EFFECTS OF DESENSITIZATION, ROGERIAN THERAPY, AND MODELING ON STAGE-FRIGHT

APPROVED:

Kevin J. Kennelly
Major Professor

Sidney Hamilton
Minor Professor

Harold D. Holloway
Chairman of the Department of Psychology

Robert B. Toulouse
Dean of the Graduate School

Alston, Herbert L., Effects of Desensitization, Rogerian Therapy, and Modeling on Stage-fright. Master of Arts, May, 1971, 39 pp., 6 tables, references, 33 titles.

Outcome research is important from both a practical and a theoretical point of view, but such research is seldom conducted with adequate controls so that the results may be considered valid. In view of the fact that various outcome studies have shown that Rogerian therapy, desensitization, and modeling procedures are effective in the elimination of anxiety and in producing favorable behavioral changes, it seemed worthwhile to compare these three techniques. A comparison of these three techniques in the same study would allow the use of a number of controls to insure that the resulting differences in outcome were due to the techniques involved rather than some other variables. Since fear of public speaking has been considered a good example of anxiety and an example that is correlated with behavioral and cognitive measures of anxiety levels, a study of Rogerian therapy, desensitization, and modeling techniques in reducing this anxiety seemed appropriate.

It was hypothesized that all three treatments would achieve results superior to a no treatment control group. Due to the limited number of students who volunteered for the study, the no treatment control group was eliminated and a comparison among treatment groups was made. It was also hypothesized

that the desensitization and modeling treatments would be significantly better than the Rogerian treatment as measured by the behavioral changes.

The subjects, who volunteered for the experiment to eliminate their fear of public speaking, were required to give a four minute speech, which was rated on a behavioral checklist. In addition they were administered the Anxiety Differential, the Bernrueter Personality Inventory, and the Fear Survey Schedule. An effort was made to match subjects, but due to the loss of three subjects during the course of the experiment, the groups were not well matched. At the conclusion of nine forty minute therapy sessions held on consecutive days with the exception of Saturday and Sunday, the subjects were again administered the Anxiety Differential, the Bernreuter Personality Inventory, and the Fear Survey Schedule and were required to give another four minute speech which was rated on a behavioral checklist. In addition the subjects rated the concept of "therapist" on the Semantic Differential. Neither analyses of variance nor analyses of covariance of the posttest scores revealed any significant differences among the three groups on any of the measures employed. Therefore, none of the hypotheses advanced in this study were supported.

The criteria proposed by Sundberg and Tyler (1962) and Mealiea, et al. (1968) for outcome research were not fulfilled in the present study. It would seem that poor subject selection and the small number of subjects employed were the most

probable causes of the failure to obtain significant results in this study. Future studies would probably benefit from the use of a larger number of subjects in each treatment group, and a more careful selection of subjects to insure that the subjects did in fact have a fear of public speaking.

EFFECTS OF DESENSITIZATION, ROGERIAN THERAPY, AND MODELING ON STAGE-FRIGHT

THESIS

Presented to the Graduate Council of the North Texas State University in Partial Fulfillment of the Requirements

For the Degree of

MASTER OF ARTS

By

Herbert L. Alston, B. S.

Denton, Texas

May, 1971

LIST OF TABLES

EFFECTS OF DESENSITIZATION, ROGERIAN THERAPY, AND MODELING ON STAGE-FRIGHT

Outcome research is very important from both a practical and a theoretical point of view. From a practical point of view, producing the greatest amount of improvement in the largest per cent of cases by the use of various therapeutic techniques is the most important objective of psychotherapy. From a theoretical point of view, the relative success of the various therapeutic techniques and conditions lends support to or tends to weaken the various theoretical positions. However, it is often difficult to produce outcome research with sufficient controls for the results to be considered valid.

One of the common criticisms of outcome research on psychotherapy is that the judges of the amount of improvement due to therapy are the therapists themselves. Such a practice obviously lends itself to the criticism of experimenter bias. Also, since most therapists use a variety of techniques it is hard to evaluate the effectiveness of the different techniques. Other difficulties to be overcome in outcome research, as indicated by Sundberg and Tyler (1962) and Melicn, et al. (1968), are the selection of appropriate criteria to measure therapeutic change and the use of sufficient controls to insure that the changes measured are in fact due to the treatment sessions. Appropriate criteria to measure therapeutic

change may involve the use of personality tests, tests of neuroticism or adjustment, self reports of change in attitudes, and most important of all, changes in observable behavior. A number of controls may be employed in outcome research such as the following: the use of a no-treatment group that merely receives the pretests and posttests to control for the possible effects of the measurements employed, the passage of time, or some other unknown variable; the use of more than one therapist to insure that the results achieved are due to the techniques employed rather than some trait possessed exclusively by a particular therapist; the use of the same therapists for the different treatment conditions to rule out the effects of differences in ability or experience between therapists; holding the length of time in therapy constant for the different treatment groups; and treating all subjects either individually or in groups. It is obvious that in private practice these conditions would seldom exist and that outcome results from private practice have to be viewed with caution since these studies have not made use of adequate controls. This makes it all the more desirable to have well controlled studies of outcome that can better evaluate the results of different therapeutic techniques and conditions.

Research on Psychotherapy

Bergin (1966) reported six conclusions from his review of psychotherapy research. It was found that subjects under therapy changed more than control groups, but these subjects

became better or worse due to therapy. This fact was used as a criticism of Eysenck's (1960, 1965) report that there were no differences in improvement rate for individuals under psychotherapy and individuals in control groups. The overall per cent of improvement may have been about the same, but there was greater variability, towards improvement or deterioration, for the groups receiving therapy. Second, it was noted that control subjects may improve over time. Third, studies of Rogerian therapy showed that the outcome of therapy was related to therapist qualities such as warmth, empathy, adjustment and experience. Fourth, it was noted that Rogerian psychotherapy was the only interview-oriented therapy to have been throughly researched, and that Rogerian therapy was the only interview-oriented therapy to report results better than spontaneous remission rates for control groups. Fifth, it was noted that traditional insight therapies reported limited results, and that they have been used with a limited number of psychological disturbances. Sixth, the high success rate of the behavior therapies was noted. The behavior outcome studies were criticized because the judges of rate of improvement were the therapists who conducted the therapy, but it was also stated that the behavior therapies offered more promise than any of the other therapies reviewed.

Rogerian Therapy

Rogers (1954) reported a comparison of individuals receiving Rogerian therapy and a control group. The counselors

rated about eighty per cent of the individuals under therapy as improved and noted no change in the control group. The individuals rated as improved in the therapy group showed more mature behavior, had better self concepts, and had desirable changes in personality.

Dymond (Rogers & Dymond, 1954) reported changes in self-sorts before and after therapy for an experimental group, and a control group. It was found that the experimental or therapy group increased significantly in terms of adjustment as measured by the self-sorts, and that there was no change in the control group. It was also found that the therapy group did not change during a no-therapy waiting period.

Shlien (1962) et al. reported that client-centered therapy was effective in terms of a change of self concept as measured by a modified Butler-Haigh Q sort. In addition it was noted that time limited client-centered therapy was just as effective as unlimited client-centered therapy. This fact was also noted by Rogers (1954).

Truax and Carkhuff (1967) reported on a number of studies of the variables thought by Rogers to be effective in producing therapeutic change. These variables are the therapist qualities of empathic understanding, unconditional positive regard for the client, and congruence or genuineness of the therapist. Truax and Carkhuff noted the early research of Betz and Whitehorn in which it was found that one group of psychiatrists had an improvement rate of twenty-seven per cent,

while another group of psychiatrists had an improvement rate of seventy-five per cent. The seventy-five per cent rate was above the improvement rate of a control group and the twenty-five per cent rate was significantly below the control group rate of improvement. It was found that the psychiatrists of the seventy-five per cent improvement rate group were high on the three therapist qualities delineated by Rogers, and that the therapists with the poor improvement rate were low on these qualities. Studies of schizophrenics and out-patients produced similar results. One study by Truax et al., of out-patients showed that the three therapist variables were related to success or failure in the therapeutic situation and that the overall improvement rate was seventy per cent. It was noted that this was the improvement rate Eysenck reported for control and therapy groups. Dividing the therapists into groups that had high and low ratings on the three basic therapists' qualities, it was found that the therapists with the highest ratings produced a ninety per cent improvement rate and that the lower rated therapists produced a fifty per cent improvement rate. Truax and Carkhuff concluded from the results of several studies with different types of disturbances that the therapist qualities of empathy, warmth, and genuineness were the important variables in psychotherapeutic success or failure, and that the Rogerian approach was applicable to all types of functional psychological problems.

Behavior Therapy

Jones (1924) reported one of the earliest studies that may be considered to have used the behavior modification techniques of gradual introduction of the feared stimulus, and the reciprocal inhibition of a fear response by a pleasure response. It was also reported by Jones that social imitation was also very effective in establishing and removing fear responses of children.

Eysenck (1960; Eysenck & Rachman, 1965) has reported on the use of behavior therapy with a wide range of disturbances. It was noted that the improvement rate for insight oriented therapies was no better than the spontaneous remission rate of control subjects, whereas behavior therapists typically report an improvement rate of around ninety per cent. Eysenck makes use of the classical paradigm to explain the acquisition of neurotic fears, phobias or anxieties and explains a lack of appropriate conditioned responses to be responsible for the psychopathic deviate. Personality types are thought to be associated with the conditionability of the individual at birth. An individual is normal to the extent that his behavior has been appropriately conditioned and one is abnormal to the extent that inappropriate responses have been conditioned or appropriate responses have failed to be conditioned.

Wolpe (1958; Wolpe, Salter, & Reyna, 1964; Wolpe & Lazarus, 1966) also makes use of the classical paradigm in the explanation of a number of techniques for behavior

modification. Wolpe reported an improvement rate of about ninety per cent for a large variety of disturbances with the use of such techniques as the following: assertive training, systematic desensitization, the use of sexual responses to inhibit anxiety responses, the use of drugs, and the use of carbon dioxide therapy. Wolpe's method of treating phobias or anxiety responses by reciprocal inhibition or systematic desensitization is perhaps the most worthwhile of his techniques. The concept behind the treatment of anxiety responses by reciprocal inhibition is that if two responses, such as a state of tension and a state of relaxation, are not possible at the same time, that one will inhibit the other. In a typical treatment of an anxiety response by reciprocal inhibition or systematic desensitization there are three important processes. First, the client is taught to relax by a shortened version of Jacobson's (1929) progressive relaxation techniques. Second, a hierarchy of situations is developed ranging from a situation that produces little anxiety through gradual increments to situations that produce a great deal of anxiety in the client. Third, the client is made to relax deeply and then imagine the scenes in the hierarchy starting with those scenes that produce little anxiety. Through the gradual introduction of these scenes in the imagination of the client while he is deeply relaxed, the client becomes able to imagine the scenes which formerly produced the most anxiety without becoming anxious. This is to say that the client has learned to relax

in the imagined presence of the stimuli that formerly were fear producing. The relaxation responses to the imagined situations are then generalized to the actual situations.

Paul (1966) reported an excellent outcome study in which the effects of insight therapy were compared with the effects of desensitization on anxiety reduction. The anxiety response chosen for study was the fear of giving a speech before an audience. It was noted that individuals who have a fear of public speaking are also usually anxious in other social encounter or evaluation situations. The subjects were given a battery of pretreatment tests which included the following: a behavioral checklist rating made by independent judges of the subject's anxiety during an initial four minute speech; a physiological measure of anxiety taken after the speech; and several paper and pencil tests of personality characteristics and anxiety levels. The subjects were divided into four treatment groups. One group received the systematic desensitization developed by Wolpe with a shortened version of the relaxation technique proposed by Wolpe. Group two received insight oriented psychotherapy by experienced insight oriented therapists on an individual basis. Group three was given a placebo treatment to measure the possible effects of therapist attention. And the fourth group received no treatment per se, but they did receive the pretests and posttests. The following results were found: that there was little change for the control group on any of the

pre-to-posttest measures; that all three treatment groups improved significantly as measured by the behavioral checklist and the Anxiety Differential; that only the systematic desensitization group was significantly different from the control group as measured by the physiological measures used, i.e., the Palmar Sweat Index and pulse rate; that the desensitization treatment produced superior anxiety reduction compared to the insight and placebo treatment groups; that the placebo and insight groups were about equally effective; that the self reports of improvement by the subjects indicated that all had improved to the same extent in contrast to the difference in anxiety reduction by treatments indicated by the other measures employed; that the therapist's reports of improvement were biased in favor of the insight treatment subjects, although at the end of the study the therapists thought that desensitization was the best and quickest treatment for the specific result of reduction of anxiety in a public speaking situation for most subjects; and that the therapist qualities of warmth and impression of competence did not affect the outcomes in any of the treatment conditions. It was also found that an analysis of improved and much improved subjects by treatments, as measured by the pretest and posttest batteries, produced the following results: fourteen per cent of the desensitization subjects were rated as improved and eighty-six per cent were rated as much improved for a total of one hundred per cent improvement; twenty-seven per cent of the insight group

were rated as improved and twenty per cent much improved for a total of forty-seven per cent improvement; forty-seven per cent of the attention-placebo group were rated as improved and none were rated as much improved for a total of forty-seven per cent improvement; seventeen per cent of the treatment control group were rated as improved and none were rated as much improved for a total of seventeen per cent improvement. It was noted that desensitization produced one hundred per cent improvement, and that insight and placebo treatments each produced forty-seven per cent improvement. Paul (1968) reported a two year follow up in which subjects who had received the desensitization treatment were still superior to those who had received the placebo or insight treatment.

Kondas (1967) has also reported the successful reduction of stage-fright anxiety by desensitization. Kondas made use of group desensitization and relaxation, as did Paul and Shannon (1966) in an earlier study.

Social-learning Theory

Bandura and Walters (1963) have proposed a social learning theory of personality development and behavior modification. It is emphasized that individuals develop in a social context and that many behaviors are learned solely by observation of the behavior of others. This vicarious learning does not require that the observer make any overt responses or receive directly any reward or punishment to have learned these responses. Bandura (in London & Rosenhan, 1968; and Bandura,

1969) reported that social learning seemed to involve both peripheral and central components of the autonomic and the central nervous system, and that of these two systems the central nervous system was by far the most important. The conclusion that the central components involved in learning are more important than the peripheral components was partly based on the work of Solomon and Turner (1962) and Wynne and Solomon (1955). These studies found that organisms that were paralyzed by curare or organisms that had the sympathetic and parasympathetic nervous system inactivated by surgery or drugs were still able to learn appropriate responses. However, the social learning of complete sets of responses vicariously without overt responding in what has been called no trial learning suggests that vicarious learning is different from either classical or instrumental conditioning and can not be adequately explained by either paradigm. It is noted that the individual learns a set of values and rewards himself or punishes himself on the basic of whether he lives up to his value system. Modeling can account for both the acquisition, modification, or extinction of attitudes, values, and overt responses.

Bandura and Menlove (1968) and Bandura et al. (1967) have reported that avoidance behavior toward a feared stimulus can be vicariously extinguished by allowing the subjects to observe that a model's interaction with the feared stimulus produces no adverse consequences to the model. As noted

previously, the fact that social imitation was very effective in the establishment and extinction of fear responses was reported by Mary Caver Jones as early as 1924.

Bandura, Blanchard, and Ritter (1969) reported a study of the comparison of desensitization, modeling and guided desensitization on behavioral, emotional, and attitude changes in the elimination of a snake phobia. The subjects in the desensitization group were treated by Wolpe's technique of inducing the imagined scenes while the subject was deeply relaxed. The subjects in the symbolic modeling group observed a model approach and associate with the feared stimulus repeatedly without being harmed. The subjects in the contact desensitization group not only observed a live model, but were encouraged to imitate his actions with his assistance. At the conclusion of the treatments the subjects were given a behavioral avoidance test, a fear inventory, and various measures of attitudes were taken. It was found that contact desensitization was the most successful treatment, although all techniques were effective. A comparison of symbolic desensitization and symbolic modeling revealed that they were equally effective in producing behavioral change, but that symbolic modeling produced more favorable changes in attitudes and fear arousal than did symbolic desensitization. It was also reported that the subjects in the symbolic desensitization and symbolic modeling groups could not perform the terminal level activities even though these activities had

lost their ability to arouse fear in the subjects symbolically. This failure of generalization or transfer to the actual situation was corrected by a short period of contact desensitization.

Bandura (1969) reported that modeling in conjunction with schedules of reinforcement was largely responsible for the acquisition and maintenance of social learning. And the failure of modeling behavior to occur was a result of ". . . failures in sensory registration, inadequate transformation of modeled events to symbolic modes of representation, retention decrements, motor deficiencies, or unfavorable conditions of reinforcement." (Bandura, 1969, p. 143).

O'Conner (1969) reported a study of preschool children who withdrew from social interaction with their peers. The children were divided into two groups and each group was shown a film. The experimental group viewed a film in which other preschool children were rewarded for increasing their interaction with their peers. The control group viewed a film that did not emphasize social interaction. The results were that the experimental group subjects became as active socially as the regular nursery school children, while the control group individuals remained withdrawn from social contact.

Successful Outcome Research Techniques

In view of the fact that various outcome studies have shown that Rogerian therapy, desensitization, and modeling

procedures are effective in the elimination of anxiety and in producing favorable behavioral changes, it would seem worthwhile to compare these three techniques. A comparison of these three techniques in the same study would allow the use of a number of controls to insure that the resulting differences in outcome would be due to the techniques involved rather than some other variables. Since fear of public speaking has been considered a good example of anxiety, and an example that is correlated with behavioral and cognitive measures of anxiety levels, a study of Rogerian therapy, desensitization, and modeling techniques in reducing this anxiety would seem to be appropriate.

Research done by Rogers and his associates has demonstrated that the client's perception of the therapist is an important factor in therapeutic outcome. It is possible that the treatment the subject receives will influence the perception of the therapist by the subject; that is, the therapist's qualities as viewed by the subject may be influenced by the role in treatment that the therapist plays rather than his individual personality or characteristics. Since the role the therapist plays in each treatment condition may influence the subject's perception of the therapist, the concept of "therapist" was rated on the Semantic Differential by the subjects in each treatment group at the end of the study and a comparison among groups was considered.

The research on systematic desensitization would indicate that the reciprocal inhibition of the anxiety response by a competing response is the important variable. Differences in therapist qualities are considered less important than the therapist's capacity to administer the desensitization technique. The research on vicarious learning indicates that modeling is the important variable in extinguishing the undesirable responses and adopting the desirable responses.

It was originally hypothesized that all three treatments would achieve results superior to a no-treatment control group. This hypothesis could not, however, be tested in the present study since the no-treatment control group had to be dropped from the study because of the unavailability of an adequate number of subjects. It was also hypothesized that the desensitization and modeling treatments would be significantly better than the Rogerian treatment as measured by the behavioral changes. This hypothesis was tested in the present study.

Method

Subjects

It was planned that twenty female students at North Texas State University, who desired to participate in an experiment to overcome their fear of public speaking, would be used as subjects. However, due to the few female students who volunteered for the study, male students were included in the sample. Even with males included in the study, it proved extremely

difficult to obtain volunteers for the study. Also, three subjects who began the study dropped out before completion due to schedule conflicts between themselves and the therapists. Only five female and nine male students completed the experiment. These students were given some credit in the courses they were taking for participating in this study.

Instruments

A number of instruments were used to measure the pretreatment and posttreatment levels of anxiety, neuroticism, and attitude or personality change. The Fear Survey Schedule developed by Wolpe and Lang (1964) was administered as a measure of general over-all anxiety level. A behavioral checklist developed by Paul (1966) and the Anxiety Differential (Husek & Alexander, 1963; Alexander & Husek, 1962) used by Paul were administered as measures of stage-fright or anxiety in the public speaking situation. And the Bernreuter Personality Inventory (Tyler, 1953) was used as a measure of personality or attitude change. In addition, the subjects were asked to rate the concept of "therapist" at the conclusion of the experiment on the Semantic Differential. The behavioral checklist, Anxiety Differential, Bernreuter Personality Inventory, and the Fear Survey Schedule were given before and after the treatment sessions.

Therapists and Judges

The therapists were five female students in a counseling practicum at North Texas State University who were working

toward the master's degree in guidance and counseling. Two graduate students from the psychology department were trained to act as judges, and to collect data with the behavioral checklist. However, one of these judges was eliminated from the study due to the fact that the study began at a later date than originally planned.

Design

It was proposed that the subjects be matched on the basis of ratings on the behavioral checklist administered prior to the treatment sessions. However, due to the limited number of students who volunteered for the experiment and the elimination of three subjects due to a conflict in the hours they were employed, the groups were not well matched in terms of pretreatment ratings on the behavioral checklist. The behavioral checklist data was used for matching purposes because behavioral changes were considered more important than the other measures employed. The scores were ordered from high to low and then divided into groups of three. One score from each group of three was randomly placed in each treatment group. Since the objective was to obtain equivalent means, some of the scores were then changed from one group to another until the means of the three treatment groups were as near equal as possible. However, the match was poor and subsequent subject loss made it poorer. Four subjects received the modeling technique, five subjects received the Rogerian technique, and five subjects received the

desensitization technique. An inadequate number of volunteers for the study eliminated the proposed use of a no-treatment control group.

The treatment for the modeling group consisted of listening to a taped presentation which presented a vignette of a model who, without fear, speaks in public and to whom no adverse consequences occur. The treatment for the Rogerian group is assumed to be the therapeutic relationship and the effect of the therapist qualities of empathy, unconditional positive regard for the client, and genuineness of the therapist. The treatment for the desensitization group is assumed to be the reciprocal inhibition of the anxiety response by the relaxation response. The dependent variables were a change in their overt responding as measured by the behavioral checklist, a change in their general level of anxiety as measured by the Fear Survey Schedule, a change in their personality or attitude as measured by the Bernreuter Personality Inventory, a change in their fear of public speaking as measured by the Anxiety Differential, and differences in the concept of therapist as rated by the subjects on the Semantic Differential.

Procedure

Volunteers for the experiment were required to give a four minute speech and were evaluated with the behavioral checklist. The Fear Survey Schedule, the Anxiety Differential, and the Bernreuter Personality Inventory were then administered

before the treatment sessions commenced. Each subject received nine forty minute sessions of treatment for a total of six hours of treatment. The therapy sessions were held on consecutive days except for Saturday and Sunday. Four subjects completed the modeling sessions; five subjects completed the Rogerian sessions; and five subjects completed the desensitization sessions.

The subjects in the desensitization group were taught on an individual basis to relax following the procedure reported by Wolpe and Lazarus (1966), and a hierarchy was constructed and presented on a time table similar to that reported by Paul (1966). During the first session approximately ten minutes were used to note any past experiences that the client felt might have caused him to have a fear of public speaking and in eliciting a statement of current symptoms in the public speaking situation. For approximately five minutes the rationale of reciprocal inhibition or systematic desensitization was discussed, that is, that the current fears are a product of past learning and that these fears can be eliminated by learning to relax and associating the relaxation response to the stimuli that currently produced the anxiety responses. The subject was assured that regardless of the cause of the current anxiety associated with public speaking, the anxiety responses could be reciprocally inhibited by the relaxation response. The next fifteen minutes were used for the construction of a hierarchy of scenes that

were graduated in small increments from those that caused little anxiety to those that caused a great deal of anxiety. The last ten minutes of the first session was devoted to teaching the subject to relax first the arms and secondly the facial area, neck, and shoulders as described by Wolpe and Lazarus (1966).

The first twenty minutes of the second desensitization session were used to review the relaxation of the arms, face, neck and shoulders and the subject was then taught to relax the rest of his body. The subject's ability to visualize situations was then tested by requesting the subject to visualize various nonthreatening scenes. The subject was instructed to lift the left index finger if any anxiety was felt when asked to visualize the scenes in the hierarchy. The subject was induced into a state of deep relaxation and presented with the first of the scenes in the hierarchy. At the conclusion of the second desensitization session the subject was instructed to practice deep relaxation techniques once or twice a day for fifteen minutes and no more per day.

During desensitization sessions three through nine the subject was first relaxed and then presented with the various scenes. If the subject indicated that he was anxious, he was told to stop visualizing the scene and was helped to relax deeply for thirty to forty-five seconds. After the subject was again very relaxed, the scene was again presented for a few seconds and so on until the subject could visualize all

of the scenes for periods up to ten seconds without anxiety, or until the time allotted for treatment was over.

The Rogerian group was treated individually by Roger's nondirective or client centered method. The subjects discussed their problems with the therapist and tried to resolve their fear of public speaking. The emphasis with this method was to establish a therapeutic relationship. The Rogerian group received nine forty minute sessions on nine consecutive days with the exception of Saturday or Sunday as did the other treatment groups.

The modeling group listened to a tape in which a narrator and two female actresses presented a dialogue of scenes similar to the twelve scenes proposed by Paul (1966) for the desensitization hierarchy. This tape was originally made under the assumption that all of the subjects in the experiment would be females. The fact that very few female subjects volunteered for the experiment necessitated the inclusion of male subjects in the modeling group. The modeling group was not taught to relax or encouraged to relax. If the subject felt anxious while listening to the tape, he was instructed to inform the therapist. The therapist would stop the tape, rewind the tape, and start it again. This procedure was followed until the end of the time alloted for treatment.

At the end of the treatment sessions all the subjects were required to give a four minute speech, which was judged by the use of the behavioral checklist. The Anxiety

Differential, the Fear Survey Schedule, and the Personality Inventory were again administered. Also, the subjects rated the concept of "therapist" on the Semantic Differential. A series of analyses of variance were performed on the pretest and posttest scores. Three factors on the Bernreuter Personality Inventory pretest scores were found to be significantly different among treatment groups at the .10 level of confidence. Therefore, an analysis of covariance was computed for each of these three factors using the pretest score for the covariate and the posttest score as the dependent measure. In addition Pearson product moment correlations were computed between the pretest scores, the posttest scores, and the pretest and posttest scores.

Results

The means and standard deviations by treatment groups for the various measures employed on the pretest and posttest may be seen in Table 1. An analysis of variance on the pretest scores on the behavioral checklist, the Anxiety Differential, the Fear Survey Schedule, and factors B2-S (self-sufficiency), F1-C (self-confidence), F2-S (sociability) of the Bernreuter Personality Inventory indicated no significant differences among groups at the .10 level of confidence. An analysis of variance of the posttest scores was computed on these measures. As can be seen in Table 2 there were no significant differences at the .10 level of confidence among groups on the posttest measures of these factors.

Table 1

Means and Standard Deviations*

		Desensitization		Rogerian		Modeling	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
Behavioral	Pre	23.2	7.79	20.80	3.56	20.25	8.42
Checklist	Post	20.33	3.51	17.25	3.10	13.50	5.26
Anxiety	Pre	56.80	11.52	53.20	9.47	55.00	4.69
Differential	Post	56.25	13.05	48.20	12.44	52.75	17.40
Personality							
Inventory							
B1-N	Pre	73.80	29.37	43.20	34.23	50.33	28.99
	Post	69.00	39.69	38.60	29.60	50.33	30.29
B2-S	Pre	35.20	32.41	42.60	35.51	39.67	42.71
	Post	22.25	17.10	53.20	31.97	45.33	43.66
B3-I	Pre	77.20	21.36	43.00	29.06	43.67	48.30
	Post	66.75	34.36	47.60	24.76	46.33	31.56
B4-D	Pre	27.00	29.35	67.80	25.27	59.67	40.50
	Post	27.25	39.02	65.60	26.58	59.67	34.59
F1-C	Pre	69.60	31.95	46.80	30.12	54.00	36.72
	Post	59.50	41.25	56.80	30.02	53.33	28.10
F2-S	Pre	66.40	17.21	53.00	33.66	52.33	37.74
	Post	37.50	28.73	53.60	26.31	54.33	46.11
Fear Survey	Pre	86.80	27.56	69.80	35.95	101.50	50.95
Schedule	Post	70.33	20.98	52.20	30.61	82.67	47.29

Continued

Table 1 Continued

		Desensitization		Rogerian		Modeling	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
Semantic Differential							
Evaluative	Post	26.50	1.91	26.40	4.16	30.75	2.63
Potency	Post	18.50	4.65	16.80	6.50	20.25	1.71
Activity	Post	19.75	.50	20.20	4.66	22.00	1.83

*Rounded to two places.

Table 2

Simple ANOVA of Posttest Scores

Source	df	MS	F
Behavioral Checklist			
Between Groups	2	40.88	2.4*
Within Groups	8	17.05	
Anxiety Differential			
Between Groups	2	73.31	.51*
Within Groups	10	143.23	
Fear Survey Schedule			
Between Groups	2	1838.59	.81*
Within Groups	8	9100.14	
Personality I. F1-C			
Between Groups	2	32.6	.03*
Within Groups	9	1143.16	
Personality I. B2-S			
Between Groups	2	1103.35	1.13*
Within Groups	9	975.36	
Personality I. F2-S			
Between Groups	2	358.03	.34*
Within Groups	9	1055.43	

*$p > .10$

A significant difference among groups at the .10 level of confidence on the pretest scores was found for the following factors on the Personality Inventory: B1-N (neurotic tendency), B3-I (introversion-extroversion) and B4-D (dominance-submission). An analysis of covariance was computed for each of these factors using the pretest scores as the covariate and the posttest scores as the dependent measure. As can be seen in Table 3, no significant differences among groups at the .10 level of confidence were found for any of these factors.

Table 3

Analysis of Covariance
of Post-test Scores

Source	df	MS	F
Personality Inventory B4-D			
Error	8	274.63	.79*
Treatment	2	215.67	
Personality Inventory B1-N			
Error	8	613.09	.19*
Treatment	2	113.91	
Personality Inventory B3-I			
Error	8	470.26	.44*
Treatment	2	207.38	

*$p > .10$

Tables of correlation utilizing the Pearson product moment correlation were computed to evaluate the possibility that a

number of the measures employed in this study were measuring the same or similar factors. As can be seen from an examination of Table 4, there were several high correlations among the various pretest measures on the Personality Inventory. This was to be expected as Bernreuter (1935) and others (Lorge, 1935; Mosier, 1940, and Tyler, 1953) have previously noted the high correlations among the various scales on the Personality Inventory. A high positive correlation between the Anxiety Differential and the neurotic tendency (B1-N) factor on the Personality Inventory was noted. This correlation was significant at the .01 level of confidence. And a high negative correlation between the self-sufficiency (B2-S) factor and the Fear Survey Schedule was noted. This correlation was also significant at the .01 level of confidence.

A table of correlations of the posttest measures, as can be seen in Table 5, reveals similar correlations. There are several high correlations among the factors on the Personality Inventory. The Anxiety Differential has a high positive correlation with the B1-N (neurotic tendency) factor at the .01 level of significance, and with the B3-I (introversion-extroversion) factor at the .01 level of significance. There is also a high negative correlation between the Anxiety Differential and the B4-D (dominance-submission) factor of the Personality Inventory. This correlation is significant at the .01 level of significance.

Table 4

Correlations Among Pretest Measures*

Scale	Behav. Check.	Anx. Diff.	B1-N	B2-S	B3-I	B4-D	F1-C	F2-S	Fear S.S.
Behavior Check									
Anx. Diff.	47								
Pers. Inv.									
B1-N	21	71**							
B2-S	-27	-32	-60*						
B3-I	22	64*	96**	-48					
B4-D	-36	-67*	-86**	67*	-76**				
F1-C	33	59*	87**	-60*	82**	-78**			
F2-S	-12	-01	01	71**	18	28	-03		
Fear S.S.	07	25	57*	-73**	58*	-42	40	-36	

*Pearson product moment correlations rounded to two places with plus signs and decimals omitted. One asterisk in the body of the table indicates the .05 level of significance and a double asterisk indicates the .01 level of significance.

Table 5

Correlations Among Posttest Measures*

Scale	Behav. Check	Anx. Diff.	B1-N	B2-S	B3-I	B4-D	F1-C	F2-S	Fear S.S.	Eval.	Poten.	Act
Behavior Check												
Anx. Diff.	06											
Pers. Inv.												
B1-N	12	94**										
B2-S	-34	-54	-59*									
B3-I	14	88**	94**	-37								
B4-D	-44	-80**	-77**	77**	62*							
F1-C	30	69*	63*	-31	72**	-44						
F2-S	-27	03	08	59*	32	39	26					
Fear S.S.	-30	55	66*	-64*	52	-34	50	-06				
Semantic D.												
eval.	-52	03	00	16	-09	06	-33	07	22			
potency	-37	-41	-47	17	-54	23	-54	-48	-11	48		
activity	-58	-28	-31	48	-25	29	-25	08	-08	47	71**	

*Pearson product moment correlations rounded to two places with plus signs and decimals omitted. One asterisk in the body of the table indicates the .05 level of significance and a double asterisk indicates the .01 level of significance.

Table 6 is a table of correlations between the pretest and the posttest measures. As can be seen in Table 6, the test retest correlations are high, as well as correlations among the various Personality Inventory factors. There is again a high positive correlation between the posttest anxiety Differential scores and the pretest B1-N (neurotic tendency) and B3-I (introversion-extroversion) factors of the Personality Inventory. Also there is a high positive correlation between the pretest Anxiety Differential scores and the posttest B1-N and B3-I factors of the Personality Inventory. These correlations are significant at the .01 level of confidence. There is a high negative correlation between the pretest Anxiety Differential scores and the posttest B4-D (dominance-submission) factor. This correlation is significant at the .01 level of confidence. There is also a nigh negative correlation between the posttest Anxiety Differential scores and the pretest B4-D factor. This correlation is significant at the .05 level of confidence. A fairly high negative correlation between the pretest Fear Survey Schedule scores and the posttest B2-S (self-sufficiency) factor scores, as well as, a fairly high correlation between the posttest Fear Survey Schedule scores and the pretest B2-S factor scores is also evident. These two correlations are significant at the .05 level of confidence.

Summarizing the data from the three tables of correlations, it can be seen that there was a high correlation between

Table 6

Correlations Among Pretest and Posttest Measures*

Scale	Posttest Measures: Behav. Check.	Anx. Diff.	Personality Inventory: B1-N	B2-S	B3-I	B4-D	F1-C	F2-S	Fear S.S.
Pretest Measures									
Behavior Check	62*	34	38	-42	40	-50	51	12	14
Anx. Diff.	15	87**	77**	-35	76**	-79**	62*	10	27
Pers. Inv.									
B1-N	28	81**	76**	-59*	71**	-72**	61*	-17	45
B2-S	-36	-45	-50	93**	-33	63*	-46	58*	-68*
B3-I	22	76**	74**	-50	73**	-60*	60*	-08	47
B4-D	-48	-66*	-62*	77**	-46	90**	-40	50	-29
F1-C	33	63*	50	-53	46	-56	74**	-19	42
F2-S	-26	-01	-03	64*	20	37	08	71**	-28
Fear S.S.	-05	51	61*	-62*	51	-39	36	-35	83**

*Pearson product moment correlations rounded to two places with plus signs and decimals omitted. One asterisk in the body of the table indicates the .05 level of significance and a double asterisk indicates the .01 level of significance.

various factors on the Personality Inventory; that there was a high positive correlation between the Anxiety Differential and factors B1-N, B3-I, and F1-C of the Personality Inventory; that there was a high negative correlation between the Anxiety Differential and the B4-D factor of the Personality Inventory; and that there was a high negative correlation between the Fear Survey Schedule and the B2-S factor of the Personality Inventory. None of these correlations are surprising in view of the factors or attributes which they purport to measure. In recognition of the reduncacy involved in using more than one measure of the same or similar factors, as indicated by the high correlations, future studies should consider using a reduced number of measures.

Discussion

The purpose of this study was to compare three techniques which have been shown to be effective in the reduction of anxiety in previous studies of psychotherapy. This was thought to be especially useful since these techniques have not previously been directly compared, and because most of the previous studies of these techniques have been inadequate in one way or another. However, due to an inadequate number of volunteers for this study, and the consequent poor subject selection, the criteria proposed by Sundberg and Tyler (1962) and Mealica, et al. (1968) were not fulfilled.

It was hypothesized that all three treatment groups would achieve results significantly better than a no-treatment control

group. The small number of students who could be induced to participate in the study eliminated the use of a no-treatment control group and therefore only a comparison among treatment groups was possible.

It was hypothesized that the desensitization and modeling treatments would produce results significantly better than the Rogerian treatment, as measured by the behavioral checklist. This hypothesis was not supported as no differences among treatment groups at the .10 level of confidence were found in the analysis of the posttest behavioral scores.

The effect of the therapists assuming a different role in each treatment condition upon the subjects' rating of the concept of "therapist" on the Semantic Differential was also evaluated. There were no significant differences among the treatment groups at the .10 level of confidence on their rating of the concept of therapist. The role the therapists assumed did not effect the reported concept of the therapist by the subjects.

Due to the limited number of subjects obtained for this experiment, male subjects were included in the modeling treatment group. The modeling treatment tape involved the use of female models and was designed for use with female subjects. The effect of using this tape with male subjects could not be ascertained due to the small number of subjects in the treatment group, but it is possible that the effect was not favorable in terms of a positive treatment effect. Also, the use

of subjects, who were induced to participate in the study by being given credit in one of their classes may have operated to provide subjects who desired extra credit but did not necessarily have a fear of public speaking. The availability of a large number of possible subjects, from which a sample that had a genuine fear of public speaking could be chosen, would facilitate a study such as this one. The inclusion of more subjects in each treatment group would also produce more confidence in the outcome of a similar study if no significant treatment effects were found.

The use of the .10 level of confidence to indicate a significant difference among groups was due to the suspected crudity of the measurements employed and the small number of subjects employed in the study. It was feared that it was more likely that a Type II error would be made than a Type I error, that is, it would be concluded that there was no difference among groups, when in fact there was a difference among groups due to treatment effects. To protect against a Type II error a greater chance of a Type I error was allowed.

The fact that there were no significant differences among the treatment groups may be explained by a number of factors. The fact that male subjects were included in the modeling group, which had been designed for use with female subjects, and the fact that the students used as therapists were not experienced clinicians, which may have been especially important for the desensitization and Rogerian groups, may have

caused these techniques to be ineffective in the present study. However, it would seem more probable that some other combination of factors was responsible for the failure of this study to obtain significant results. It would seem that poor subject selection and the small number of subjects employed were the most probable causes of the failure to obtain significant results. Future studies would probably benefit from the use of a larger number of subjects in each treatment group and a more careful selection of subjects to insure that the subjects did in fact have a fear of public speaking.

REFERENCES

Alexander, S., & Husek, T.R. The anxiety differential: initial steps in the development of measures of situational anxiety. Educational and Psychological Measurement, 1962, 22, 325-348.

Bandura, A. A social learning interpretation of psychological dysfunctions. In London & Rosenhan (Eds.) Foundations of Abnormal Psychology. New York: Holt, Rinehart, & Winston, 1968.

Bandura, A., Blanchard, E.B., & Ritter, B. Relative efficacy of desensitization and modeling approaches for inducing behavioral, affective, and attitudinal changes. Journal of Personality and Social Psychology, 1969, 13, 173-199.

Bandura, A., Grusec, J.E., & Menlove, F.L. Vicarious extinction of avoidance behavior. Journal of Personality and Social Psychology, 1967, 5, 16-23.

Bandura, A., & Menlove, F.L. Factors determining vicarious extinction of avoidance behavior through symbolic modeling. Journal of Personality and Social Psychology, 1968, 8, 99-108.

Bandura, A. Principles of behavior modification. New York: Holt, Rinehart, & Winston, 1969.

Bandura, A., & Walters, R.H. Social learning and personality development. New York: Holt, Rinehart, & Winston, 1963.

Bernreuter, R.G. Manual for the personality inventory. Stanford: Stanford University Press, 1935.

Cronbach, L.J., & Furby, L. How we should measure "change"--or should we? Psychological Bulletin, 1970, 74, 68-80.

Eysenck, H.J. Behavior therapy and the neurosis. New York: Pergamon Press, 1960.

Eysenck, H.J., & Rachman, S. The causes and cures of neurosis. San Diego, California: Robert R. Knapp, 1965.

Husek, T.R., & Alexander, S. The effectiveness of the anxiety differential in examination stress situations. Educational and Psychological Measurement, 1963, 23, 309-318.

Jacobson, E. Progressive relaxation. Chicago, Illinois: University of Chicago Press, 1929.

Jones, M.C. The elimination of children's fears. Journal of Experimental Psychology, 1924, 7, 383-390.

Kondas, O. Reduction of examination anxiety and 'stage-fright' by group desensitization and relaxation. Behavior Research and Therapy, 1967, 5, 275-281.

Lorge, I. Personality traits by fiat. I. the analysis of the total trait scores and keys of the bernreuter personality inventory. Journal of Educational Psychology, 1935, 26, 273-278.

Mealiea, W.L., Jr., McGlynn, F.D., & Nawas, M.M. Systematic desensitization parameters: methodological problems. Unpublished Manuscript, 1968.

Mosier, C.I. A review of Bernreuter's Personality Inventory. In O.K. Buros (Ed.) The Nineteen Hundred and Forty Mental Measurements Yearbook. Highland Park, New Jersey: Braun-worth & Co., Inc., 1941, 81-82.

O'Conner, R.D. Modification of social withdrawal through symbolic modeling. Journal of Applied Behavior Analysis, 1969, 2, 15-22.

Osgood, C.E., Suci, G.J., & Tannenbaum, P.H. The measurement of meaning. Urbana, Illinois: University of Illinois Press, 1957.

Paul, G.L. Insight vs. desensitization: an experiment in anxiety reduction. Stanford, California: Stanford University Press, 1966.

Paul, G.L., & Shannon, D.T. Treatment of anxiety through systematic desensitization in therapy groups. Journal of Abnormal Social Psychology, 1966, 71, 124-135.

Paul, G.L. Two year follow up of systematic desensitization in therapy groups. Journal of Abnormal Psychology, 1968, 73, 119-130.

Shlier, J.M., Mosak, H.H., & Dreikurs, R. Effect of time limits: a comparison of two psychotherapies. Journal of Counseling Psychology, 1962, 9, 31-34.

Solomon, R.L., & Turner, L.A. Discriminative classical conditioning in dogs paralyzed by curare can later control discrimination avoidance responses in the normal state. Psychological Review, 1962, 69, 202-219.

Sundberg, N.D., & Tyler, L.E. Clinical psychology. New York: Appleton Century Crofts, 1962.

Truax, C.B., & Carkhuff, R.R. Toward effective counseling and psychotherapy. Chicago: Aldine Publishing Co., 1967.

Tyler, L.E. A review of bernreuter's personality inventory. In O.K. Buros (ed.) The fourth mental measurements yearbook. Highland Park, New Jersey: Gryphon Press, 1953, 77-78.

Wolpe, J., & Lang, P.J. A fear survey schedule for use in behavior therapy. Behavior research and therapy, 1964, 2, 27-30.

Wolpe, J., & Lazarus, A.A. Behavior therapy techniques. New York: Pergamon Press, 1966.

Wolpe, J. Psychotherapy by peciprocal inhibition. Standord, California: Stanford University Press, 1958.

Wolpe, J., Salter, A., and Reyna, L.J. (Eds.) The conditioning therapies. New York: Holt, Rinehart & Winston, 1964.

Wynne, L.C., & Solomon, R.L. Traumatic avoidance learning: acquisition and extinction in dogs deprived of normal peripheral automonic function. Generic Psychology Monographs, 1955, 52, 241-284.