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PROCEDURES AND A RATIONAL THERAPY IN THE
MODIFICATION OF PHOBIC BEHAVIOR.

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THE EFFICACY OF SYSTEMATIC DESENSITIZATION
PROCEDURES AND A RATIONAL THERAPY IN THE
MODIFICATION OF PHOBIC BEHAVIOR

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

By
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* * * * * *

The Ohio State University
1967

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VITA

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CHAPTER I
INTRODUCTION

It was the purpose of this study to examine the relative efficacy and efficiency of therapeutic procedures derived from "learning" models in the treatment of phobias (phobic anxiety). Modified systematic desensitization, and a pseudo-rational therapy were used to reduce anxiety aroused in confrontation with phobic objects.

Systematic desensitization (Wolpe, 1958, 1964) and Rational Therapy (Ellis, 1958) can be conceptualized as following different learning models. The author sees systematic desensitization as a one-stage mediational model (S→S→R). In this model, S represents an anxiety arousing object; s represents an autonomic response of anxiety, i.e. an internal response with drive properties; and R represents avoidance which is drive reducing. Therapy then, for Wolpe (see below) involved developing responses which were antagonistic to the anxiety response, reinforcing these antagonistic responses to fear-evoking stimuli, and in this way reducing avoidant behavior and withdrawal from the feared object.

Rational Therapy (Ellis, 1958) can be conceptualized as following a mediational model (S→O→R). In this model, S
represents an anxiety and fear arousing object; 0 is a group of mediational internalized statements which may be irrational and serve to keep distance between the subject and what he fears; and R is again avoidance. Therapy for Ellis, involves discovering, discussing, and changing the irrational internalized statements. Ellis does not develop antagonistic responses, but deals with the intermediate stage, the 0, making covert responses, overt responses.

Following Paul (1966) it was assumed that selection of Ss defined the behavior to be assessed for change. Ss were selected who exhibited specific target systems of behaviors. Goals of treatment were then relatively specific. As Zax and Klein (1960) illustrated in discussing techniques for measuring change, the least used and most promising method was the use of external, objective criteria, such as blind ratings by trained observers of external behavior. For control purposes, behavioral tests for selected target behaviors were most desirable because they reduced the possibility of faking and bias, factors that were present in ratings by significant others.

The study also attempted to demonstrate as did Paul's (1965) a model for investigating outcome effects of behavior modification under "laboratory" conditions, providing more rigorous criteria than are now available in pure field or clinical studies.

A third purpose was to investigate the effects of densensitization on both real and imagined fear arousing stimuli
(Cooke, 1966). A fourth purpose was to investigate the degree of behavior change with Ss who received only part of the densensitization paradigm (i.e., training in relaxation only).

A fifth purpose was to investigate the degree of behavior change with Ss who were not desensitized, but who were instead given rational therapy (i.e., discussion) and practice dealing with what they fear.

Lastly, the study added construct validation to promising measuring instruments.

A brief overview of the methodology follows: Ss rated by trained judges to be very much afraid of laboratory rats on the basis of their verbal and motor behavior in a standardized fear arousal situation (Cooke, 1966) were assigned to five treatment groups. The direct group (D) received systematic desensitization to the actual fear arousing stimulus; the indirect group (I) to the imagined fear stimulus, a relaxation only (RO) group was trained in relaxation but not desensitized, the rational group (R) received a modification of Ellis' (1958) rational therapy plus experience in rat-handling, and controls (C) received no therapy. A rigidly controlled methodology was employed (Cooke, 1966) in an effort to meet Breger & Mc Gaugh's (1955) critiques of learning approaches to psychotherapy.

Breger & Mc Gaugh (1965) criticized learning theory approaches to psychotherapy. They showed that studies evaluating behavior therapy did not deal with several design problems, namely:
(a) sampling bias, (b) observer bias, (c) experimental control. The authors criticized Wolpe's (1960) ninety percent success figure, since Wolpe excluded patients who did not complete a minimum of fifteen interviews. This practice created a serious sampling bias since these Ss were most likely to be unsuccessful. Of twenty-five studies reviewed by Bandura (1960), the authors found serious observer bias errors. Judges of improvement were usually the treating therapist or someone acquainted with the treatment. Lack of experimental control in behavior therapy studies was evident, and Breger & Mc Gaugh quoted passages from several studies (Wolpe, 1960; Lazarus & Rachman, 1957; Rachman, 1959) to demonstrate that other therapy techniques were being used. Thus results could not be unequivocally attributed to specific learning techniques.

Breger & Mc Gaugh (1965) found one study (Lang & Lazovik, 1963) which was a "controlled experiment." The present study partially replicated and extended the methodology of Lang & Lazovik (1963) using Ss afraid of rats. To meet Breger & Mc Gaugh's critiques, the following steps (Cooke, 1966) were taken: (a) no Ss used in the design were excluded in evaluating the data, (b) ratings of fear were made independently by three judges who did not know which treatment condition a given S was in, (c) only desensitization techniques (Appendix 9 and 10) set forth in Lang & Lazovik's (1963) and Cooke's (1966) manuals were used by the E. Written instructions and standardized procedure were adhered to.
Lang (1964) noted that a troublesome area in an experimental study of psychotherapy concerned measurement. Fear was a dependent variable in the study. Fear or anxiety associated in fear was associated with three measurable behaviors: verbal, motor, and somatic. The verbal aspect of fear was reflected in the S's statement, "I am afraid," and in disturbances of speech pattern and verbal recall. The motoric aspect of fear was simple avoidance; degrees of which were observable and measurable. The somatic aspect, or the muscular and autonomic substrate of fear involved changes in respiration, cardiac rate, blood-pressure, etc. A measure of the somatic aspect of fear was not obtained in the present investigation.
CHAPTER II

REVIEW OF THE LITERATURE

Behavior Modification Using Systematic Desensitization

Rachman (1967) has reviewed the most relevant experimental investigations of systematic desensitization. What follows is, in part, Rachman's (1967) analysis.

Desensitization, developed by Wolpe in the 1950's was based on Jones' (1924) work on gradual deconditioning of artificially induced neurotic in cats. Wolpe (1958) "began feeding neurotic cats in a neutral environment. Wolpe then proceeded...through a series of carefully worked out stages, to situations which approximated more and more the original traumatic situation. He found that... he was able to overcome the animal's neurotic reactions and restore them to apparent normality." Wolpe later used Jacobson's (1938) progressive relaxation as a response which was antagonistic to anxiety. Progressive-relaxation has remained the major antagonistic response which reduces the intensity of the anxiety reaction.

Rachman (1967) reports that Wolpe's early treatment involved relaxing the patients in the presence of the actual anxiety provoking objects. But the method was tedious and impractical. Furthermore, as some patients did not experience
anxiety in the presence of discrete and tangible objects, Wolpe had to develop a new method.

"He then began experimenting with the imaginary evocation of the anxiety provoking stimuli and soon found that it provided a very effective substitute for the real object."

Rachman (1967) described the method of desensitization:

"The patient is relaxed and then requested to imagine the anxiety producing stimuli in a very mild attenuated form. When the image is obtained vividly, a small amount of anxiety is usually elicited. The therapist then relaxes the patient again and instructs him to stop imagining the scene and to continue relaxing. The full sequence is relax, imagine, relax, stop imagining, relax... With each vocation and subsequent dampening of the anxiety response, conditioned inhibition is built up. (Wolpe, 1958).

Wolpe's (1958) general principle is stated: "If a response antagonistic to anxiety can be made to occur in the presence of anxiety-provoking stimuli so that it is accompanied by a complete or partial suppression of the anxiety responses, the bond between the stimuli and the anxiety responses will be weakened."

Lang and Lazovik (1963) obtained twenty-four snake-phobic subjects selected by interview, questionnaire, and direct exposure to a snake. High snake-phobic Ss were assigned to matched groups, an experimental group (N=13) and a control group
(N=11). The experimental subjects received five training sessions each lasting forty-five minutes, during which a twenty item anxiety hierarchy was constructed, training in relaxation was completed and practice in visualizing feared scenes under hypnosis was carried out. Following training the experimental Ss were desensitized while under hypnosis in a maximum of eleven sessions. Half the experimental Ss were exposed to the snake before treatment. The control Ss were not desensitized or trained, but were given the same pre and post measures as the experimental Ss.

Lang and Lazovik's conclusions are summarized: (1) Desensitization effectively reduced phobic behavior, (2) Subjective rating of fear and overt avoidance behavior were modified and gains were maintained or increased at the six month follow-up. (3) Hypnosis and muscle relaxation were not in themselves vehicles of change. (4) The basic suggestibility of the Ss similarly, must be excluded.

Lang & Lazovik (1963) also related: (1) It was not necessary to explore with the S the factors contributing to the learning of a phobia or its unconscious meaning in order to eliminate the fear behavior. (2) Symptom substitution did not arise if symptoms were treated directly. (3) It was not necessary to alter values, attitudes, or personality of the S in reducing phobic behavior.
Lang, Lazovik and Reynolds (1965) extended their methodology and administered systematic desensitization to twenty-three Ss. Two other groups were examined. (i.e., eleven control Ss received no treatment; ten Ss received pseudo-therapy). In essence, the latter group was relaxed but not desensitized. Results indicated that Ss in the systematic desensitization group showed significant reduction in phobic behavior. The untreated controls and "pseudo-therapy" Ss showed no improvement.

"Among the subsidiary observations made by Lang, et. al., the following are of particular interest: (a) None of the successfully treated Ss showed signs of substitute symptoms. (b) It was found unnecessary to delve into the presumed basic causes of their fear of snakes. (c) Simply being in a therapeutic relationship with the therapist was not sufficient to effect significant changes in the phobia (see also Paul, 1966). (d) Successful behavior therapy was completely independent of the S's suggestibility (assessed on Stanford scale). (e) The systematic desensitization of the specific fear generalized positively to other fears and an all-around improvement was observed." (Rachman, 1967, p. 96). Note that Lang et. al., used hypnosis as a response antagonistic to anxiety and not relaxation. Also, note that the Ss in the systematic desensitization group were administered images and not real-life desensitization.
Paul (1966) pitted desensitization against another theoretical model for behavior change. Concerned with reducing interpersonal performance anxiety (fear of public speaking) five groups of matched highly fearful Ss were randomly assigned to five treatments. Fifteen Ss received systematic desensitization (imaginal only); fifteen Ss received "insight therapy;" fifteen Ss received "attention placebo;" twenty-nine Ss were a no treatment control, and twenty-two Ss received no contact. Pre and post treatment measures for the first four groups were a number of self-report questionnaires, physiological measures (pulse rate and palmar sweating), and behavioral ratings by trained independent judges of the Ss' behavior in a real-life stress situation (speaking in public). (See Appendix 14).

Five therapists were trained in systematic desensitization and were given subjects from the three treatment groups (i.e., desensitization, insight, placebo). Treatment for all Ss, consisted of five one hour sessions over six weeks. After termination of treatment, post measures were obtained. Results indicated that subjects who had received desensitization treatment showed a significantly better response to treatment than any of the other Ss. The result was consistent on all types of measurement used—subjective report, physiological arousal, reaction to stress.
Rachman (1967) is quick to point out that Paul's study is best regarded as an investigation of the effectiveness of desensitization in its own right. The study was not a demonstration of the superiority of this technique over other forms of therapy (i.e., insight).

Paul and Shannon (1966) recently administered desensitization to groups of anxious students. Ten highly anxious Ss rated high on Paul's measures of interpersonal performance anxiety, were treated in two groups of five Ss each for nine weekly sessions. Ten untreated controls were also given pre and post measures. Paul concluded that systematic desensitization could be efficiently combined with group discussion and administered in groups without loss in effectiveness in the treatment of interpersonal performance anxiety. Comparing group vs individual (1966) desensitization results reveals that the changes obtained for the group treatment equaled or excelled those obtained for individual treatments on every scale.

Davidson (1965) was concerned with finding out the effective elements of desensitization treatment. The present study was a partial replication of Davidson's work. Female Ss who complained of and demonstrated excessive fear of snakes were divided into four matched groups on the basis of their behavioral ratings in the presence of real snakes (i.e.,
pre measure). One group received the usual "imaginal" desensitization under relaxation. Another group was trained in relaxation but given irrelevant images while deeply relaxed. A third group was desensitized without prior relaxation training or being relaxed in the treatment sessions. The fourth group was given pre and post measures - no treatment. The experimenter remained the same for all groups. Post treatment retest fear avoidance exposure showed that the desensitization (imaginal) while under relaxation group of Ss showed greatest improvement. Davidson (1965) demonstrated that neither relaxation alone nor desensitization alone produced improvement. Rather it was a combination of desensitization and relaxation which reduced fear behavior.

Rachman (1965) Davidson (1965) and Loment and Edwards (1967), obtained results which indicated that reciprocal inhibition produced by relaxation was superior to extinction as a method for reducing fear.

Cooke's (1966) methodology was most similar to the methodology herein reported. However, Cooke's work had little control on the effectiveness of systematic desensitization since he did not work outside of the Wolpe model. The present study replicated and extended Cooke's (1966) methodology and added several more experimental groups.

Cooke (1966) used two types of systematic desensitization with high rat phobic Ss. Four Ss were given imaginal desen-
zation, four Ss were given direct, real-life desensitization, and four Ss served as no treatment controls. Cooke found no overall difference between the two types of treatment as both produced significant decreases in fear behavior (as compared to the control group). However, highly anxious Ss demonstrated more fear reduction in the Wolpeian imaginal desensitization. Clinical reports suggest that anxious patients do not respond to behavior therapy as well as less anxious patients. (Lazarus, 1963; Markes and Gelder, 1966; Wolpe, Salter, and Reyna, 1965).

Several of Cooke's (1966) remarks are noteworthy. He found high consistency and reliability of the avoidance test scores (see Appendix 1) and the subjective fear estimates (see Appendix 13).

In discussing a trend in the data: "The findings have implications for the importance of relaxation in the desensitization procedure. Bandura (1961) reports that one of the criticisms leveled at behavior therapy is that the results obtained have been due merely to the effect of relaxation on the patients and not at all to the effects of desensitization.

Lang and Lozovik (1963) found evidence that the relaxation procedure by itself did not produce any decrease in fear. The procedure used in the present study makes it possible to assess the role of relaxation in the therapeutic procedures. Relaxation seems much less complete in the
direct treatment than in the imaginal treatment... because of the presence of the anxiety-evoking stimulus (in the room) and because... the S is standing, while in the Imaginal treatment the S is sitting.

Hence, if relaxation per se were the efficacious agent, rather than its role as an inhibitor of anxiety in combination with desensitization, the imaginal treatment (wherein the Sa were able to relax more easily) would be expected to produce a greater decrease in fear. However, the data shows the direct treatment more efficacious, which implies relaxation per se is not the efficacious agent."

Rachman (1967, p. 101) summarized the present state of experimental evidence on desensitization: "(1) Desensitization therapy effectively reduces phobic behavior." However, authors with the exception of Paul (1966) worked in the framework of imaginal, hypnotically induced desensitization to test their hypotheses. "(2) The elimination of a phobia is not followed by symptom substitution." (3) Response to treatment is not related to suggestibility (Lang, Lazovik, and Reynolds (1965)). (4) Relaxation alone does not reduce the phobia. (5) Establishment of a therapeutic relationship with the patient (Paul, 1966) at best produces marginal improvements. (6) Interpretive therapy and relaxation does not reduce phobic behavior."

Lazarus (1964) offered several "crucial procedural factors" in desensitization therapy to "ensure that this
procedure leads to positive counter-conditioning rather than an augmentation of neurotic anxiety." Lazarus asked the following: (1) How should repeated signaling of anxiety be handled? (2) When no signaling occurs, how long should the patient be asked to visualize the individual items on his anxiety hierarchy? (3) How long should the relaxation interval be between the presentation of items? (4) Is there an optimal number of scenes which should be presented at a given session? (5) What is the recommended duration of desensitization sessions? (6) Is there an optimum interval that should elapse between sessions?

Lazarus' (1964, pg. 69) suggested that: "The most exacting task is the construction of properly calibrated hierarchies which proceed along primary dimensions of anxiety, since the therapy is usually ineffective or short lived when directed at peripheral rather than central sources of anxiety (Lazarus, 1964; Walton and Mather, 1963 b; Wolpe, 1961)."

Behavior Modification Using Rational Therapy

References to rational therapy (RT) used for behavior modification in laboratory-experimental types of investigations do not, at this writing, exist in the literature. The theory (Ellis, 1958) underlying rational psychotherapy was considered in the present investigation in making up the brief rationale given to Ss in the "rational group" (see Appendix 11).
Ellis (1958) says, "Rational psychotherapy is based on the assumption that thought and emotion are not two entirely different processes, but that they significantly overlap in many respects and that therefore disordered emotions can often be ameliorated by changing one's thinking. A large part of what we call emotion is a kind of biased, prejudiced, or strongly evaluative thinking. The practitioner of rational therapy believes that irrational thinking and behaving, or neurosis, is a biologically natural human state. While the theory accepts the fact that neurotic states are often originally learned or aggravated by early inculcation of irrational beliefs or by propagandization by significant others, it insists that these early-acquired irrationalities are not propagandization but that they instead are very actively and creatively reinstilled or re-suggested by the individual himself. It is largely the individual's repeating to himself his early acquired neurotic beliefs, rather than his parents or others repeating to him, that sustains and eternally perpetuates his neurosis. (p. 12).

With regard to technique Ellis (1962) reports: "RT is probably the only method which tries to show the patient that he is usually telling himself concrete, simple exclamatory sentences to create his disordered emotions and his ineffective behavior, and that teaches him how to observe, logically parse, to challenge and to contradict these disturbance-creating sentences. It is one of the most directive
of all therapeutic methods since it insists that patients
must not only gain insight into what nonsense they are
consciously and unconsciously telling themselves, but that
they must both think and act in counter-propagandizing ways."

"In RT (see Appendix 11) therefore, actual homework
assignments such as dating a girl when the patient is
afraid to ask for a date... experimentally returning to
live with a husband with whom one has continually quarreled
are given to patients. The therapist actively tries to
persuade, cajole, and at times even command the patient to
undertake such assignments as part of the therapeutic
process."

"In RT the therapist even during the first session,
directly confronts the patients with evidence of his irrational
thinking and behaving... He consistently tries to persuade
and argue the patient out of his firmly held irrational beliefs...
and he attacks the neurosis creating ideas and attitudes after
demonstrating how they exist."

"RT defines emotional insight as the patient's knowing
or seeing the cause of his problems and working in a determined
and energetic manner, to apply this knowledge to the solution of
these problems."

"However, it should be noted that RT rarely aims at
symptoms removal but instead almost invariably strives for a
basic reorientation in the patient's philosophy of living.
It is found that when symptoms are removed without such a basic personality change taking place, they are not necessarily replaced by substitute symptoms, but rather by other symptomatic manifestations of the patient's still-held fundamental irrational beliefs." (Ellis, 1962, pg. 11).

"RT, therefore, does not find symptom removal a poor or useless form of therapy, but does find it to be a highly limited advance that usually still leaves the patient with his basic neurosis. RT does not oppose the work of Wolpe and other deconditioning therapists... but, does not employ this mode of treatment." (Ellis, 1962, pg. 12).

**Suggestibility**

Lang, Lazovik, and Reynolds (1965) found successful behavior therapy to be independent of the Ss' basic suggestibility (as assessed on the Stanford scale). In the recent study (1965) twenty-three Ss were desensitized using relaxation instructions induced while under hypnosis, Rachman (1967) stated that the response to treatment was not related to suggestibility. Yet the capacity to respond to suggestive communications from the E was most important in the Ss' attainment of deep hypnotic relaxation (Lang and Lazovik, 1963). Abraham (1962) stated that suggestibility is central to gullibility and persuasibility. Wellzenhoffer (1953) noted the importance of suggestibility in hypnosis.
Evans (1967) discussed suggestibility as a situational variable. Eysenck (1942) suggested that different experimenters were more successful at electing suggestibility phenomena than others. Stukat (1958) found statistically significant differences in Body Sway means on three suggestibility tests elicited by three experimenters randomly allocated to test one-hundred Ss."

Das (1960) reported that greater Body Sway scores were obtained from a more prestigious figure, a chairman of the psychology dept. being more successful at obtaining responses to suggestion than a laboratory assistant, or an unidentified person, even though suggestions were tape-recorded.

Clearly then the role of suggestibility must be measured in a study involving instructions, such as in relaxation training. A measure of suggestibility was given to all Ss' in the present study.
CHAPTER III
METHODOLOGY

Measuring Instruments

The Fear Survey Schedule (FSS) (Lang & Lazovik, 1963) (see Appendix 13) was used as both a pre and post treatment measure of verbal behavior. This instrument was a list of fifty fears, each followed by a seven point scale extending from "no fear" to "terror." The FSS provided a measure of extent of fear and generalization. It was used to assess whether changes in the fear of a rat affected the incidence and/or intensity of other fears. The criteria for acceptance of an S into the study were as follows:

a) a score on item #21 (laboratory rat) of 5, 6, or 7.

b) a score on item #37 (sewer rat) of 5, 6, or 7.

c) a mean value for all items including #21 and #37 of ≥ 3.00.

The Look-Touch-Hold (LTH) (Lang & Lazovik, 1963) (see Appendix 1) was used as both a pre and post treatment measure of the motor aspect of fear. The behavioral task was observed by three judges who independently rated Ss using Paul's (1964) Fear Behavior Checklist (see below). The rationale for the LTH was that the motoric expression of fear behavior was
avoidance of the anxiety-evoking stimulus. The LTH was an
approach avoidance runway task of avoidance. All requests
were made twice and Ss' last approach stage was noted.

Criteria for acceptance of a S into the study were:

a) "Look" being the last approach stage.
b) Inability on the part of the S, to Touch or Hold.
c) Refusal on the part of the S, to Touch or Hold.

The Fear Thermometer (FT) (Walk, 1956, Lang & Lazovik,
1963) (see Appendix 15) was used as both a pre and post
measure of verbal fear behavior. The S was asked to rate his
anxiety immediately following exposure to the phobic-object
avoidance task (LTH above). The S circled a number on a
ten point rating scale. After the number "10" was "I was just
now as scared as I've ever been." After the number "1" was
the statement "I was just now completely relaxed." The
criterion for acceptance of an S into the study was a rating
of \( \geq 5 \) on the FT.

The Fear Behavior Checklist (FBC) (Paul, 1964; Cooke,
1966) (see Appendix 14) was used as both a pre and post
treatment instrument for trained judges to use in observing
Ss' behavior in the LTH standerized fear-arousal, fear-
avoidance situation above. The FBC was divided into two parts:
(I) General Observation (i.e., face pale, lip quivers, hand
tremors, etc.) and (II) Task Oriented Responses (i.e., approaches
cage hesitantly, sigh of relief when told session is over, leaves room quickly at end, etc.) The judges checked those behaviors observed during the LTH session, and did not check those behaviors which did not occur. The FBC was not used as a criterion for acceptance into the study.

**Hypnotic Suggestibility - The Chevreul Pendulum and Body Sway** (Eysenck, 1947) (see Appendix 18) tests of primary suggestibility were used for all Ss after post-measures had been obtained. For Eysenck (1947) such tasks tap ideomotor, or primary suggestibility. The main feature of the test was the execution of a motoric response by the subject consequent upon the repeated suggestion by the E, that such a movement would take place, without conscious participation in the movement on the Ss part. Findings of several studies in which the "Pendulum" and "Sway" tasks were used, were as follows: (Eysenck, 1947). Six tests of primary suggestibility have an average intercorrelation of .50. Body Sway correlated with primary suggestibility (r=0.92) and with hypnotizability (r=0.69). An S classified as non-suggestible if he swayed only two inches. An S was classified suggestible if he fell outright on Body Sway. Test retest reliability on Body Sway (N=60) was .93 (immediate retest). For an N of 80 reliability was .91 (one day). Thirty men and thirty women were tested and retested after four weeks. Retest reliability of the group
was .84. There exists a V shaped distribution of suggestibility. With an N=300, twenty-nine percent swayed less than two inches, twenty-four percent fell outright. None of the intermediate groups contained more than twelve percent of the cases. Of 1,000 male neurotics, seventy-six percent were suggestible while of 400 female neurotic, fifty-two percent were suggestible. (i.e., Sway over two inches). Personal administration of Body Sway was more effective than playing a record.

Internal-External Scale (Rotter, 1960)(see Appendix 17) was used as both a pre and post treatment measure of locus of control. The scores on the IE indicated whether the S perceived reinforcement as following some action of his own or whether reinforcement was the result of luck, chance, fate, or under the control of powerful others. The author sought to discover if shifts from E to 1 occurred following successful desensitization. Test-retest reliability after one month for thirty Ohio State University Psychology students (females) was .83.

Reliability of Measures

1. F.S.S. (Cooke, 1966) .90 (Pearson) after one month.
2. F.B.C. (Paul, 1964) (Cooke, 1966) .64 (Pearson) after one month. .95 (r_KK average judge) after one month.
4. F.S.S. item 21 "rat" .65 after one month.
Subjects

One hundred and twenty female Elementary Psychology students who initially responded to a request for Ss who would describe themselves as "very much afraid of laboratory rats" were administered the FSS, LTH, FBC, and FT. Twenty-five Ss with highest fear behavior ratings (i.e., (a) FSS score on item #21 of 5, 6, or 7; (b) FSS score on item #37 of 5, 6, 7; (c) a mean value of $\geq 3.00$ for FSS; (d) "Look" as last approach stage on the LTH; (e) a rating $\geq 5.00$ on the FT), were assigned to the five treatment conditions as the subjects became available. Therefore, five Ss received relaxation training and direct Desensitization, five Ss received relaxation training and indirect desensitization, five Ss were trained in relaxation alone, five S's participated in a group rational therapy and gained experience in handling rats, and five Ss received pre and post measures with no treatment.

The mean age for twenty-five Ss was 19.7 while the educational level was "sophomore" standing.

Procedure

The experimental procedure used for each of the five treatment conditions was as follows:
Direct Desensitization

a) Scores were obtained on the FSS, LTH, FBC, FT, and IE during the Fear Arousal Situation (see Appendix 1).

b) During Session I, instructions (see Appendix 2, 4, 6) were read, the anxiety Hierarchy was determined with each S, and training in progressive relaxation was begun. (See Appendix 7)

c) In Session II, relaxation training was completed. Recordings were made of the E's relaxation instructions.

d) In Sessions III through VI desensitization was carried out following the Schema in Appendix 10.

e) Ss were instructed to return in approximately three weeks following successful desensitization.

f) Scores were again obtained on the FSS, LTH, FBC, FT, and IE. A measure of Hypnotic Suggestibility was given after the Fear Arousal Situation.

Indirect Desensitization

a) Scores were obtained on the FSS, LTH, FBC, FT, and IE during the Fear Arousal Situation (see Appendix 1).

b) During Session I, Instructions (see Appendix 2, 3, 6, 8) were read, the Anxiety Hierarchy was determined with each S, imaginary evocation training, and training in progressive relaxation was begun. (See Appendix 7)
c) In Session II, relaxation training was completed. Recordings were made of the E's relaxation instructions.

d) In Sessions III through VI, desensitization was carried out following the Schema in Appendix 9.

e) Ss were instructed to return in approximately three weeks following successful desensitization.

f) Scores were again obtained on the FSS, LTH, FBC, FT, and IE. A measure of Hypnotic Suggestibility was given after the Fear Arousal Situation.

Relaxation Only

a) Scores were obtained on the FSS, LTH, FBC, FT, and IE during the Fear Arousal Situation (see Appendix 1).

b) During Session I, Instructions (see Appendix 5) were read and training in progressive relaxation (see Appendix 7) was begun.

c) In Session II relaxation training was completed. Recordings were made of the E's relaxation instructions.

d) Ss were instructed to return in approximately three weeks following their two sessions of relaxation training.

e) Scores were again obtained on the FSS, LTH, FBC, FT, and IE. A measure of Hypnotic Suggestibility was given after the fear arousal session.
Rational Group Practice

a) Scores were obtained on the FSS, LTH, FBC, FT and IE during the Fear Arousal Situation (see Appendix 1).
b) Five Ss met as a group for one and one-half hours during which time the instructions in "rational" therapy (see Appendix II) were read and practice in rat handling was obtained.
c) Ss' were instructed to return in approximately three weeks from the date of their session.
d) Scores were again obtained on the FSS, LTH, FBC, FT, and IE. A measure of Hypnotic Suggestibility was given.

No Treatment Controls

a) Five Ss received pre and post measures. The time lapse between administrations was approximately five weeks.

A master tape recording of twenty-one minute segments extracted randomly from the relaxation-training sessions of Ss in the Direct, Indirect, and Relaxation-Only conditions was obtained. The tape segments were played for a group of six judges, (Clinical Psychology graduate students) whose job it was to guess which type of S the E was relaxing on the tape. This procedure served as a check on the E's consistency in the various treatment groups. Judges ratings and results are reported in section four.
Hypotheses

Following Cooke's (1966) tentative finding, it is the major hypothesis of the study that:

1) Comparing pre and post treatment scores on the FSS, LTH, FBC, and FT, the Ss exposed to the Direct Desensitization procedure show significant reduction in verbal and motoric fear behavior. Ss exposed to Indirect Desensitization, Relaxation training, Rational Group Practice and Control conditions do not show significant reductions across measures of fear behavior. All comparisons are made between treatment and control groups.

2) Direct Desensitization produces significant reduction in:
   a) FSS average scores (i.e., lessened generalized fear)
   b) FT (i.e., decreased behavioral self report of fear).
   c) LTH (i.e., decreased behavioral avoidance of the phobic object).
   d) FBC (i.e., decreased observable anxious behavior).
3) It is hypothesized that Ss in the Direct, Indirect, and Relaxation-Only groups are moderately suggestable.

4) On the IE scale, shifts occur in the direction of I post-treatment as a result of a success experience in anxiety reduction.
CHAPTER IV
RESULTS

The E's verbal consistency with respect to relaxation instructions given to Ss in the Direct (D), Indirect (I) and Relaxation-Only (RO) groups was determined in the following manner. Six judges estimated twenty, one minute taped segments extracted at random from treatment sessions with D, I, and RO Ss. The judges attempted to determine whether a given segment came from a D, I, or RO relaxation instruction session. The twenty segments contained seven "D" segments, seven "I" segments, and six "RO" segments. Of the one-hundred and twenty possible correct guesses, forty were predictable by chance. In the analysis, thirty-seven correct guesses, were obtained. Therefore, the probability of this occurrence was not greater than chance. It was assumed that the E was consistent in administering verbal instructions across groups.

Reliability for the three judges who used the FBC in both pre and post measures was calculated. The judges average reliability (r_k) is using the FBC (Pre Measure) was .58. An average reliability of .97 was obtained on the FBC (Post Measure). Judges average reliability on the combined Hypnotic Suggestibility Task estimates was .95.
Analyses of variance for the several pre-measures were calculated. Tables 1, 2, 3, 4 reveal *pre-measure* homogeneity across groups for the FSS item #21, FSS item #37, total FSS, and FT. Therefore, it was assumed that S's in the D, I, C, R, and RO groups were quite similar on the above pre-measures.

**TABLE 1**

**ANALYSIS OF VARIANCE OF FSS ITEM #21 (LABORATORY RATS)**

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>M.S.</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1.10</td>
<td>4</td>
<td>.275</td>
<td>.617</td>
</tr>
<tr>
<td>Within Groups</td>
<td>8.90</td>
<td>20</td>
<td>.445</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10.00</td>
<td>24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ANALYSIS OF VARIANCE OF FSS ITEM #21 (LABORATORY RATS)**

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>M.S.</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>39.44</td>
<td>4</td>
<td>9.86</td>
<td>6.32</td>
</tr>
<tr>
<td>Within Groups</td>
<td>31.20</td>
<td>20</td>
<td>1.56</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>70.64</td>
<td>24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.01
<table>
<thead>
<tr>
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<th>SS</th>
<th>df</th>
<th>M.S.</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1.60</td>
<td>4</td>
<td>.400</td>
<td>1.25</td>
</tr>
<tr>
<td>Within Groups</td>
<td>6.40</td>
<td>20</td>
<td>.320</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>8.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>M.S.</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>7.44</td>
<td>4</td>
<td>1.86</td>
<td>1.45</td>
</tr>
<tr>
<td>Within Groups</td>
<td>25.60</td>
<td>20</td>
<td>1.28</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>33.04</td>
<td>24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 3

**Analysis of Variance of FSS Total Scores Pre Measure Across Groups**

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>M.S.</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>.89</td>
<td>4</td>
<td>.22</td>
<td>.002</td>
</tr>
<tr>
<td>Within Groups</td>
<td>1651.31</td>
<td>20</td>
<td>82.57</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1652.20</td>
<td>24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Analysis of Variance of FSS Total Scores Post Measure Across Groups**

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>M.S.</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>4.30</td>
<td>4</td>
<td>1.08</td>
<td>1.38</td>
</tr>
<tr>
<td>Within Groups</td>
<td>15.62</td>
<td>20</td>
<td>.78</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>19.92</td>
<td>24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### TABLE 4

**ANALYSIS OF VARIANCE OF FT SCORES PRE MEASURE**

**ACROSS GROUPS**

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>M.S.</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>14.40</td>
<td>4</td>
<td>3.60</td>
<td>1.91</td>
</tr>
<tr>
<td>Within Groups</td>
<td>37.60</td>
<td>20</td>
<td>1.88</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>52.00</td>
<td>24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ANALYSIS OF VARIANCE OF FT SCORES POST MEASURE**

**ACROSS GROUPS**

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>M.S.</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>91.60</td>
<td>4</td>
<td>22.90</td>
<td>4.77*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>96.40</td>
<td>20</td>
<td>4.82</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>188.00</td>
<td>24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.01
Newman-Keuls analysis of the FSS item #21 post-measure in Table 5 demonstrated that the D subjects were significantly different (self report of fear of lab rats less) in comparison with the R, I, RO, and C subjects. The finding tends to confirm the hypothesis that the D subjects demonstrate significantly less self-report of fear on the FSS item #21 in comparison with all other groups.

**TABLE 5**

NEWMAN-KEULS ANALYSIS OF FSS ITEM #21

(LABORATORY RATS) POST MEASURE

<table>
<thead>
<tr>
<th></th>
<th>D</th>
<th>R</th>
<th>I</th>
<th>RO</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>$q = 3.22'$</td>
<td>$q = 3.58'$</td>
<td>$q = 5.01'$</td>
<td>$q = 6.81''$</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>$q = 0.00$</td>
<td>$q = 1.79$</td>
<td>$q = 3.58$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>$q = 1.43$</td>
<td>$q = 3.22$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RO</td>
<td></td>
<td></td>
<td></td>
<td>$q = 1.79$</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

'' Denotes $p<.01$

' Denotes $p<.05$

Newman-Keuls analysis of the FT post-measure in Table 6 shows that the D subjects reported significantly less anxiety immediately following the LTH post-measure compared with
controls. The D subjects were not significantly different from R, I, or RO. Also the R subjects reported on the FT, significantly less anxiety following the LTH post measure compared with controls. Therefore, both D and R subjects were significantly different from C subjects with respect to self report of anxiety.

TABLE 6

NEWMAN-KEULS ANALYSIS OF FT POST MEASURE

<table>
<thead>
<tr>
<th></th>
<th>D</th>
<th>R</th>
<th>I</th>
<th>RO</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>q = 0.81</td>
<td>q = 2.64</td>
<td>q = 1.62</td>
<td>q = 4.68*</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>q = 3.46</td>
<td>q = 2.44</td>
<td>q = 5.50*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td></td>
<td>q = 1.01</td>
<td>q = 2.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RO</td>
<td></td>
<td></td>
<td>q = 3.05</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Denotes p<.05
**Denotes p<.01

The specific hypotheses of the study were tested using the Mann Whitney U test on pre to post change scores on each group, for each measure. On the FBC only the R group was significantly different from the C with respect to a significantly lower number of anxiety indicators present during the LTH post-measure.
The hypotheses that the D group would demonstrate significant change on the FBC (in the direction of lowering of numbers of anxiety indicators) were not supported.

**TABLE 7**

**MANN WHITNEY U TESTS ON FBC PRE-POST CHANGE SCORES**

<table>
<thead>
<tr>
<th>Groups</th>
<th>U</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>I and C</td>
<td>6</td>
<td>.111</td>
</tr>
<tr>
<td>D and C</td>
<td>16</td>
<td>.579</td>
</tr>
<tr>
<td>R and C</td>
<td>1</td>
<td>.008'</td>
</tr>
<tr>
<td>RO and C</td>
<td>14</td>
<td>.579</td>
</tr>
</tbody>
</table>

' = significance

Table 8 shows that the D, I, and R groups were significantly different from the C group on the FSS. This suggests that comparing D, I, and R groups with the C group, the D, I, and R groups reported significant reduction in generalized fearfulness across fifty fears as a result of the experimental manipulations.
TABLE 8
MANN WHITNEY U TESTS ON FSS PRE-POST
CHANGE SCORES

<table>
<thead>
<tr>
<th>Groups</th>
<th>U</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>I and C</td>
<td>2</td>
<td>.016*</td>
</tr>
<tr>
<td>D and C</td>
<td>4</td>
<td>.048*</td>
</tr>
<tr>
<td>R and C</td>
<td>4</td>
<td>.048*</td>
</tr>
<tr>
<td>RO and C</td>
<td>16</td>
<td>.579</td>
</tr>
</tbody>
</table>

*= significance

In Table 9, the results obtained in Newman-Keuls analysis of the FT were again obtained using Mann Whitney U tests on pre to post changes. With respect to self report of fear, the D group again reported significantly less anxiety than controls following LTH exposure post treatment, as did the R group. The hypotheses that the D group would report a significantly lower amount of fearfulness following exposure to a rat was supported; however, we find that the R group also reported a significantly lower amount of fearfulness following exposure to a rat after treatment.
### TABLE 9
MANN WHITNEY U TESTS ON FT PRE-POST CHANGE SCORES

<table>
<thead>
<tr>
<th>Groups</th>
<th>U</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>I and C</td>
<td>7</td>
<td>.155</td>
</tr>
<tr>
<td>D and C</td>
<td>2</td>
<td>.016*</td>
</tr>
<tr>
<td>R and C</td>
<td>1</td>
<td>.008*</td>
</tr>
<tr>
<td>RO and C</td>
<td>6</td>
<td>.111</td>
</tr>
</tbody>
</table>

* = significance

Table 10 shows that the D, I, and R groups reported significantly less fear of "lab rats" compared to the C group. The groups which reached significance on the FSS item #21 (Table 10) also reached significance on the total FSS (Table 8).

### TABLE 10
MANN WHITNEY U TESTS ON FSS ITEM #21
PRE-POST CHANGE SCORES

<table>
<thead>
<tr>
<th>Groups</th>
<th>U</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>I and C</td>
<td>4</td>
<td>.048*</td>
</tr>
<tr>
<td>D and C</td>
<td>0</td>
<td>.004*</td>
</tr>
<tr>
<td>R and C</td>
<td>4</td>
<td>.048*</td>
</tr>
<tr>
<td>RO and C</td>
<td>12</td>
<td>.500</td>
</tr>
</tbody>
</table>

* = significance
There is no significant change in any group on FSS item #37 "sewer rats".

**TABLE 11**

**MANN WHITNEY U TEST ON FSS ITEM #37**

**PRE-POST CHANGE SCORES**

<table>
<thead>
<tr>
<th>Groups</th>
<th>U</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>I and C</td>
<td>3</td>
<td>.210</td>
</tr>
<tr>
<td>D and C</td>
<td>5</td>
<td>.075</td>
</tr>
<tr>
<td>R and C</td>
<td>13</td>
<td>.579</td>
</tr>
<tr>
<td>RO and C</td>
<td>0</td>
<td>.210</td>
</tr>
</tbody>
</table>

There is no evidence that treatment differences were a function of suggestibility as there was no significant difference among groups.

**TABLE 12**

**ANALYSIS OF VARIANCE OF SUGGESTIBILITY MEASURES ACROSS GROUPS**

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>M.S.</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>.52</td>
<td>4</td>
<td>.13</td>
<td>.002</td>
</tr>
<tr>
<td>Within Groups</td>
<td>11.38</td>
<td>20</td>
<td>.569</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>11.90</td>
<td>24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 13 demonstrates behavioral change in the I, D, C, R, and RO groups with respect to a behavioral index of change. All Ss pre treatment could only "look" at the rat. Following treatment, the last approach stages obtained for the I Ss were as follows: One S continued to look, two touched and two held. For the D Ss, all five held the rat. For the C Ss, three looked and two touched, for the RO Ss, three looked while two touched the rat. For the R Ss four held and one touched the rat. Clearly, with respect to the nominal data, the two experimental groups which showed less avoidance of the phobic object in terms of their overall ability to handle a rat were the D and R groups. The hypothesis that the D group alone would demonstrate most behavioral change in comparison to all other groups was not supported. Instead, the R group was also able to indicate a decrease in avoidance behavior.
Table 13 shows the Look-to-Touch-Hold (LTH) task results.

<table>
<thead>
<tr>
<th></th>
<th>Look</th>
<th>Touch</th>
<th>Hold</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Last Approach Stage Obtained</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indirect</td>
<td>Pre</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Direct</td>
<td>Pre</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td></td>
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Table 14 shows that with respect to reduction in externality on the IE scale assessed by pre to post change scores on the Rotter IE scale, no group (I, D, R, or RO) was significantly different from the C group. It was hypothesized that the success experience in anxiety reduction
(e.g., demonstrated on other measures for the D and R groups) would generalize to the IE scale, enabling a shift to a reduction in E to occur. This hypothesis was not supported.

**TABLE 14**

**MANN WHITNEY U TESTS ON AMOUNT OF REDUCTION OF E ON ROTTER'S IE SCALE (PRE-POST CHANGE SCORES)**

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<th>Groups</th>
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<tr>
<td>I and C</td>
<td>10</td>
<td>.345</td>
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<tr>
<td>D and C</td>
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<td>RO and C</td>
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The results of the study are summarized. Comparing I Ss with C Ss, significant changes occurred with respect to lower self report of fear of rats on FSS item #21; non significant change occurred with respect to lowering of self report of fear of sewer rats on FSS item #37. Significant lowering of generalized fearfulness was present in the FSS. However, following exposure to a rat on post measure (LTH) during which two Ss touched, two Ss held, and one S looked only, the I Ss did not report significant lowering of fearfulness, nor did they demonstrate less anxiety on the FBC.
Comparing D Ss with C Ss, significant lowering of self report of rat fear also occurred on FSS item #21, non significant change occurred on FSS item #37. Significant lowering of generalized fearfulness was seen on the FSS. Following exposure to the behavioral post measure (LTH) during which all five Ss held a rat, the D Ss reported significant reduction of fearfulness on the FT, yet they did not demonstrate significantly less anxiety behavior on the FBC.

The R Ss were the most successful in terms of change across measures (both self report and behavioral). Comparing R Ss with C Ss, like the D and I Ss, significant lowering of self report of lab rat fear also occurred on FSS item #21, non-significant change occurred on FSS item #37. Like the D and I Ss, significant lowering of generalized fearfulness was seen on the total FSS. Following exposure to the LTH post-measure during which four Ss held the rat and one S touched it, the R Ss like the D S's reported significant reduction of fearfulness on the FT. The R Ss were the only people to demonstrate to the judges significantly less anxiety behavior (while working on the LTH task) rated by the FBC. Seemingly, the R Ss reported less fear, behaved less fearfully, and demonstrated decreased avoidance of a rat by holding one (four out of five).
Lastly, comparing RO Ss with C Ss, significant reduction in self report of fear was neither demonstrated on FSS item #21, nor FSS item #37. No significant change resulted on the total FSS. Following exposure to the LTH post measure during which three Ss continued to look at the rat and two Ss touched it, the RO Ss did not report a significant reduction in fearfulness on the FT. They also did not indicate significant anxiety reduction on the FBC.
CHAPTER V

DISCUSSION

Results indicated that the four types of treatment used in this study produced differential results across both self report and behavioral observation types of measures. Five Ss exposed to a more classical Wolpe type imaginal systematic desensitization (I) reported that they were less afraid of lab rats and that generalized fear of many things was reduced. However, following exposure to a rat after treatment, these Ss neither reported that they were less anxious, nor demonstrated anxiety reduction. Cooke's (1966) suggestion that direct desensitization was more efficacious in producing behavioral change was, in part, supported. Five Ss exposed to the rat continually during desensitization sessions, like their counterparts in the I condition, reported that they were less afraid of lab rats; also generalized fear was reduced with respect to self report. Following exposure to a rat after treatment, these Ss reported that they were less afraid, demonstrated an increased approach gradient, yet did not demonstrate significant anxiety reduction.

Interestingly, five Ss given group rational discussion (R) and a free practice session in handling a rat-total treatment
time one and one half hours, showed more behavioral change than the desensitized group. These Ss also reported less fear of lab rats and generalized fear was reduced on self report. After the LTH during which four held the rat, these Ss reported less fear and demonstrated significant anxiety reduction.

Five Ss given only part of the desensitization paradigm (RO) seemingly did not show much change across measures. These Ss, after treatment, continued to report a high degree of specific and generalized fear, remained fearful during the behavioral tasks, in spite of the fact that two Ss touched the rat, and demonstrated and reported that they were afraid following exposure to the rat.

Before too many implications are drawn from these results it should be pointed out that on the FBC, a crucial behavioral measure of fear; the judges reliability in picking up the same anxiety indicators was low (pre measure). Much of the Low reliability was attributable to inadequate pre training. Investigators who continue to use the FBC are cautioned to carefully present judges with several Ss who demonstrate varying degrees of anxiety behavior. As the FBC is presently arranged, there are thirty-nine discrete behaviors for judges to memorize. The author would suggest a modification of the FBC so that only ten to fifteen of those behaviors which are observable consistently across anxious Ss are rated. (i.e., hand tremors, nervous giggle, laugh, or smile). Judges reliability in this investigation increased with practice over time so that in using the FBC as a post measure the average reliability was .97.
The FSS was a reliable instrument for assessing change on self report of fear. It should be noted that Ss in the I, D, and R groups who demonstrated reduction in report of lab rat fear also demonstrated a reduction in self report of fear which generalized to the degree that total FSS reduction was also significantly lower than controls. However, no group demonstrated reduction in their fears of sewer rats. Perhaps because all treatment instructions focused specifically on lab rats, one would not expect to see the change. Or it may be argued that to fear sewer rats was wholly rational, realistic and not amenable to change.

The FT proved to be a simple and sensitive measure of self report of fear. In essence it provided objective measurement of the S's experience of a fearful situation and answered the E's question "Just now how afraid were you?" The author sees increased usage of behavioral measures such as the LTH in behavior modification studies. In the study the LTH, though it provided only nominal data served as good check on self report of fearfulfulness. It is noted that those Ss in the D group who reported less fear after exposure to a rat (FT) also demonstrated less fear, as they were all able to pick up the rat—though not without anxiety (FBC). Subjects in the R group were also able to pick up the rat (LTH) and report less anxiety. (FT).
Instructions (Appendix 1) given all twenty-five Ss during the LTH were quite different from instructions given by other investigators (Cooke, 1966) in that a set was presented for the S that she could refuse to carry out the instructions if she became anxious. Also, the supportive words "try to do" and not "do as I do" were used.

A low level hypothesis with reference to the Rotter IE Scale was developed based on the hunch that a success experience for a high E who attributes all her successes to "luck" and "fate", would enable her to become more self-rewarding. However, it is hypothesized that the scale was not sensitive enough to pick up attitudinal changes as a result of desensitization, therapy, etc.

Little can be said about the suggestibility measures used in the present study. The Body Sway task and Chevreul's Pendulum combined represent, theoretically, a new test of hypnotic suggestibility for which no norms exist. Therefore, there is no basis for comparing the present S's suggestibility ratings with any known group of suggestable people. It may be however, that judges reliably rate degrees of compliance to suggestive instructions. The average rating on two suggestibility tasks for an average S was 1.81. This represents "moderate movement" on the Chevreul's Task and "moderate sway" (i.e., one to two inches forward) on Body Sway. It is the author's hypothesis that many of the Ss were "moderately" suggestable. However, a
more intensive and through analysis of this important variable in desensitization is planned for a following study.

At the present writing, this study was the first to attempt to assess the E's consistency. Many similar studies have controlled for S's consistency by rigorous selection procedures, and have controlled for behavioral judges consistency by training. Results of the tape ratings suggested that no differential cues were given subjects in different groups by the E. It is felt that experimenter bias is always present when one E sees several groups of Ss in a treatment setting. The use of judges ratings of randomly selected tape segments of sessions with several different S's is strongly recommended.

Several huge and foreboding "Why?" type questions loom up behind the data. The author feels that Cooke's (1966) finding that direct desensitization was efficacious in producing behavior change with highly fearful college girls was supported. Yet the reader may wonder what could have happened to produce the marked degree of behavioral change obtained by Ss exposed to the rational/practice condition. The creation of a combination rational therapy/practice condition was suggested to the author by Dr. Reed Lawson. It was his hypothesis that by simply explaining to fearful girls that they were in no danger, and also demonstrating to them proper ways to handle rats, behavior modification would occur, as it did. Several tentative factors
are forwarded to account for the results, however, the reader should realize that the study dealt with small Ns and far reaching generalization from the results would be premature.

In both the D and R conditions an actual "confrontation" experience took place with the phobic object. The rat was manipulated in the D condition as part of desensitization and the rat was handled by R Ss as part of their practice session. Also, the notion of group effect seemed to be operative in the R condition. Five R subjects were given the rational instructions and allowed to practice. Members of the group reinforced successful approaches to the cage and rewarded those girls who touched or held the rat during practice.

A more rigorous investigation of the Ellis type rational therapy with phobics is planned in which Ss will be seen individually. However, the reader will recall that the R Ss were evaluated individually, as were all other Ss, on post measures. Therefore, group reinforcement for increased approach was not operative at that time.

It may well be that behavior modification using an S O R model is just as efficacious as classical systematic desensitization which has been demonstrated (see Chapter II) to be effective. The Ellis type instructions can be seen as direct attacks on the mediational sentences the fearful girls used to avoid confrontation with lab rats. The attempted
to dispel the irrationalities and the Ss in the R group managed to behave less fearfully. Certainly the finding runs counter to the present body of knowledge in the Wolpe zeitgeist and demands replication.

Several methodological variables were important here. It may well be that what was desensitized in the investigation was the fear of one rat. The same rat used in the D and R S's sessions was used for pre and post measures. Several Ss asked, before attempting to touch the rat, whether or not this was the same rat with which they had had experience. The question was answered indirectly by the E. Researchers in the area are cautioned to use different rats for pre measures, post measures, and treatment sessions, in an attempt to control for this "familiarity" variable.

Certainly more research is needed to operationalize and create methodology to assess Ellis' position.

Another finding warrents some speculation. Classical imaginal desensitization can be construed as a cognitive exercise, simply learning not to become tense while imagining a fear provoking scene. It may be noted that the Ss in the I group all changed, with respect to less fear, on the self report measures. Perhaps desensitization caused them only to think that they were less afraid. This may account for lack of change on the behavioral measures.
APPENDIX I
Instructions to Ss During the Fear Arousal Situation

"You have been asked to come here on the basis of the checklist of fears you took. You indicated that you had a fear of rats. My research is an investigation of new treatment procedures for people who, like you, are very much afraid of rats and other things. Tonight in order to get a measure of the extent of your fear, I am going to ask you to try to do several things. You may tell me you wish to stop the task at any point. You do not have to do any of this if you become too anxious."

(E walked to cage and pulled back curtain revealing caged rat).

Look Condition:

"Look at the rat. You see a cage with a rat in it. You are to approach the cage and come as close as you feel comfortable in coming. You may stop where you wish if you wish to stop."

Touch Condition:

"Now you see me opening the door and touching the rat. Try to do as I do."

Hold Condition:

"Now you see me picking up and holding the rat. Try to do as I do."
Refusal Statement:

"Thank you very much. Please return to the other end of the room and fill out the page you see on the table."
APPENDIX II
Pre-treatment Instructions for Ss in Direct and Indirect Desensitization Groups.

"The emotional reactions which you experience are a result of your previous experiences -- often leading to feelings of anxiety which are really inappropriate. The specific technique which we will be using to work with your reaction is called desensitization. This technique utilizes two main procedures to reduce your anxiety: (1) relaxation, and (2) counter conditioning. A method of inducing relaxation has been developed which can be learned very quickly and which will allow you to become more deeply relaxed than ever before. Of course, the advantage of relaxation is that the muscle systems of your body cannot be both tense and relaxed at the same time; therefore, once you have learned the relaxation technique, it can be used to counter anxiety in many situations."

"We combine the relaxation technique with the psychological principle of counter-conditioning to actually desensitize situations such that anxiety no longer occurs. First, we will determine situations in which you become progressively more anxious, building a list (hierarchy) from least to most anxious situations with regard to laboratory rats. Then I will teach you the technique of progressive relaxation and have you practice this. You will see how this operates in a few minutes when we start training. After you are more relaxed than ever before, we will start the counter-conditioning."
Pre-treatment Supplementary Instructions for Ss in the
Indirect Desensitization Group.

"This will be done by having you repeatedly imagine the
specific situations from the anxiety hierarchy while under
relaxation. By having you visualize very briefly the situations
which normally arouse anxiety, while you are deeply relaxed,
those situations gradually become desensitized such that they
no longer make you anxious. We start with those situations
which bother you the least, and gradually work up. Since
each visualization will lower your anxiety to the next,
a full anxiety reaction never occurs."
APPENDIX IV
Pre-treatment Supplementary Instructions for Ss in the Direct Desensitization Group.

"This will be done by repeatedly placing you in the specific situations from the anxiety hierarchy while under relaxation. By having you concentrate very briefly on the rat, while you are relaxed, those situations gradually become desensitized such that they no longer make you anxious. We start with those situations which bother you the least, and gradually work up. Since each situation will lower your anxiety to the next, a full anxiety reaction never occurs."
Pre-treatment Instructions for Ss in the Relaxation-Only Group.

"The emotional reactions which you experience are a result of your previous experiences—often leading to feelings of anxiety which are really inappropriate. The specific technique which we will be using to work with your reaction is called 'progressive relaxation.' This is a procedure for relaxation which can be learned very quickly, and which will allow you to become more deeply relaxed than ever before. Of course, the real advantage of relaxation is that the muscle systems in your body cannot be both tense and relaxed at the same time; therefore, once you have learned the relaxation technique, it can be used to counter anxiety in many situations. You will see how this operates in a few minutes when we start training."
Pre-treatment Instructions in Construction of the Anxiety
Hierarchy for Ss is Direct and Indirect Densentization Groups.

"The anxiety hierarchy is one of the most important
aspects of the densensitization treatment. The object here is
to determine situations which run from very slight, controllable
amounts of anxiety to more extreme amounts of anxiety. Here
is a listing (K presented the anxiety Hierarchy to S) of fifteen
anxiety arousing situations. Your task is to confirm that the
situations are in order of ascending anxiety potential. If
changes are necessary, we will make them so that we get a
listing of anxiety arousing situations. We may change the
order of the items, but not the items themselves. O.K.?"
(See Appendix 16).
APPENDIX VII
Schema for Training in Progressive Relaxation for Ss in Direct, Indirect, and Relaxation-Only groups.

To the S "This technique of progressive relaxation should be mastered and will take some time at first. As you learn, the time for inducing deep relaxation will be lessened. I will proceed by having you systematically tense special muscle systems. You should hold these tense until I say "relax," at which time you let go immediately. By first tensing the muscles, they relax to a deeper level when released. I want you to focus all of your attention on each muscle system as we work through them. After practice, it will not be necessary to tense the muscles first in order to achieve deep relaxation."

The Method. The S was placed in a chair with the E sitting to one side, S was told to get into a comfortable position - her body requiring little use of muscles for support. The S was instructed to close her eyes to minimize external stimulation.

The S was instructed to "make a fist with your dominant hand make a fist and tense the muscles of your hand and forearm, tense until it trembles - feel the muscles pull across your fingers and the lower part of your forearm." The S tensed for 5-7 seconds. The E said, "Now relax, just let your hand go -- pay attention to the muscles of your hand and forearm as they relax -- note how these muscles feel as the
relaxation flows through them." The S continued to relax 10-20 seconds. "Again, tense the muscles of the (right) hand and forearm -- pay attention to the muscles involved."

(5-7 seconds) "O.K., relax - pay attention to these muscles and note how they feel as the relaxation takes place, becoming more and more and more relaxed, more relaxed than ever before. Each time we do this you'll relax even more - your arm and hand completely relaxed with no tension at all, warm and relaxed."

The E continued thus (2-4 times) until the S reported that her right hand and arm were relaxed with no tension.

The S was instructed to tense her (right) biceps, leaving her hand and forearm limp on the chair arm. The E proceeded in the same manner as above, in a "hypnotic-monotone."

Training proceeded with the other muscle groups in the same manner, with the same verbalizations (i.e., "note how these muscles feel as they relax; feel the relaxation and warmth flow thru these muscles; pay attention to these muscles so that later you can relax them again."

Muscle Groups

1. Dominant hand and forearm
2. Dominant biceps
3. non-dominant hand and forearm
4. non-dominant biceps.
5. Frowning hard, tensing muscles of forehead and top of head.

6. Wrinkle nose, tensing muscles across top of cheeks and upper lip.

7. Draw corners of mouth back, feeling jaw muscles and cheeks.

8. Tighten chin and throat muscles, feeling two muscles in front of the throat.

9. Tighten back muscles and muscles across shoulders — feel muscles pull below the shoulder blades.

10. Tighten abdominal muscles — make the abdomen hard.

11. Tighten muscles of right upper leg — feel one muscle on top and two on the bottom of the upper leg.

12. Tighten right calf — feel muscles on the bottom of the right calf.

13. Push down toes and arch of the right foot — feel pressure as if something were pushing up under the arch.

14. left upper leg.

15. left calf.

16. left foot.

Two trials were used for each muscle group. The S was asked, "Do you feel tension anywhere in your body?" If she did
the tension-release cycle for that muscle group was repeated. The \( S \) was instructed to take a deep breath while tensing muscles, and to let go slowly while releasing. If a muscle group did not respond after four trials, the \( S \) was instructed to move on and to return to it later.

\( Ss \) who developed cramps were instructed to shorten the tension interval a few seconds. The \( E \) added, "Do not tense these muscles quite so hard."

With the \( S \) more susceptible to suggestion - relaxation was further deepened by repeating suggestions of warmth, relaxation etc. The \( E \) brought the \( S \) back to "normal" using the numerical method of trance termination (i.e., "I'm going to count from one to four. On the count of one, start moving your legs: two, your fingers and hands; three, your head; and four, open your eyes and sit up.") The \( E \) checked to see that the \( S \) felt well and alert before leaving the progressive-relaxation training sessions.

The \( S \) was instructed to practice relaxation twice a day between sessions. She was instructed not to work at it for more than fifteen minutes at a time, and that she should not practice twice within any three hour period.

For \( Ss \) in the Direct Desensitization Group further practice was carried out in differential relaxation: relaxing those muscle groups not in use while standing up. (i.e., they relaxed while standing during the desensitization.)
By the second session, for those Ss in groups (Direct and Indirect) receiving further treatment, relaxation was induced merely by having Ss focus attention on the muscle groups, and instructing Ss to "concentrate on muscles becoming relaxed, warm, etc." However, if the S had difficulty following suggestions without the use of prior tension, the E returned to the use of tension release.
APPENDIX VIII
Schema for Testing Imagery (Post-Relaxation) with Sg in the Indirect Desensitization Group.

To the S "Good. You seem to be relaxing much more than ever before. Before we get into the desensitization procedures next time, it will be important for you to learn and practice something new. Close your eyes relaxing deeply and now visualize yourself lying in bed in your room just before going to sleep. (The E gave the S ten seconds). Describe what you see -- Do you see it clearly? Do you see it in color? -- Do you feel as if you were there? -- O.K. now stop visualizing."

(The E and the S discussed the visualization)

"With practice you should experience these visualizations as clearly as very vivid memories. They will become clearer. Tell me if you are able to start and stop an image on request."

(The E presented several more non-anxious images to the S)

"You are doing well. Are you able to visualize these situations as if you are there? You should not just be watching yourself. Let's try some more."
APPENDIX IX
Schema for Desensitization Sessions with Ss in the Indirect Desensitization Group.

To the S "Now again relax deeply. Concentrate on muscles becoming more and more and more relaxed. While you go on relaxing, I will explain what I will be asking you to do. I will present an image which you said elicits little anxiety (item 15). If at anytime during our session, you feel any tension or nervousness whatever signal me by raising your right index finger."

The E induced relaxation and added: "Now I want you to visualize..." The S visualized for about ten seconds. "Stop visualizing this and go on becoming more relaxed." The S was asked whether she felt any tension and if she was able to start and stop the image on request. The item was repeated: "One more time visualize..."

The E followed this paradigm for the whole hierarchy if an S did not become anxious (i.e., (a) presenting each item from the hierarchy; (b) allowing ten seconds to elapse; (c) instructing the S to "Stop visualizing this and go on becoming relaxed," (d) continuing suggestions of relaxation, warmth, no tension for thirty - forty-five seconds; (e) presenting the image again.)
The E moved on to the next item if the S did not signal anxiety, and the E did not detect anxiety during two ten second presentations of an item.

If anxiety was signaled, or if the E detected discomfort in the S, the E said immediately: "Stop visualizing that, and go on relaxing." Suggestions of relaxation, warmth, well-being were continued for one minute until the S reported a deep relaxation (as deep as before the image). The S was informed that the E would shorten the presentation so that anxiety would not occur. Then, the E presented the same item for three or five seconds. If anxiety was still aroused, the E returned to a ten second presentation of the previous item in the hierarchy.

If, on the other hand, the three to five second presentation did not arouse anxiety, thirty to forty-five seconds of relaxation suggestions were given. The same item was presented again for five seconds, then ten seconds, then twenty seconds. If the item was presented for twenty seconds with no anxiety arousal, the E continued to the next item in the hierarchy. Most items handled in two to four presentations.

Desensitization sessions were not ended with a presentation which aroused anxiety. Sessions were ended with a success item or a return to a previously desensitized success item in the hierarchy.
The E was "awakened" and the session was discussed. The E was reassuring and optimistic in response to difficulties which developed.

Each session was begun with a presentation of the last successfully completed item.
APPENDIX X
Schema for Desensitization Sessions with Ss in the Direct Desensitization Group.

The E checked on the success of the relaxation training. Most important was the stress put on differential relaxation. The S stood and the E administered relaxation suggestions with attention directed on muscles not in use while the S was standing.

Desensitization followed the paradigm developed in Appendix 9, for Indirect Desensitization with the following modification: The S was told to stand in the fifteenth position on the anxiety hierarchy. Relaxation was induced. The S was instructed to "concentrate on observing the rat very closely." (ten seconds). While the S was in that position, she was told to stop concentrating on the rat and to concentrate on relaxing (thirty-fourty-five seconds).

a) the words "concentrate on observing the rat"

were substituted in the Direct Desensitization Group for "visualize."

b) the S remained in the presence of the rat throughout densitization to the items on the anxiety hierarchy.
APPENDIX XI
Instructions for Ss in the Rational Therapeutic Group

"You have been asked to come to this session, since during the experimental session you indicated both behaviorally and on several measures that you had an extreme fear and aversion to rats. My research is an investigation of new treatment procedures for people, who like you, are afraid of rats. Everyone here is equally afraid and made anxious by rats."

"The psychological principal underlying your fears may be that all of you are telling yourselves irrational things about rats. These thoughts may be called 'illogical thinking' or 'self-defeating verbalizations.' Your fear of rats will continue as long as you maintain irrational thoughts about rats. I will try to demonstrate what these irrational thoughts are; then you can re-think these in a more logical, self-helping way. You may see that the unrealistic things you tell yourselves about rats cause the fear, tension, and anxiety, and not that the rat causes the fear."

"What sorts of things do you think about rats?" "You say you think you may be bitten. The animal has gone through extensive handling experience and is quite calm when handled by most people. If you act nervously, the animal will be nervous. It will only bite if something is inserted into its cage through the wire-mesh."
It is well fed and comfortable. This strain of rats is bred for experimentation. The white rat is docile and affectionate. Its behavior is unlike that of a sewer rat. You may say you hate its tail. The tail is part of the animal and when you feel comfortable with the rat, its tail will not be bothersome.

You say that the rat is dirty and carries disease. This strain is bred to be free of disease. They carry no germs, mites, or bugs and you will be perfectly safe in touching and holding the rat. You may say that the teeth are sharp. Yes, but it will not bite if handled properly. You may say you could not learn to handle what you fear. This is silly. To actually confront the fear object is the best way of getting over the fear.

Here are some pointers in handling these animals:

(1) Always carry out what you plan to do. If you decide to touch the rat, then touch it. If you plan to pick it up, do so. Waving your hand and fingers around in the cage only serves to alarm the animal. (2) Be firm but gentle. The animal can be carried easily and will sit on your arm with little restraint. Squeezing too hard will hurt the rat, and cause it to be uncomfortable. (3) Pick up the rat from behind the front legs. It is afraid, as you are, of falling. Give it some support and it will not become restless. (4) Never put your finger up to the cage mesh, the rat tends to nibble gently if you do this. (5) Do not make sudden jerky movements or loud
noises. The rat is a sensitive animal. (6) Remember the rat is bred, as is the dog, to be handled by humans. You can develop the skills necessary to handle the rat. No one is asking you to love the rat. Simply to do what your anxiety interrupts you from doing."

E demonstrated rat-handling technique for Ss.
APPENDIX XII
Instructions for Hypnotic Suggestibility Tasks.

(I) Chevreul's Pendulum (Eysenck, 1947)

The S held in her hand a thread, from which hung a small weight. She attempted to hold this weight still over the center of a ruler placed below the weight on a table. The E suggested the following: "You are holding the weight over the center. You will not be able to hold the weight still. It is starting to swing along the ruler. You can't hold it still. It is swinging back and forth along the line. You can't hold it still - more and more, back and forth; it is swinging, swinging, back and forth - you can't hold it still, etc."

Judges ratings were recorded on the form in Appendix 18.

(II.) Body Sway (Eysenck, 1947) (Star Sound Studies, London)

The S was told to stand still and relaxed, with her eyes closed. The E said the following: "Now just keep standing there please, quite still and relaxed, with your eyes closed and think of nothing in particular. Just keep standing still and relaxed and listen to me. Now I want you to imagine that you are falling forward, you are falling, falling forward, falling forward all the time. Falling, falling forward, falling forward all the time, more and more, falling forward, etc."

Judges ratings were recorded on the form in Appendix 18.
This is a measure of self-knowledge and self-understanding. How much afraid of each of the following things are you? Check the column for each item that best describes how much you are disturbed by it.

1. Noise of vacuum cleaners 26. Scissors
2. Cuts 27. Death
4. Reciting in public 29. Imaginary creatures
5. Dead People 30. Darkness
6. Handling live fish 31. Dogs
7. Loud voices 32. Vaccinations
8. Traffic dangers 33. Sickness
9. People with one leg 34. Angry adults
10. Being in a strange place 35. Mice
11. Riding a roller coaster 36. Fire
12. Being locked in a room 37. Sewer rats
13. Thunder 38. Harmless snakes
14. Falling down 39. Lightning
15. Bullies 40. Sudden noises
16. Sirens 41. Drowning
17. Doctors 42. Surgical operations
18. High places 43. Deep water
19. Being teased 44. Razor blades
20. Dentists 45. Dead animals
21. Laboratory rats 46. Blood
22. Ghosts 47. Dreams
23. Strangers 48. Fighting
24. Robbers or burglars 49. Knives
25. Failure 50. Being criticized
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APPENDIX XIV

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FEAR BEHAVIOR CHECKLIST

Rater: [ ] Subject: [ ] Date: [ ]

Check those behaviors which you observe.

I. General Observations

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<tr>
<th></th>
<th>Segment II</th>
<th>Segment III</th>
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<tr>
<td>body sways</td>
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<tr>
<td>knees tremble</td>
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<tr>
<td>extraneous arm and hand movements (scratches, fidgets)</td>
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<td>hand tremors</td>
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<td>face muscles tense (grimaces, tics, drawn)</td>
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<td>face pale</td>
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<td>face flushed</td>
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<td>swallows or gulps</td>
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<td>breathes heavily</td>
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<td>perspires</td>
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<td>rigidity of posture</td>
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<td>closes or covers eyes, or otherwise avoids looking at rat</td>
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<td>whimpers</td>
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<td>chews lip</td>
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<td>lip quivers</td>
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<td>shivers or trembles</td>
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<tr>
<td>appears very nervous</td>
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<td>jerky movements when performing tasks</td>
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<tr>
<td>I. Nervous Responses</td>
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<td>nervous giggle, laugh, or smile</td>
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<td>puts hand to stomach</td>
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<tr>
<td>covers mouth with hand</td>
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<td>arms folded across chest (as if clenching herself)</td>
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<td>hands behind back</td>
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<td>excessive talk or questioning (&quot;Will it bite?&quot;, &quot;I can't touch it.&quot;)</td>
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<td>needs verbal reassurance</td>
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<th>II. Task Oriented Responses</th>
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<th>Segment III</th>
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<tr>
<td>approaches cage hesitantly</td>
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<tr>
<td>retreats or backs away when cage door is opened</td>
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<tr>
<td>unable to touch rat at all</td>
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<tr>
<td>sigh of relief when told the session is over</td>
<td>_____</td>
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<tr>
<td>leaves room quickly when session is over</td>
<td>_____</td>
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<tr>
<td>Startle response</td>
<td>_____</td>
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retreats or back away when asked to perform either of the tasks

sighs before performing either task

alternates hands used to try to hold or touch rat

hesitates in touching or holding rat

approach- withdrawal hand movements when trying to touch or hold rat

touches rat quickly and withdraws hand quickly

unable to hold rat

holds rat away from body
Name: ___________________________ Year in School _____ Age: ___
(last) ___________________________ (first) ___________________________
Class time: ___________________________ Instructor: ___________________________

Circle the number below which best describes your experience of the situation you were just in.

1  2  3  4  5  6  7  8  9  10

I was just now completely relaxed. I was just now scared as I've ever been.
Anxiety Hierarchy

1. Reaching into a cage with several rats in it and taking one out.
2. Reaching into a cage with only one rat in it and taking it out.
3. Picking up a rat from the table.
4. Touching one of several rats while in its cage.
5. Touching a rat which is alone in the cage.
6. Being handed a rat by someone else and holding it.
7. Touching a rat while someone else holds it.
8. Standing next to someone who is holding a rat.
9. Standing next to the open cage with the rat inside.
10. Carrying a closed cage with a rat in it from one place to another.
11. Standing next to a closed cage with a rat in it.
12. Standing about two feet away from a closed cage with a rat in it.
13. Standing ten feet away from a closed cage with a rat in it.
14. Beginning to approach the cage from the opposite end of the room.
15. Standing at the door of the room watching the rat in its cage.
I more strongly believe that:

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

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

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

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

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

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

7. a) No matter how hard you try some people just don't like you.
   b) People who can't get others to like them don't understand how to get along with others.
I more strongly believe that:

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

9. a) I have often found that what is going to happen will happen.
   b) Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

10. a) In the case of the well prepared student there is rarely, if ever, such a thing as an unfair test.
    b) Many times exam questions tend to be so unrelated to course work that studying is really useless.

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

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

13. a) When I make plans, I am almost certain that I can make them work.
    b) It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
I more strongly believe that:

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

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

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

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

18. a) Most people don't realize the extent to which their lives are controlled by accidental happenings.
    b) There really is no such thing as "luck."

19. a) One should always be willing to admit his mistakes.
    b) It is usually best to cover up one's mistakes.

20. a) It is hard to know whether or not a person really likes you.
    b) How many friends you have depends upon how nice a person you are.
I more strongly believe that:

21. a) In the long run the bad things that happen to us are balanced by the good ones.

   b) Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

22. a) With enough effort we can wipe out political corruption.

   b) It is difficult for people to have much control over the things politicians do in office.

23. a) Sometimes I can't understand how teachers arrive at the grades they give.

   b) There is a direct connection between how hard I study and the grades I get.

24. a) A good leader expects people to decide for themselves what they should do.

   b) A good leader makes it clear to everybody what their jobs are.

25. a) Many times I feel that I have little influence over the things that happen to me.

   b) It is impossible for me to believe that chance or luck play an important role in my life.

26. a) People are lonely because they don't try to be friendly.

   b) There's not much use in trying too hard to please people; if they like you, they like you.

27. a) There is too much emphasis on athletics in high school.

   b) Team sports are an excellent way to build character.
I more strongly believe that:

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

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

Rater:          Subject:         Date:

I. Chevreul's Pendulum Task
   ____ no movement
   ___ moderate movement (one to two inches in either direction)
   ___ intense movement (three to four inches in either direction)
   ___ pendulum sway (the subject swings the weight decidedly along the line)

II. Body Sway
    ____ no movement
    ____ moderate sway (one to two inches forward)
    ___ intense sway (three to four inches forward)
    ___ falling (the subject falls forward or backward in response to suggestion — loss of balance)
BIBLIOGRAPHY


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BIBLIOGRAPHY (CONTINUED)


