wake you by counting to five, and you will feel very good...1..2..3.4.5.
APPENDIX L

GROUP #1

RATIONAL STAGE DIRECTED HYPNOTHERAPY

Session #1:

A. Self-Directed Behavior Change Instrument
   1. pass out instruments
   2. explain how to use it
   3. identify specific problems or areas to work on for the rest of the treatment

Session #2:

A. Explain hypnosis
   1. method of gaining more self-control
   2. state of concentrated attention
   3. more able to obtain and intensify relaxation
   4. dispel old myths of loss of control, sleep state, weak-mindedness, etc.

B. Explain Stage Directed Approach
   1. Awareness
   2. Exploration
   3. Commitment to Rational Action
   4. Implementation
   5. Internalization
   6. Redirection or Change

C. Present induction process didactically
   1. deep breathing
   2. cognitive muscle relaxation
   3. relaxing scene
   4. deepening by counting
   5. working stage
      a. explain how Stage Directed Approach will be used here, i.e., the client will be put through the stages while under hypnosis to intensify his experiences. The stages will separately be focused on.
D. Put Ss through the hypnotic induction up to working stage only:
   1. allow them to dream or relax for a minute or two
   2. bring them out by counting to five

E. Discuss reactions and clarify process

Session #3:

A. Review Self Directed Behavior Change identified problems

B. Outline problems and process through the six stages
   1. concentrate on Awareness and Exploration stages
   2. identify appropriate irrational and rational ideas
   3. emphasize the more rational thought, emotions, and behaviors
   4. instruct Ss that once hypnosis is induced, you will guide him through all the stages once more concentrating especially on the awareness and exploration of rational thoughts

C. Induce hypnosis
   1. work on problems concentrating on Awareness and Exploration stages
   2. give post-hypnotic suggestion that they will practice at home three times per week for fifteen-minute intervals
   3. de-hypnotize subjects
   4. obtain self-report of depth of hypnosis

Session #4:

A. Record the number of times each Ss practiced

B. Review problems, processing them through all stages concentrating on the Commitment to Rational Action and Implementation stages

C. Induce hypnosis
   1. have Ss work on problems concentrating on the Commitment to Rational Action and Implementation stages
   2. give post-hypnotic suggestion regarding practice
   3. de-hypnotize Ss
   4. obtain self-report of depths of hypnosis
Session #5:

Same as Session #4, only concentrates on Internalization and Redirection or Change stages

Session #6:

Same as above sessions. Give equal weight to each stage.

GROUP #2

HYPNOSIS

Session #1:

A. Explain hypnosis
   1. method of gaining more self-control
   2. state of concentrated attention
   3. more able to obtain and intensify relaxation
   4. dispel old myths of loss of control, sleep
      state, weak-mindedness, etc.
   5. discuss and field reactions

B. Present briefly the Induction Method didactically
   1. deep breathing
   2. cognitive muscle relaxation
   3. relaxing scene
   4. deepening by counting

Session #2:

A. Discuss induction and review briefly

B. Induce hypnosis
   1. proceed only to counting to twenty, then
      allow Ss to enjoy the relaxation and dream
      for a moment or two
   2. de-hypnotize Ss

C. Discuss reactions
   1. suggest this method might be useful in relieving anxiety, depression, or hostility

Sessions #3 through #6:

A. Same as above
GROUP #3

PLACEBO

Sessions #1 through #6:

A. Meet and discuss various problems of test anxiety

B. Offer no methodology for dealing with these problems
   1. suggest problems will dissipate by themselves
   2. answer no questions directly
   3. be extremely reflective and non-directive

GROUP #4

CONTROL

Sessions #1 through #6:

A. This group will not meet

B. Will be given appropriate pre- and post-tests
B

Person perceives, appraises or evaluates events, irrational or rational ideas about (A)

A

External or internal activating events

C

Feelings, emotions or affect, negative or positive

D

Overt or covert action toward or away from A (depending on B & C), behavior (D) will be self-enhancing or self-defeating
APPENDIX M
RATIONALE FOR RSDH TREATMENT
OF TEST ANXIETY

"As I listen to you discuss your test-anxiety I am
struck by some of the similarities in how each of you is
feeling and what you are thinking. On the one hand there
are reports of quite a bit of tenseness and anxiety in exam
situations and in evaluative situations. This seems to
take many forms such as stomachs and necks becoming tense,
pounding hearts, sweaty palms, heavy breathing, etc. (The
therapist should use the specific reactions offered by
group members.) At the same time, and correct me if I am
wrong, several of you described how difficult it was for
you to focus attention on only the task before you. Some­
how, your attention wandered away from what you had to do
(such as studying, or taking the exam) to something irrel­
evant. (Once again the therapist should use reactions
offered by group members.) Your thinking or self­
statements seem to get in the way of what you had to do.
Your thoughts about catastrophes, and how awful the conse­
quences will be because of your not doing well got in the
way. (Pause) Have I heard correctly?"
The therapist may decide to have the group return to the description of their test-anxiety — specifically, to the test assessment situation in which each member participated. What kinds of thoughts and feelings, what self-statements did the clients emit in that situation?

Note that the therapist shares with the clients the theory that led to the development of the treatment procedure. In this case, the two factors of emotionality and worry which characterize the high test-anxiety individual's behavior (Morris and Liebert, 1970) and the problems with focusing attention (Sarason, 1973; Wine, 1971) constitute the basis of the therapy rationale.

The therapy rationale continues:

"In the therapy sessions we are going to work on ways to control how you feel, on ways of controlling your anxiety and tenseness. We will do this by learning how to relax."

"In addition to learning relaxation skills, we will learn how to control our thinking processes and attention. The control of our thinking, or what we say to ourselves, comes about by first becoming aware of when we are producing negative self-statements, catastrophizing, being task irrelevant, etc." (Once again, the therapist should give examples of the client's thinking style.) "The recognition that we are in fact doing this will be a step forward in changing. This recognition will also act as a reminder, a
cue, a bell-ringer for us to produce different thoughts and self-instructions, to challenge and dispute our self-statements. In this way we will come to produce task-relevant self-instructions and new, adaptive behaviors. (Pause) I'm wondering about your reactions to what I have described. Do you have any questions?" (The therapist should determine how the rationale matches the clients' expectations and conceptualization for change.)

The above model will be utilized in Rational Stage Directed Hypnotherapy while processing the client through stages of Awareness, Exploration, Commitment to rational action, Internalization, and Change. Prior to the hypnotic induction procedure, the therapist will guide the client through each of the six stages delineating rational parameters concomitantly. During the initial sessions, the therapist will have the client focus on the Awareness and Exploration of rational and irrational ideas. As the counseling progresses, the client is guided through the rest of the stages, focusing on each one and concentrating on the particular nuances contained in each stage. Both the therapist and the client decide when to progress to the next stage.

After practicing and understanding the RSDH process the client is then put through the hypnotic induction and guided through the entire stage-directed process. The
following is an example of the process concentrating on the Awareness and Exploration stages:

T: I want you to focus on the events or situations wherein you upset yourself. (Describe a test-taking situation.) E.g., imagine that you are about to enter the classroom to take an important final exam. If you can imagine this event, please raise your right index finger. (If Ideomotor response is elicited, proceed to the next phase; if it is not, ask Ss to relax and go deeper into relaxation, then once more try to elicit the appropriate response.)

Allow yourself to feel the anxiety in conjunction with this situation; notice how uncomfortable it is and realize how self-defeating this emotion is in this particular instance. Notice how the worry diverts your attention away from the task and results in performance decrement. Describe to yourself the ways in which these emotions are preventing you from experiencing or acting in ways that you would like to. What about the situation would you like to change? Now, concentrate on the thoughts and evaluations you are thinking in relation to this event. Concentrate on the irrational thoughts through which you are causing yourself to be upset. Imagine yourself (1) worrying about your performance and about how well others are doing; (2) ruminating over alternatives; and (3) being preoccupied with such things as feelings of inadequacy, anticipation of punishment, loss of status or esteem, and heightened somatic and autonomic reactions.

Imagine saying to yourself (state specific irrational ideas), e.g., If I fail at this test and everyone else passes, that would be terrible and horrible. Not only is that terrible, but if I fail or don't get a very high grade, then how can I possibly be of any value? I must be totally worthless.... Continue to concentrate on those irrational self-defeating thoughts, and notice how you tend to become more anxious.
As you continue to see those thoughts in your mind's eye, allow yourself to experience the discomfort that your thoughts are causing. The more you continue to tell yourself irrational, self-defeating thoughts, the more you will tend to feel these negative emotions. Continue to concentrate on those irrational, self-defeating thoughts and notice how you tend to become even more anxious.

You can very clearly understand how those irrational thoughts are causing you to upset yourself. Now, I want you to tell yourself to stop thinking those irrational thoughts and we will begin to explore and become aware of some more rational ways of thinking.

Let yourself imagine that you are thinking rational thoughts in conjunction with the same situation as before. Explore the rational thoughts. Become aware that you are thinking. (State specific rational thoughts.) E.g., Even if I do fail or at least don't achieve the standards that I set for myself or by the performance of others, this doesn't mean that I am a terrible or worthless or a stupid person. It simply means that I need to study more for exams, or need to relax more while taking exams and, since I realize that my poor performance doesn't make me worthless, terrible or horrible, at most the situation is merely inconvenient and simple because I did poorly on this exam doesn't mean that I will always perform poorly in the future.

Think those rational thoughts; explore them and become aware of your feelings when you tell yourself these rational thoughts. Notice how your negative emotions tend to subside. Notice how you no longer need to worry about your performance and the possibility of failure but instead are able to put your full attention on the task, which will result in better performance on tests. As the negative emotion anxiety subsides, picture yourself in your mind's eye, engaging in rational test-taking actions and behaviors in conjunction with your rational thinking and feeling.

Notice how you can become more effective when you think rationally. Explore new
behaviors; think of new ways of acting in these situations, and continue to think rationally about them. (Allow the client a few moments to consider some of the more rational behaviors that you have previously outlined with him.)

Now, I want you to allow yourself to once more relax very deeply. . . clear your mind and return to a nice, comfortable, relaxing scene . . . go deeper and deeper into relaxation. Allow yourself to relax completely and concentrate on what I am saying to you. Between now and the next time we meet, I want you to allow yourself to practice this entire method of relaxation and more rational ways of thinking. Practice it three times for 15 minutes each time. Allow yourself to practice the relaxation and more rational ways of thinking at least three times a week for 15 minutes each time.

Once more, relax.... I am going to count to five, and when I reach the number five, you will be wide awake, feeling very refreshed and very alert. You may not remember everything we have talked about immediately; however, as the week progresses, you will remember everything you need to know. When I reach the number "5" you will feel very refreshed and very alert. 1-2-3-4-5.

During later sessions the process is very much the same, only the focus on the particular stage changes. After the therapist and the client feel they have sufficiently explored and have become aware of the irrational and rational ideas and behaviors, the client is guided into the third stage of Rational Stage Directed Hypnotherapy: Commitment to Rational Action. The focus of this stage lies in having the client imagining himself being committed to more rational ways of thinking, feeling and acting. As
the client is deeply relaxed, some of his resistances will be bypassed and his commitment will be more easily implemented.

The RSDH procedure requires the client to visualize by means of imagery, coping as well as mastery behaviors—that is, if they become anxious while imagining a scene, they were to visualize themselves coping with this anxiety by means of slow, deep breaths and self-instructions to relax and to be task relevant. The Ss are encouraged to use any personally generated self-statements that would inhibit task-irrelevant thoughts.