DIFFERENTIAL RESPONSE OF SPEECH-ANXIOUS REPRESSORS
AND SENSITIZERS TO SYSTEMATIC DESENSITIZATION
AND RATIONAL-EMOTIVE THERAPY

DISSERTATION

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By

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There is a scarcity of objective criteria upon which to select among the available therapies for those most likely to benefit specific patients. Comparative research has suggested that the outcomes of alternative and competitive therapies are equivalent. There are few facts available concerning which patients benefit most from even the more popular therapies. The purpose of this study was to find a type of patient for which differential improvement could be predicted.

Systematic desensitization and rational-emotive therapy were chosen as representative therapies. The concept of repression-sensitization was used to define patient types that might moderate the effectiveness of rational-emotive therapy and desensitization. Repressors, or those who excessively avoid, deny and repress, were predicted to be helped more by desensitization than rational-emotive therapy. Sensitizers, or those who worry excessively but approach anxiety-arousing situations, were hypothesized to improve more with rational-emotive therapy than desensitization.
Speech anxiety was the disorder chosen to test for differential effects.

The subjects were 24 undergraduates with a mean age of 21.2. Nine were male and 15 were female. They had been selected from among speech-anxious volunteers on the basis of their scores on the Repression-Sensitization Scale. After a pretest speech provided Behavior Checklist scores, subjects were ranked on their repression-sensitization scores and alternately assigned to one of two groups. It was decided at random which group would receive what treatment.

Eight sessions of group desensitization were completed with seven sensitizers and six repressors. Group rational-emotive therapy of similar length was completed with five sensitizers and six repressors. All therapy was conducted by the same PhD clinical psychologist. Improvement was indicated by decreases in Behavior Checklist scores and by increases in speaking time. Four trained observers rated pre-and posttherapy speaking behavior on the Behavior Checklist. Analysis of covariance was used to determine the significance of differential changes in speaking time as well as in overt manifestations of anxiety measured by the checklist. Results on both these variables indicated no significant differential improvement.

Neither therapy decreased checklist scores or increased speaking time significantly more than the other. Repressors
and sensitizers responded equally to therapy. When dropout rates were analyzed there were also no significant differences between the therapies or between repressors and sensitizers. When posttherapy scores from both therapies were compared to pretherapy scores, no significant changes were found. The latter finding was important for understanding the absence of support for the hypotheses. Since the subjects did not improve as a result of either desensitization or rational-emotive therapy, there was no opportunity to observe the hypothesized differential changes.

Given this hindsight, it was concluded that speech anxiety may not be a desirable disorder with which to study the prediction that repression-sensitization is related to the outcome of rational-emotive therapy and desensitization. It was recommended that future research of this relationship utilize a disorder for which therapeutic effectiveness is more firmly established.
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DIFFERENTIAL RESPONSE OF SPEECH-ANXIOUS
REPRESSORS AND SENSITIZERS TO SYSTEMATIC DESENSITIZATION
AND RATIONAL-EMOTIVE THERAPY

Systematic desensitization has long been used and widely researched as a method of treatment for behavioral disorders. In 1967 Rachman claimed that desensitization was "the most widely used method of behavior therapy" (p. 93). By 1971, Krasner concluded that "in terms of sheer output of research, the desensitization branch of behavior therapy ranks just behind that of positive reinforcement" (p. 500). Hoon and Lindsley (1974) used proportions of published articles to estimate how widely behavior therapy was used in comparison with other methods of treatment. They found that the number of publications on behavioral treatments was growing rapidly compared to other therapies. Desensitization has had a strong impact on both research and practice.

Reviewers of the literature, Rimm and Masters (1974) and Yates (1975) have concluded that desensitization successfully deals with a broad spectrum of disorders. While an unsatisfactory situation has existed in that "the critical factors remain unclear and the theoretical explanations conflicting and indecisive" (Yates, 1975, p. 174), no one has suggested conditions under which desensitization would not
be an appropriate treatment of choice. Initially, Wolpe (1958) asserted that three factors were critical for successful outcome with desensitization: a strong anxiety-competing response, a hierarchical arrangement of anxiety-provoking stimuli, and contiguous pairing of aversive stimuli and competing responses. The research literature did not fully support this theoretical view of desensitization (Yates, 1975). In addition, Kazdin and Wilcoxin (1976) suggested that control methods used in desensitization research did not adequately rule out nonspecific treatment effects, e.g., attention, suggestion, and expectancy, as explanations for change. Aside from theoretical and methodological problems, other practical questions, perhaps of more concern to the practitioner, remain.

Many researchers compared desensitization outcome with that of other therapies. Early studies which compared desensitization to "psychotherapy" suggested the superiority of desensitization (Cornish & Dilly, 1973; Gelder & Marks, 1966; Gelder, Marks, Wolfe & Clark, 1967; Gillan & Rachman, 1974; Paul, 1966; Weinman, Gelbert, Wallace & Post, 1972). While the "psychotherapy" frequently appeared to be psychoanalytic by description or implication, there were no operational procedures to establish this was the case. For this reason, one cannot conclude that desensitization produces greater change than psychoanalytic therapy. When Sloane, Staples, Cristol, Yorkston, and Whipple (1975) compared behavior
therapy with brief psychoanalytic therapy no such difference was found.


The results of these studies suggested a trend in which desensitization lead to comparatively greater improvement when self-report measures were considered. A converse trend was obtained with behavioral measures. Chang-Liang and Denney (1976), Holroyd (1976), and Moleski and Tosi (1976) indicated that applied relaxation and cognitive therapy provided greater improvement than desensitization on both measures. On the other hand, Germer (1975) obtained greater change in a behavioral measure with desensitization than rational-emotive therapy. Although these results are contradictory, one can
readily interpret the literature as demonstrative that outcomes are similar regardless of therapy choice.

The rationale for an equivalence between therapies may be that many treatments are especially suited to some subjects and a poor choice for others. When data are collapsed into group outcome such individual differences may be cancelled out. Little research into the effect of subject variables has been reported. Wolpe's (1958) theory proposed that all phobias were acquired in the same way and should require the same treatment. One subject variable, the ability to achieve vivid imagery, did derive logically from Wolpe's original theory. After reviewing the literature on imagery, McLemore (1976) concluded that imagery was not useful in predicting outcome. Hiscock (1978) came to a similar conclusion on the basis of his review of the literature.

A small number of studies supported the predictive utility of another variable derived from a learning theory model (Clark, 1963; Gelder, Marks, Wolf & Clark, 1967; Lang & Lazovik, 1963; Lazarus, 1963; Marks & Gelder, 1965; Wolpe, 1964). Their results indicated that desensitization was more successful or at least faster with monosymptomatic phobics. This conclusion was supported by the work of Rudestam and Bedrosian (1977) who observed that desensitization produced greater self-report, galvanic skin response and heart rate change for specific phobics than for social
phobics. While the research specifically hypothesizing subject variables is limited, a few studies have examined the data for such effect after the fact or as a minor part of the design. For example, when comparing desensitization and hypnosis, Melnick & Russell (1974) found that initial level of test anxiety did not predict outcome for that disorder. Sullivan and Denney (1977) also observed that initial phobic level was unrelated to outcome.

Meichenbaum et al. (1971) compared desensitization and an "insight" therapy with speech phobics. Unlike an earlier, similar study conducted by Paul (1966), "insight" therapy was not a relatively unspecified operation performed by nonbehaviorally oriented therapists, but a modification of rational-emotive therapy as formulated by Ellis (1963). Meichenbaum et al. selected subjects from undergraduate volunteers and assigned them to treatment groups matched only on sex and extent of speech anxiety as measured by the Paul (1966) Behavior Checklist. Each of the therapists administered all four treatments to four groups of subjects: desensitization, rational-emotive therapy, a combination of both therapies, and attention-placebo. The study also included a waiting-list control.

The results of Meichenbaum et al. indicated that desensitization and rational-emotive therapy led to significantly greater improvement than the other three treatments, but that they were not significantly different from each other. This
pattern held for results on the Behavior Checklist and the Adjective Checklist for Anxiety (Zuckerman, 1960). Of primary interest to the present study, a post hoc analysis found a treatment X type of patient interaction. Subjects within each treatment group were divided by a median split on their pretreatment scores on the Social Avoidance and Distress Scale from the Social Anxiety Scale (Watson & Freund, 1969). The Social Avoidance and Distress Scale measures the generality of interpersonal anxiety and leads to the inference that low scorers suffer from a circumscribed public speaking anxiety. Low scorers in the desensitization group benefited significantly more than high scorers on two measures. In contrast, high scorers in the rational-emotive therapy and the combined group benefited significantly more than low scorers on four measures. Meichenbaum et al. concluded that rational-emotive therapy "differentially benefits clients with high, but not low social distress," while desensitization "works well with clients low, but not high in general social distress" (p. 419). Germer (1975) obtained results supporting the idea that desensitization is more effective with those low in social anxiety.

In a similar study Di Loreto (1971) found no differences in the reduction of interpersonal anxiety between desensitization and rational-emotive therapy. Interpersonal anxiety was measured by ratings of overt indices of anxiety and by self-report measures, the Interpersonal Anxiety Scales
(Di Loreto, 1970) and the S-R Inventory of Anxiousness, Interpersonal Subsection (Endler, Hunt, & Rosenstein, 1962). Di Loreto found no interaction between the treatments and extroversion-introversion as measured by the Myers-Briggs Type Indicator. Using the Eysenck Personality Inventory, Hallam (1976) obtained the same results. Sloane et al. (1975) also found no interaction of extroversion-introversion, as measured by the Eysenck Personality Inventory, and the MMPI Social Introversion Scale, and the effect of brief psychoanalytic therapy and behavior therapy. Sloane et al. did note a tendency for behavior therapy to be less successful with introverts while Di Loreto obtained a parallel tendency in regard to rational-emotive therapy and extroverts. The results of Sloane et al. also suggested that patients scoring high on the MMPI Hysteria and Psychopathic Deviate Scales did significantly less well in psychotherapy than did low scoring patients. In contrast, behavior therapy patients high on Hysteria and Mania improved more than those who scored low. Sloane et al. interpreted their results as indicating that patients who act out their problems are more amenable to behavior therapy while those who are uncomfortable are helped more with psychotherapy.

**Prediction Through Personality Measurement**

It would seem reasonable to examine therapies to generate hypotheses about the types of people for whom they would be most effective. According to desensitization
theory, a patient would attempt to avoid physical contact with as well as thoughts of certain stimuli which automatically arouse anxiety. Rational-emotive therapy, on the other hand, states that the patient generates his own anxiety by the self-defeating things he says to himself within certain situations (Ellis, 1971). One conceptual classification which roughly fits these descriptions is the Byrne (1961) repression-sensitization theory. According to Byrne, repressors are people who make excessive use of such defense mechanisms as avoidance, denial, and repression. It would seem that desensitization would be most beneficial to such people because it would encourage them to think about and approach the phobic stimuli. They would be unlikely, in their natural adjustive or defensive styles, to make the types of self-defeating statements addressed by rational-emotive therapy. Hence, that therapy should not be particularly natural to them. Also, the desensitization rationale places no burden of responsibility for the disorder on the phobic. The suggestion by rational-emotive therapy that a person generates his own anxiety could lead to avoidance, i.e., not paying attention or dropping out of therapy, for those who tend to repress.

According to Byrne's theory, sensitizers would be more likely to make negative self references. They would be unlikely to reject the suggestion, required by rational-emotive therapy, that they generate their own anxiety. They would
tend to place blame on themselves even without that impetus. Surely, desensitization would be more credible to repressors and rational-emotive therapy to sensitizers. The importance of credibility to outcome was documented by Kazdin and Wilcoxin (1976). In their review they reported outcomes equal to or superior to those of desensitization were attained with pseudotherapies which generate patient conviction of their helpfulness.

Actuarial research (Lachar, 1974), correlations (Byrne, 1964; Lester, 1976), and tests measuring personality characteristics agree that more socially anxious and introverted people are more likely to use sensitizing defenses of rumination and intellectualizing. Alternately, more extroverted people are more likely to use repression, denial, and avoidance. The MMPI scales which discriminated improvement in the Sloan et al. (1975) study utilized the same items as the Repression-Sensitization Scale of Byrne, Barry, and Nelson (1963). That is, items of the Repression-Sensitization Scale and the significant MMPI scales overlap. It is reasonable to assume they measure similar behaviors. However, the concept of repression-sensitization is one which makes for better theoretical understanding of the data than differences on scales unanchored in theory.

Repression and sensitization have been concepts utilized in interpreting many MMPI scales (Byrne, 1964). Byrne (1961) and Byrne, et al. (1963) produced their own scale by
revising the scoring of a scale by Altrocchi, Parsons, and Dickoff (1960). The scale uses MMPI Depression, Psychasthenia, and Welsh Anxiety items for a measure of sensitization and L, K, and Hy Denial items for measuring repression. Byrne (1961) tightened the measure by scoring overlapping items only once and by removing all inconsistently scored items. The original 156 items (Byrne, 1961; Byrne et al., 1963) were reduced to 127 by internal-consistency item analysis. A corrected split-half reliability of .94 and a 3-month test-retest reliability of .82 were found for the revised scale. Byrne (1961) defined sensitizers as those persons scoring in the upper 27% of the normal distribution while repressors were defined as those in the lower 27%. Subsequent studies have used a diversity of cut-offs for classifying repressors, sensitizers and intermediates (Chabot, 1973).

Repression-sensitization research has been criticized for almost exclusive restriction of samples to students in introductory psychology classes, use of different methods of administering the test, ignoring possible sex differences and, ignoring the responses of the "intermediates" or those who score around the mean (Chabot, 1973). The original research reviewed by Byrne (1961, 1964) to support the validity of the scale poses another difficulty. Much of this research was done prior to construction of the Repression-Sensitization Scale and it used similar scales designed to
measure similar concepts. Those issues in repression-sensitization research most related to present usage are discussed here.

In his review of the literature, Byrne (1964) concluded that studies generally supported the notion that repressors avoid, repress or deny stimuli that were threatening to their self-esteem while sensitizers tend to approach such stimuli. For example, when Gosset (1964) induced failure by false norms in a memory task, he found that sensitizers recalled significantly more parts of a memory task. While McReynolds and Ullman (1964) found no difference between sensitizers and repressors in the recall of pleasant, unpleasant and neutral words, Tempone (1962) found that repressors required greater time to recognize words exposed tachistoscopically than sensitizers when the words had been previously introduced in a task including induced failure. In an experiment by Ullman, Weiss, and Krasner (1963), subjects received a desensitization-like conditioning treatment to threatening words. Ullman et al. found that after conditioning, repressors produced less difference between responses to threatening and neutral words than repressors in the control condition.

More recent research has produced results which do not consistently support Byrne's theory. When Haney (1974) had subjects free associate to "threatening" and "nonthreatening" words, sensitizers did not produce significantly more sexual content or longer response periods. Similarly, repressors
and sensitizers did not differ in anxiety, measured projectively, after receiving a message designed to arouse thoughts about their own death (Schulman, 1976). Other studies involving verbally induced threat did support Byrne's conclusions. Loane (1976) found that repressors reported themselves avoiding personal censure and being anxious less than sensitizers. In the Loane study, however, repressors avoided personal censure more than sensitizers on a behavioral test. Baldwin and Cabianca (1972) gave self-discrepant information, i.e., low maturity ratings on a psychological test, and followed this with brief counseling sessions. Their results suggested that repressors used projection (i.e., lowering the maturity ratings of their counselors) and sensitizers changed their self-perception.

In studies using films, experimental results have also been equivocal. Lazarus and Alfert (1964) concluded that repressors were less likely than sensitizers to report anxiety with a stress film but more likely to increase in physiological arousal. In a similar study with psychiatric patients, Davidson and Watkins (1971) observed a similar but nonsignificant trend on a measure of skin conductance and the Adjective Checklist for Anxiety. Wood (1977) used a film depicting an industrial accident as the stressor. In this study, sensitizers did not report any more anxiety than repressors, but did report more hostility. It could be argued that this film and Schulman's (1976) message designed to
arouse fears of one's own death did not necessarily threaten self-esteem.

Quite a number of studies have utilized electric shock as a stressor. Merbaum and Badia (1967) found that with males, repressors defined higher shock levels as tolerable than sensitizers. Hare (1966) found that repressors spent less time thinking about impending shock than sensitizers. Similarly, repressors have been observed to give lower estimates of shock intensity than sensitizers (Barton & Buckhout, 1969). These studies suggest that repressors deny threat. In a study by Rothbart and Mellinger (1972), repressors engaged in more behavior to avoid shock and were more successful in avoidance. When anticipating shock, sensitizers have been observed to have higher heart rates and higher self-reported anxiety than repressors (Snortum & Wilding, 1971). On the other hand, Scarpetti (1973) observed a higher skin conductance reaction to threat of shock in repressors, while sensitizers reported greater state anxiety. While results with physiological measures have been inconsistent, self-report measures have supported the idea that sensitizers tend to exaggerate potential threat by anxious worrying while repressors deny the threat.

Recent studies have investigated the interaction of repression-sensitization and sex of subject (Chabot, 1973). As examples, Gailbraith and Wynkoop (1976) found a nonsignificant difference between male sensitizers and repressors
latency of free association to sexual and asexual words. House (1975) found no difference in recall of sexual and aggressive statements between sensitizers and repressors. When he introduced a condition to increase the social desirability of recall, male repressors recalled significantly more such words than male or female sensitizers. Female repressors, on the other hand, recalled fewer words than any other group. In another study, (Burns & Tyler, 1976) female repressors rated sexual cartoons as less humorous than asexual cartoons. It should be demonstrated that sexual stimuli are of equal threat to males and females before the results of these studies could be used as support for the lack of validity of the Repression-Sensitization Scale.

In a series of studies by Parsons, Fulgenzi, and Edelberg (1969), repressors were judged to be more aggressive than sensitizers in group construction of a story from a TAT card. Scarpetti (1974) found that male sensitizers were more likely than male repressors to return a shock to a known experimenter, a difference that disappeared when the experimenter had not been introduced. Scarpetti felt these results suggested repressors were more passive-aggressive than sensitizers, an interpretation consistent with Byrne. This series of studies also suggested a strong relationship between repression-sensitization and social desirability. Methodological problems, conflict over what
causes a threat to self-esteem, and contradictory results make any research difficult to interpret. There are enough positive results, however, to suggest the scale has some value in predicting avoidance, repression, and denial.

There is also some support for the prediction that sensitizers would do better than repressors with rational-emotive therapy. Byrne (1964) concluded that sensitizers were more likely than repressors to describe themselves in negative terms. The results of two studies reviewed here (Loane, 1976; Baldwin & Cabianca, 1972) suggested that sensitizers were more tolerant than repressors of the idea that some of their behavior might not be that effective. Self-disclosure is a behavioral style more essential to rational-emotive therapy than desensitization. After reviewing several recent studies, Chellune (1977) concluded that sensitizers were more likely to engage in self-disclosure. To complicate matters further, the results of the Chellune study suggested an interaction between repression-sensitization, self-disclosure, sex of subject, and sex of interviewer.

Researchers interested in the Repression-Sensitization Scale have been concerned with two additional questions. The first question is whether the scale measures the same underlying dimension as either social desirability scales or the Taylor Manifest Anxiety Scale. In general, correlations among the three have been found to be high (Abbot,
1972; Kilpatrick, Cauthen, & Roitzsch, 1971). On the other hand, Handal (1973) revised the Repression-Sensitization Scale to control for social desirability and acquiescence and found the new scale correlated .82 with the old. Farber (1964) has suggested that different names for the scales are justified on the grounds that they have originated in different theoretical systems and lead to different kinds of research.

The relationship between the Repression-Sensitization Scale and psychopathology has also been the focus of considerable research. From Byrne's conception of repression-sensitization, extreme scores in either direction should be indicative of pathology. The results of several studies (Fredericks, 1973; Foulds & Wareheim, 1971; Millimet, 1972; Ullman, 1962) suggested that pathology increases only with increases in sensitization. This linear relationship between repression-sensitization and pathology was found where the indicator of adjustment was a self-report measure. Other studies suggested that, although not reported, anxiety was present in repressors. Lomont (1965) found that repressors showed greater signs of disturbance on a word association test than did sensitizers. Weinstein, Averill, Opton, and Lazarus (1968) observed greater physiological than self-report reaction to stress among repressors. Scarpetti (1973) also found that repressors, who reported less anxiety than
sensitizers, produced greater skin conductance changes to the threat of shock.

Compared with the general population, psychiatric patients have tended to have higher sensitizer scores on the Repression-Sensitization Scale (Feder, 1967; Ullman, 1962) as have patients at mental health centers (Tempone & Lamb, 1967). With volunteer counselees, Pengel, Pengel, and Wicas (1971) found comparable numbers of presenting problems by repressors and sensitizers. Pellegrine (1971) found the majority of a counseling center population were sensitizers; however, repressors who went into therapy were perceived as needing more experienced therapists. Mayo, Walton, and Littman (1971) also found that inpatient sensitizers scored higher than repressors on self-report measures of pathology. Neither duration of stay nor psychiatrist ratings of condition at discharge differentiated the two groups in terms of severity.

Determination of Therapeutic Effectiveness

In any study concerned with the reduction of fears or anxiety one has an abundance of outcome measures from which to choose. One of the most commonly used measures of the effect of desensitization has been a behavioral approach test. Approaching a phobic stimulus has been considered direct evidence that fear has decreased. Nevertheless, Bernstein and Neitsel (1973) and Miller and Bernstein (1972) have established by manipulation of demand variables that
"false phobics" may be selected even with a behavioral approach test. In one study where the approach measure was used with public speaking phobics, Horowitz (1977) found that approach to a speaking location was not a continuous but a dichotomous variable. Horowitz assumed both that subjects would approach varying distances toward the room where they might speak and that they would do so for varying lengths of time. He found that subjects either did not begin the approach or they entered and spoke for the entire time required. The only continuous measure available for analysis in that study was reading rate, previously found to present difficulties in interpretation (Pope, Siegman, & Blass, 1970).

Self-report measures, in contrast to approach tests, have been frequently employed as dependent variables in studies of speech anxiety. Examples of such tests are the Personal Report of Confidence as a Speaker (Paul, 1966), the Fear Survey Schedule (Wolpe & Lang, 1964), and fear rating scales based on Walk's (1956) fear thermometer. In general, correlations between attitudes and behavior have been low (Wicker, 1969) and, specifically, correlations between fear surveys and approach tests have not been exceptional (Fazio, 1969; Lang, 1968).

Two studies, found that physiological manifestations did not decrease when avoidance behavior did (Gillan & Rachman, 1974; Leitenberg, Agras, Butz, & Wincze, 1973). Further, Paul (1966) found that two such indices did not
sufficiently correlate with one another, nor did they demonstrate the same changes found with self-report measures or overt manifestations of anxiety.

Meichenbaum et al. used the Behavior Checklist as a measure of anxiety manifested during speaking. The checklist consists of 20 observable behaviors which were recorded by trained observers. Various investigators (Meichenbaum et al., 1971; Paul, 1966; Trexler & Karst, 1972) found sufficient interjudge reliability with this instrument. Since Paul originally derived the checklist from a list developed by Clevenger and King (1961), only a few studies have sought to support the validity of the checklist. Although Paul (1966) found a significant correlation between the checklist and the Personal Report of Confidence as a Speaker, Trexler and Karst (1973) found a nonsignificant negative relationship between the two measures. Meichenbaum et al. provided some evidence of validity of the checklist by comparing subjects who reported both no fear of speaking and no fear of rejection with subjects who volunteered for treatment of speech anxiety. Speech-anxious volunteers scored significantly higher on the checklist than did those reporting no fear. Additional validation was provided by Trexler and Karst who had their checklist raters make global estimates of anxiety. Their estimates correlated .47 with the checklist. Hemme and Boor (1976) found that the Personal Report of Confidence
as a speaker, a self-report measure, was effected by expectancy manipulations prior to therapy. The checklist was not.

Meichenbaum et al. included three additional indices of overt anxiety obtained from taped speeches. These were word count, duration of silence, and number of "ah" statements. Meichenbaum et al. found that "ah" statements did not differentiate speech-anxious subjects from those who reported no speech anxiety. This provided further support for similar findings by Kasl and Mahl (1965). Similarly, Meichenbaum et al. had difficulties interpreting results on the duration of silence. High speech-anxious subjects had significantly less silence at pretest than did low speech-anxious subjects. The effect of treatment was to reduce silence of the high speech-anxious subjects even more. Mahl (1956, 1961) also found conflicting results in regard to the duration of silences. The correlation of word count with anxiety has been supported by several studies (Pope & Siegman, 1965; Pope, Siegman, & Blass, 1970; Siegman & Pope, 1965). Meichenbaum et al., however, found that word count increased as a result of all three treatments, a finding inconsistent with previous results.

Another measure, the non-ah speech disturbance ratio by Mahl (1956) has had considerable research in support of its validity. The non-ah ratio correlated with galvanic-skin-response dips (Panel & Martin, 1959), anxious topics during interviewing (Kasl & Mahl, 1965) and trait anxiety
as well as naive ratings of anxiety (Hartwig, 1974). Hartwig noted, however, that the determination of the non-ah ratio was both extremely time consuming and cumbersome. He found that three categories of speech disturbance either did not correlate satisfactorily with overall speech disturbance or were insufficiently reliable. The remaining categories of the non-ah ratio appear to overlap the category of "speech blocks or stammers" on the Behavior Checklist.

The purpose of the present study was to find a measure that would predict the degree of improvement patients would derive from desensitization and rational-emotive therapy. It was expected that repressors would improve more with desensitization than sensitizers. Sensitizers, on the other hand, would derive greater benefit from rational-emotive therapy than repressors. Desensitization focuses on the predominant symptoms of repressors and its rationale would likely be more credible to repressors than sensitizers. Because rational-emotive therapy addresses one of the primary symptoms of sensitizers, they would likely find it more credible than repressors. It was also anticipated that sensitizers would be able to disclose more and would be less threatened than repressors in rational-emotive therapy.

In order to provide comparability with past research, speech anxiety was chosen as the disorder for study. Speech-anxious repressors and sensitizers were to receive either desensitization or rational-emotive therapy. Improvement
was to be measured by the Behavior Checklist. The checklist would allow for comparability with past research and it would seem to lead to fewer problems in interpretation than other available measures.

**Hypotheses**

The following hypotheses were investigated for the present study.

1. Systematic desensitization will be more effective for speech-anxious subjects who are repressors than for such subjects who are sensitizers.

2. Rational-emotive therapy will be more effective for speech-anxious subjects who are sensitizers than for such subjects who are repressors.

3. Systematic desensitization will be more effective than rational-emotive therapy for subjects who are repressors.

4. Rational-emotive therapy will be more effective than systematic desensitization for subjects who are sensitizers.

**METHOD**

**Subjects**

The subjects were 24 undergraduate students in a small southwestern university. Their mean age was 21.2 and the mean number of hours of college credit acquired was 26.9. Nine were males and 15 were females. In the fall semester 12 subjects participated, while a second 12 participated
when the study was repeated in the spring. Fourteen of the subjects were enrolled in speech classes; 10 were not.

Instruments

The Revised Repression-Sensitization Scale (Byrne et al., 1963) is a 182-item true and false questionnaire. High scores indicate excessive use of sensitizing defenses while low scores indicate use of repressing defenses.

The Behavior Checklist (Paul, 1966) measures overt discomfort while speaking. In this test, four trained observers record 20 observable manifestations of anxiety as either present or absent during the 8 successive 30-second intervals of a 4-minute speech.

Observers

Observers were trained to score the checklist in 3 2-hour sessions using 14 volunteer speakers. Their competence to judge was determined by multiple correlation. Correlations among the four judges used for this study ranged from .96 to .82 with an average of .91. The judges consisted of two occupational therapists, one psychology technician with a bachelor's degree in social work, and one graduate student in psychology.

Procedure

Screening and pretest. The experimenter visited a number of classes within the college of liberal arts and asked for volunteers who had difficulty in public speaking. They were asked to participate in research comparing several
commonly used therapies. They were told that they would be treated by a PhD clinical psychologist who had 3 years experience. After the experimenter described the study to prospective volunteers, she read them a brief statement of their rights as experimental subjects (Appendix A). Students who were not interested in participating were dismissed from the classroom. Each volunteer who remained was given an informed consent statement for his/her signature. The volunteers also supplied their names, phone numbers, ages, and numbers of hours of university credit previously acquired. During the remaining class time, volunteers took the Repression-Sensitization Scale in the form of a health and opinion survey. They were told that neither selection to participate nor nonselection would reflect on their "normality." The experimenter indicated that if they were eligible to participate they would be contacted by telephone within the next 2 weeks.

Of the 116 students who took the Repression-Sensitization Scale, 48 who scored above 52 were selected as sensitizers, while 45 who scored below 42 were selected as repressors. From these, those with the most extreme scores were contacted first for their first appointment. This process was continued until the desired numbers for the pretest were obtained. For sensitizers, 35 calls were made resulting in 21 sensitizers doing the pretest speech. For repressors, the numbers were
45 and 22, respectively. No subject reported withdrawing as a result of treatment at this point.

The pretest, using the Behavior Checklist, was conducted from 1 to 2 weeks following assessment on the Repression-Sensitization Scale. Volunteers were greeted individually by the experimenter who explained that each was to make a 4-minute speech on "What I expect to get out of college life." The volunteer was left alone for 5 minutes to prepare the speech. Each was then directed to a classroom where the four judges trained on the checklist sat in the front row of seats. The judges were instructed to give no feedback to the volunteers by smiling, talking, or engaging in excessive eye contact. The volunteer stood behind a small podium, a board lying flat on a thin pole. The podium was designed so that the judges' view would not be impeded. The experimenter sat at the corner of the room to signal time for the judges and dismiss speakers who appeared to be too uncomfortable. Speakers were dismissed when they told the experimenter they could not continue or if they paused for longer than 1 minute. The experimenter accompanied each subject from the room and ascertained that subjects were not left anxious by the assessment procedure. Subjects were told that their cooperation was appreciated and that they would be contacted by phone about the time of the next session.

Following the pretest, scores for subjects not speaking the entire 4 minutes were determined. For those who spoke
more than 2 minutes this was done by prorating. Those who spoke less than 2 minutes were assigned scores one point higher than the highest score of a subject speaking more than 2 minutes. All subjects spoke, but only five completed the 4-minute talk. No subject met the criteria for elimination on the checklist: evidencing ability to speak for 4 minutes and obtaining a score below 137.

**Group formation.** Following the pretest, subjects were assigned to groups by rank-ordering on their repression-sensitization scores. Order of ties was determined by tossing a coin. The rank-ordered scores were then alternately divided into two groups. A coin was tossed to determine which group would receive which treatment. This method was used to obtain relatively equal repression-sensitization levels in each group for the purpose of discussion of hypothesized interactions. This meant that for each semester there were two groups, each composed of repressors and sensitizers. The groups were: fall-desensitization (for repressors, n = 4, for sensitizers, n = 6), fall-rational-emotive (n's = 5 and 5), spring-desensitization (n's = 6 and 5, respectively), and spring-rational-emotive (n's = 6 and 5, respectively). Twelve subjects withdrew between the pretest and therapy deflating numbers in the groups to 3 and 5, 3 and 5, 4 and 3, and 5 and 2, respectively. Again, no subject reported withdrawing for reasons of treatment.
**Treatment.** Starting within 1 week of the pretest, the psychologist administered 8 1-hour sessions of group therapy to the remaining subjects. The therapist was blind as to the subjects' repression-sensitization status. The therapist followed a 22-page manual to administer the fall- and spring-rational-emotive groups and a 19-page manual for the fall- and spring-desensitization groups (sources where the manuals may be obtained are given in Appendix B). The manuals included a detailed description of the procedures as well as instructions as to what session to introduce them. The basic procedures used for the fall- and spring-desensitization groups were: treatment rationale, relaxation training, hierarchy construction, imagery training and desensitization. The actual hierarchies constructed are shown in Appendix C. For the fall- and spring-rational-emotive groups, basic procedures included group discussion of therapy rationale, self-defeating statements, the range of situations where self-defeating statements were used, the self-fulfilling nature of such statements, and the use of incompatible self-verbalizations.

All therapy sessions were tape recorded and discussed with the experimenter to insure adherence to the manuals. At each treatment session new material from the previous session was repeated so subjects who missed a session could be brought up to date. Subjects who missed two consecutive sessions were given a make-up session, subjects who missed
three consecutive sessions were considered to be dropouts. The therapist called all dropouts, obtained their reasons for missing, and ended their participation. One repressor and one sensitizer dropped out of the fall- and spring-desensitization groups. Two repressors, and two sensitizers dropped out of the fall- and spring-rational emotive groups. Three left on the basis of time conflict and three reported insufficient time for the project.

**Posttest.** The posttest took place 1 week after treatment was completed. It was conducted as the pretest except the subjects were each given "What I expect to be doing in the future" as the speech topic.

**Results**

**Combination of the Two Repeated Studies**

Subjects in the fall did not differ significantly from those assessed in the spring in terms of their repression-sensitization means, $t (22) = 1.34, p = .19$. Sex of subjects was also not significantly different at the two assessment times. The ages of subjects in each half of the study were also examined. The mean age was 19.83 in the fall and 22.5 in the spring. This difference was not significant, $t (22) = 1.47, p = .16$. Similar nonsignificant results were found for number of hours of college credit accumulated prior to the semester in which subjects participated. As expected, the mean number of hours in the spring (33.58) was greater, but not significantly so, than the mean number of hours in
the fall (20.25), $t(22) = 1.024$, $p = .32$. Since subjects from the two parts of the study did not differ significantly on those initial variables which may have affected results, the data from the two semesters have been combined for all further analyses.

**Combination of Speech and Nonspeech Students**

Pretest ($M = 197.81$, $SD = 38.93$) and posttest checklist scores ($M = 185.11$, $SD = 32.21$) of the 14 students enrolled in speech classes were compared with pretest ($M = 214.69$, $SD = 25.11$) and posttest scores ($M = 208.17$, $SD = 20.32$) of 10 nonspeech students. An analysis of covariance for unequal cell frequencies (ANACOVA) was computed to test for difference in change in checklist scores. Table 1 presents a summary of the results of this analysis. Because the $F$ ratio obtained was not statistically significant, data from speech and nonspeech students have been combined for all further comparisons.

**Table 1**

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>DF</th>
<th>MS</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>18612.98</td>
<td>22</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>16323.21</td>
<td>21</td>
<td>777.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatments</td>
<td>2289.77</td>
<td>1</td>
<td>2289.77</td>
<td>2.95</td>
<td>&gt;.05</td>
</tr>
</tbody>
</table>
Reliability of Behavior Checklist Judgements

Interjudge reliability was determined by multiple correlation. Raw scores, prior to prorating or substitution as described previously, were used in the analysis. Scores from volunteers who withdrew after the pretest, as well as pretest and posttest scores of the final sample were included. The average interjudge reliability was .93. The correlations among the four judges ranged from .92 to .94. This degree of agreement was considered as evidencing acceptable reliability for use in the study.

Examination of Hypothesized Differences

The hypotheses of this study predicted differential improvement in speaking behavior between sensitizers and repressors depending on whether they received desensitization or rational-emotive therapy. The hypotheses were not confirmed. Summary findings of the responses of repressors and sensitizers to treatment are reported in Table 2. Complete data for the 24 individuals who finished treatment may be seen in Appendix D.

To test the hypotheses, checklist scores were analysed in a 2 X 2 unweighted means analysis of covariance and no significant F ratios were obtained. No significant interactions as well as no significant main effects for treatment or personality were found. Table 3 presents a summary of this analysis.
Table 2  
Speaking Behavior of Repressors and Sensitizers

<table>
<thead>
<tr>
<th>R-S</th>
<th>Therapy</th>
<th>n</th>
<th>R-S Score</th>
<th>BCL Pretest Score</th>
<th>BCL Posttest Score</th>
<th>BCL Changes Score</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitizer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>66.70</td>
<td>208.90</td>
<td>196.70</td>
<td>-12.10</td>
<td>0.00</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td>7</td>
<td>6.85</td>
<td>34.35</td>
<td>32.26</td>
<td>1.72</td>
<td></td>
</tr>
<tr>
<td>RET</td>
<td></td>
<td>5</td>
<td>7.82</td>
<td>55.20</td>
<td>32.61</td>
<td>2.61</td>
<td></td>
</tr>
<tr>
<td>Repressor</td>
<td></td>
<td></td>
<td>31.20</td>
<td>198.10</td>
<td>196.20</td>
<td>-2.00</td>
<td>-0.80</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td>6</td>
<td>5.27</td>
<td>32.32</td>
<td>27.60</td>
<td>1.84</td>
<td></td>
</tr>
<tr>
<td>RET</td>
<td></td>
<td>6</td>
<td>32.00</td>
<td>211.80</td>
<td>199.10</td>
<td>-12.70</td>
<td>+1.00</td>
</tr>
<tr>
<td>Combined</td>
<td></td>
<td></td>
<td>50.32</td>
<td>203.96</td>
<td>196.47</td>
<td>-7.49</td>
<td>-0.37</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td>13</td>
<td>19.35</td>
<td>32.49</td>
<td>28.95</td>
<td>1.75</td>
<td></td>
</tr>
<tr>
<td>RET</td>
<td></td>
<td>11</td>
<td>51.00</td>
<td>205.89</td>
<td>192.60</td>
<td>-13.29</td>
<td>+1.09</td>
</tr>
</tbody>
</table>

Note. SD = Systematic desensitization; RET = Rational-emotive therapy; R-S = Repression-Sensitization; BCL = Behavior Checklist; Time = Number of 30-second intervals completed.
Table 3

ANACOVA Comparing Repressors and Sensitizers
On Improvement in Checklist Scores with Treatment

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment (A)</td>
<td>138.15</td>
<td>1</td>
<td>138.15</td>
<td>.14*</td>
</tr>
<tr>
<td>Repression-</td>
<td>257.29</td>
<td>1</td>
<td>257.29</td>
<td>.27*</td>
</tr>
<tr>
<td>Sensitization (B)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A X B</td>
<td>133.69</td>
<td>1</td>
<td>133.69</td>
<td>.14*</td>
</tr>
<tr>
<td>Error</td>
<td>18,269.48</td>
<td>19</td>
<td>961.55</td>
<td></td>
</tr>
</tbody>
</table>

* p > .05

Differential improvement was also examined in terms of time spent in speaking. A 2 X 2 unweighted means analysis of covariance was computed on the number of 30-second intervals completed on the checklist. No significant F ratios were obtained. Thus, neither treatment, personality, nor their interaction produced differential effects. Table 4 presents the relevant aspects of this analysis.

The four hypotheses are also not supported by analysis of dropout rates. No interaction between treatment and subject type can be inferred from equal numbers of sensitizers and repressors dropping out of each treatment condition, as was the case.
Table 4

ANACOVA Comparing Repressors and Sensitizers on Improvement in Speaking Times with Treatment

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment (A)</td>
<td>2.71</td>
<td>1</td>
<td>2.71</td>
<td>.547*</td>
</tr>
<tr>
<td>Repression-</td>
<td>.01</td>
<td>1</td>
<td>.01</td>
<td>.002*</td>
</tr>
<tr>
<td>Sensitization (B)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A X B</td>
<td>1.34</td>
<td>1</td>
<td>1.34</td>
<td>.271*</td>
</tr>
<tr>
<td>Error</td>
<td>94.03</td>
<td>19</td>
<td>4.95</td>
<td></td>
</tr>
</tbody>
</table>

* p > .05

Since the personality of the patient had no significant effect, the data were re-examined to compare outcome from each of the two major treatments utilized. The analysis of the checklist and time scores yielded no significant main effects for treatment. It would seem that desensitization and rational-emotive therapy were undifferentiable in terms of outcome. Although more subjects dropped out of rational-emotive therapy than desensitization, this difference was not significant as analyzed by the Fisher exact probability test. The data for the analysis comparing dropouts in the two treatments are presented in Table 5.
Table 5

The Relationship of Dropouts to Treatment

<table>
<thead>
<tr>
<th></th>
<th>Dropouts</th>
<th>Remainers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>RET</td>
<td>26 (4)</td>
<td>74 (11)</td>
<td>15</td>
</tr>
<tr>
<td>SD</td>
<td>13 (2)</td>
<td>87 (13)</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>20 (6)</td>
<td>80 (24)</td>
<td>30</td>
</tr>
</tbody>
</table>

\[ p = .65 \]

Checklist scores for the total sample, regardless of treatment, were analyzed to determine if any improvement from pretest to posttest was different from chance. The mean of 204.85 (SD = 34.28) on pretest was not significantly different from the mean of 194.72 (SD = 29.71) on posttest, \( t (23) = 1.26, p = .22 \), when examined by a two-tailed \( t \) test for correlated means. Time scores, analyzed with the same test, yielded similar results. The pretest mean of 4.7 (SD = 2.71) was not significantly different from the posttest mean of 5.0 (SD = 2.08), \( t (23) = .47, p = .32 \). No improvement from treatment could be established.

Comparisons Related to Repression-Sensitization

The mean repression-sensitization score of the 116 volunteers for this study, 49.27, was significantly higher than the mean of 42.44 obtained by Byrne et al. (1963) on their normal college population, \( t (1418) = 3.65, p = .001 \).
This suggests that either individuals at the repressor tail of the repression-sensitization continuum volunteer at much lower rates than individuals who score at the sensitizer end of the scale or that our university group was generally more sensitizing than was the Byrne et al. sample. Dropping out of therapy was not related to repression-sensitization score. Equal numbers of repressors and sensitizers began and dropped out of treatment. Furthermore, overall withdrawal from the study was also not related to subjects' repression-sensitization scores, as tested by the Fisher exact probability test. The results of this analysis may be seen in Table 6.

Table 6
Personality of Withdrawers

<table>
<thead>
<tr>
<th></th>
<th>Withdrawers</th>
<th>Remainers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%   (n)</td>
<td>%   (n)</td>
<td>(n)</td>
</tr>
<tr>
<td>Sensitizers</td>
<td>66 (23)</td>
<td>34 (12)</td>
<td>(35)</td>
</tr>
<tr>
<td>Repressors</td>
<td>73 (33)</td>
<td>27 (12)</td>
<td>(45)</td>
</tr>
<tr>
<td>Total</td>
<td>70 (56)</td>
<td>30 (24)</td>
<td>(80)</td>
</tr>
</tbody>
</table>

\( p = .47 \)

The mean repression-sensitization score of the 20 sensitizers who withdrew prior to starting therapy was 72.20 (SD = 9.55). This was not significantly different from the
mean of 68.67 ($SD = 7.43$) of the 15 sensitizers who began
treatment, $t(33) = 1.19$, $p = .24$. Similar results were
obtained for the 30 withdrawers and 15 subjects who scored
on the repressor end of the continuum, respectively ($M =
32.00$, $SD = 8.17$, $M = 31.73$, $SD = 5.71$), $t(43) = .11$, $p = .91$. Although the numbers were too few for statistical
comparisons, sensitizers who dropped out of therapy ($n = 3,
M = 64.67$, $SD = 4.51$) seem similar in repression-sensitization
standing to those who remained ($n = 3$, $M = 69.67$, $SD = 7.82$).
Repressors who dropped out ($n = 3$, $M = 32.33$, $SD = 6.51$)
also appear to be similar to those who remained ($n = 12$, $M =
31.58$, $SD = 5.81$).

Certain correlations were examined. The correlation
between the pretest and the posttest checklist scores was
.27. The correlation between the Repression-Sensitization
Scale and change scores was -.02. When the repression-
sensitization scores were converted to reflect their absolute
difference from the mean of Byrne et al. (1963), the obtained
correlation with change scores was .15. The Repression-
Sensitization Scale and pretest checklist scores correlated
.07. None of the above correlations were statistically
significant.

**Sex and Withdrawal from the Study**

Of the 80 volunteers contacted to take the pretest, 47
were females and 33 were males. Sex was not significantly
related to whether or not subjects withdrew from the study.
or continued. The results of a Fisher exact probability test may be seen in Table 7.

Table 7
Sex of Withdrawers and Remainers

<table>
<thead>
<tr>
<th></th>
<th>Withdrawers % (n)</th>
<th>Remainers % (n)</th>
<th>Total (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>73 (24)</td>
<td>27 (9)</td>
<td>33</td>
</tr>
<tr>
<td>Female</td>
<td>68 (32)</td>
<td>32 (15)</td>
<td>47</td>
</tr>
<tr>
<td>Total</td>
<td>70 (56)</td>
<td>30 (24)</td>
<td>80</td>
</tr>
</tbody>
</table>

$p = .81$

Sex was also not related to whether subjects withdrew prior to treatment or dropped out of treatment. Table 8 shows the results of this analysis.

Table 8
Sex of Pretreatment Withdrawers and Therapy Dropouts

<table>
<thead>
<tr>
<th></th>
<th>Withdrawers % (n)</th>
<th>Dropouts % (n)</th>
<th>Total (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>79 (19)</td>
<td>21 (5)</td>
<td>24</td>
</tr>
<tr>
<td>Female</td>
<td>97 (31)</td>
<td>3 (1)</td>
<td>32</td>
</tr>
<tr>
<td>Total</td>
<td>89 (50)</td>
<td>11 (6)</td>
<td>56</td>
</tr>
</tbody>
</table>

$p = .07$
Discussion

It was predicted that desensitization would be more effective for speech-anxious subjects who were repressors than for such subjects who were sensitizers. Conversely, rational-emotive therapy was predicted to be more effective for sensitizers than for repressors. The results showed that when improvement was defined by change on the Behavior Checklist the hypotheses were not confirmed. Similarly, when improvement was defined as increase in speaking time, again, the hypotheses were not supported. Furthermore, a comparison of dropouts, utilized as a measure of therapeutic effectiveness, indicated no differential response to treatment by sensitizers or repressors.

Not only were there no significant differential effects, neither therapy was superior to the other when compared on changes in checklist scores, speaking times, or dropout rates. Also, neither repressors nor sensitizers improved significantly more than the other when compared on these measures.

Contrary to all plans and expectations, it could not be established that any improvement had taken place. That is, when posttherapy scores for all subjects were compared to pretherapy scores, no significant changes in behavioral manifestations of anxiety or speaking time were observed. This indicates the therapies had no noticeable effect, positive or negative, on these speech-anxious subjects. Because
rational-emotive therapy and desensitization did not reduce speech anxiety, the hypothesized differential improvement could not readily have occurred. Thus, the idea that repression-sensitization moderates improvement in response to rational-emotive therapy and desensitization has not even been tested. However, the absence of improvement here conflicts with the generally accepted notion (Kazdin & Wilcoxin, 1976; Smith & Glass, 1977) that patients benefit from both rational-emotive therapy and desensitization. For this reason, this finding requires further exploration.

There are several potential explanations for the absence of improvement which was found here. It is possible that many disorders are helped by desensitization and rational-emotive therapy but that speech anxiety is occasionally resistant to treatment. Although the hypotheses raised here would be untested using this disorder, there could still be a relationship between repression-sensitization and outcome for other disorders.

The results of earlier research (Meichenbaum et al., 1971; Paul, 1966) indicated that both desensitization and rational-emotive therapy were effective in reducing behavioral manifestations of speech anxiety. It was on the basis of this early research, that the disorder was chosen for testing here. However, among more recent studies, decreases in speech anxiety in response to therapy have not consistently been observed. Weinberger and Englehart (1976) and Marshall, Presse, and
Andrews (1976) found that desensitization led to a decrease in self-reported anxiety, but not in behavioral manifestations of speech anxiety. Weissberg and Lamb (1977) found similar results at posttest, with a decrease in overt indicators of anxiety occurring later at followup. On the other hand, the results of other studies suggest that desensitization leads to a decrease in both indicators of speech anxiety (Hemme & Boor, 1976; Kirsch & Henry, 1977). The only study, other than this, which used speaking time as index of improvement, also found no significant change on that variable (Hemme & Boor, 1976). Results of these studies are somewhat contradictory, but, in general, they suggest that speech anxiety does not necessarily change in response to behavioral treatment. Given this hindsight and the fact that rational-emotive therapy and desensitization are generally considered to be effective, it seems that the wrong disorder was chosen for examination here.

The possibility arises that some subjects, characterized by some unknown variable, could have become worse canceling out the therapeutic benefit derived by others. If this were to happen one would expect to find greater variability among posttherapy scores than among pretherapy scores. For both speaking time and checklist scores variability decreased at posttest in this study. An interaction between an unknown variable and therapy outcome, then, does not explain the overall lack of change found.
There is a possibility that failure to find improvement may have been due to use of the Repression-Sensitization Scale. Subjects selected on the basis of extreme repression-sensitization scores may have been more pathological than subjects in previous studies and, thus, less likely to improve within the experimental time interval. Several researchers (Fredericks, 1973; Foulds & Wareheim, 1971; Millimet, 1972) have suggested that repression-sensitization scores are positively correlated with pathology. That is, the higher the score, or the greater the use of sensitizing defenses, the greater the pathology. If this were the case and if patients with greater pathology were more resistant to treatment, then sensitizers should have remained the same and repressors should have improved. But there was no difference in the improvement of repressors and sensitizers here. Therefore, patient pathology, defined as high scores on the Repression-Sensitization Scale, does not explain the overall absence of improvement.

Byrne (1964) suggests that repression-sensitization does not produce a straight line correlation with pathology. Instead, the farther his or her repression-sensitization score deviates from the mean, the more pathological the patient. For this definition of pathology, a negative correlation would be expected between repression-sensitization scores, converted to absolute deviation scores, and change scores on the checklist. This did not occur. The conclusion
is that, in general, pathology as measured by the Repression-Sensitization Scale is unrelated to improvement on the checklist.

Perhaps there was improvement in treatment, but the measures used did not reflect it. The subjective impression of the experimenter and the raters was that subjects did not decrease behavioral manifestations of anxiety as a result of the therapies. In general, subjects that seemed to be highly anxious while speaking attained high checklist scores. Subjects that seemed less anxious achieved lower checklist scores. It is likely, then, that the checklist measurement was reflecting a real absence of change.

Most subjects in this study spontaneously reported that they felt better as a result of therapy. This is not considered to be sufficient evidence that patients improved. Self-report measures do not correlate with behavioral measures (Fazio, 1969; Lang, 1968; Wicker, 1969) and they are much more heavily influenced by expectancy than behavioral measures (Hemme & Boor, 1976; Kirsch & Henry, 1977). Furthermore, if a patient's performance as a speaker does not change, his greater willingness to participate in speech may lead to an unpleasant experience, for example, failing in a speech class. With such a failure, subjective feelings of anxiety are likely to return. Perhaps behavior as well as attitude should change before a therapy is considered to be helpful for a behaviorally evident disorder.
Several possible explanations for the absence of overall improvement have been explored. That severe speech anxiety is strongly resistant to treatment seems to be the most reasonable explanation. Perhaps a relationship between repression-sensitization and outcome could be established if another disorder were studied. The possibility has not really been tested here.

Two additional points, unrelated to the hypotheses, pertain to the validity of the Repression-Sensitization Scale. This sample had a significantly higher mean repression-sensitization score than the group used by Byrne et al. (1963) to establish norms for the test. The latter was a captive audience of students enrolled in courses at the University of Texas. The present sample was composed entirely of volunteers for treatment.

The most likely explanation for the difference in means is that repressors volunteered at lower rates than sensitizers. This suggests that repressors more than sensitizers deny the presence of speech anxiety and avoid potential anxiety by avoiding therapy. This is consistent with Byrne's definition of repression-sensitization. One could argue that repressors volunteered at lower rates only because they had less speaking difficulty than sensitizers. However, for this sample, no consistant relationship between repression-sensitization and manifest difficulty with speaking was found. Byrne's (1964) theory would also suggest that
repressors would be more likely than sensitizers to avoid such potentially anxiety-arousing situations as the pre- and posttest speeches. Withdrawal rates prior to therapy and dropout rates during therapy do not suggest that repressors avoided more at these points during this study. Thus, the behavior of repressors and sensitizers was as predicted by Byrne when the decision to volunteer was considered a sign of approach to potential anxiety. When withdrawal rates were utilized as a measure of avoidance, Byrne's theory was not supported.

At this point, it is appropriate to offer suggestions to future researchers in the area of this study. Those who choose to use the Behavior Checklist should be aware of potential problems with its use. While the interjudge reliability of the checklist has been repeatedly measured and found acceptable, there is little information on test-retest reliability. In one study (Trexler & Karst, 1972), test-retest reliability for a checklist shortened to 12 items was found to be .66. The nonsignificant correlation between the pretest and posttest scores obtained in this study suggests it may be considerably lower.

Another potential problem when using the checklist is establishing that subjects are indeed anxious. There seem to be rather great differences among clinical populations. In the present study, pretest means ranged from 211.8 to 198.2 and standard deviations ranged from 55.2 to 24.0.
These were comparable to Paul's (1966) pretest figures which ranged from 213.6 to 210.9 and 47.9 to 34.3, respectively. The pretest means of Meichenbaum et al. (1971), however, ranged from 148.9 to 143.2 with standard deviations from 12.8 to 5.8. Although procedures are sketchily reported, there is no indication that Meichenbaum and Paul computed the scores differently. With such broad differences in overt manifestation of discomfort it is difficult to choose a level to disqualify subjects on the basis of insufficient evidence of anxiety.

There is considerable variation in procedures among studies that have used the checklist (Hemme & Boor, 1976; Kirsch & Henry, 1977; Trexler & Karst, 1972). Part of this difficulty arises from the fact that subjects may not speak the entire 4 minutes (Hemme & Boor, 1976) as earlier research indicated they would. There is no standard method of prorating scores for speakers with long periods of silence.

Finally, and most important, it is asserted here that overt signs of speech anxiety do not necessarily improve rapidly in response to rational-emotive therapy and desensitization. It is recommended that future researchers in this area test their hypotheses on another disorder for which the therapeutic benefit is more firmly established.
Appendix A

Description of Study and Statement of Rights

The purpose of this study is to determine whether certain types of group therapy are more effective for certain types of people. For this reason all people who initially volunteer will not be selected to continue in the study. The therapies offered, which are two of three or four major therapies for public speaking difficulty, consist mainly of talking in a group of people with similar difficulty. Since both therapies have been found to be effective in the past, most people should improve in their public speaking ability. The therapist will be a PhD in clinical psychology.

While participating in this study you will not be required to do anything you feel uncomfortable about doing. You should feel free to ask questions about the procedures any time you desire. You may discontinue at any time and such withdrawal will not result in any form of prejudice toward you. All information about you will be given a code number so that your name will not be revealed to anyone not conducting or participating in the study. Group members will be instructed not to reveal any information about the groups to anyone not participating.
The desensitization manual provided for the therapist contained those elaborations of the Meichenbaum et al. (1971) procedures using only a public speaking hierarchy. These procedures were borrowed by Meichenbaum from Paul and Shannon (1966). Procedures described by Paul (1966) and referred to but not repeated by Paul and Shannon were included in the manual. As examples, the manual also included a description of the rationale and course of therapy, the presentation of the hierarchy and a basic speech anxiety hierarchy by Paul. Numbers of subjects in groups and numbers of sessions were consistent with the method section of Paul and not those given by Paul and Shannon. The Paul and Shannon session on test anxiety was omitted.

The rational-emotive therapy manual, contained selections from Meichenbaum's (1972) manual on test anxiety. Only those parts of the manual concerning cognitive modification were included. The therapist used these procedures by substituting descriptions of problems and suggestions appropriate to speech anxiety. The manual included only statements from the Meichenbaum manual which referred to therapeutic procedures.
Appendix C
Hierarchies

Hierarchy Used in the Fall

1. Signing up for a class in which no speeches will be required.
2. Signing up for a nonspeech class in which one or two oral reports are required.
3. Signing up for a speech class but you don't know how many speeches will be required.
4. Signing up for a speech class in which three speeches will be required.
5. Signing up for a speech class in which several speeches will be required.
6. Two weeks before a required speech: your topic is chosen and you feel confident.
7. Two days before a required speech: your topic is chosen and you feel confident.
8. One week before a required speech: you are trying to choose a topic.
9. Two days before a required speech: your topic is not chosen.
10. One day before a required speech and you are prepared.
11. Morning before the speech: you are getting ready to leave for school.
12. Entering the classroom on the day of the speech.
Appendix C—Continued

13. Watching someone give a speech. You are next.
14. You are called and you walk to the front of the room.
15. You're at the front of the room, looking at the rest of the class, ready to begin.
16. You utter the first words.
17. You are in the middle of the speech.

Hierarchy Used in the Spring

This hierarchy was identical to the one used in the fall with the following exceptions:

9. It is two days before required speech. You have a lot of work left to do on your speech.
10. You are reviewing your outline and notes the evening before the speech.
11. You are on your way to school thinking about the speech you will make.
Appendix D

Data for Subjects Completing Treatment

Subject 1-SD
Sex: Female  Age: 18  Speech Class: Yes
Number semester hours completed prior to treatment: 13
Semester participated: Fall  RS score: 77
Pretest BCL score: 161.6  Posttest BCL score: 147.9
Number of 30-second intervals completed on BCL:
Pretest: 5  Posttest: 6

Subject 2-SD
Sex: Female  Age: 18  Speech Class: No
Number semester hours completed prior to treatment: 0
Semester participated: Fall  RS score: 73
Pretest BCL score: 233  Posttest BCL score: 180.8
Number of 30-second intervals completed on BCL:
Pretest: 2  Posttest: 5

Subject 3-SD
Sex: Female  Age: 18  Speech Class: Yes
Number semester hours completed prior to treatment: 0
Semester participated: Fall  RS score: 70
Pretest BCL score: 174  Posttest BCL score: 233
Number of 30-second intervals completed on BCL:
Pretest: 8  Posttest: 2

*Note. SD = Desensitization group; BCL = Behavior Checklist; RET = Rational-emotive group; RS = Repression-Sensitization.*
Appendix D—Continued

Subject 4-SD
Sex: Female  Age: 18  Speech class: No
Number semester hours completed prior to treatment: 15
Semester participated: Fall  RS score: 61
Pretest BCL score: 196  Posttest BCL score: 233
Number of 30-second intervals completed on BCL:
Pretest: 4  Posttest: 3

Subject 5-SD
Sex: Female  Age: 19  Speech class: Yes
Number semester hours completed prior to treatment: 30
Semester participated: Fall  RS score: 58
Pretest BCL score: 233  Posttest BCL score: 170
Number of 30-second intervals completed on BCL:
Pretest: 2  Posttest: 4

Subject 6-SD
Sex: Female  Age: 20  Speech Class: No
Number semester hours completed prior to treatment: 13
Semester participated: Spring  RS score: 65
Pretest BCL score: 232  Posttest BCL score: 212.5
Number of 30-second intervals completed on BCL:
Pretest: 8  Posttest: 7
Appendix D—Continued

Subject 7-SD

Sex: Female  Age: 28  Speech class: No
Number semester hours completed prior to treatment: 68
Semester participated: Spring  RS Score: 63
Pretest BCL score: 233  Posttest BCL score: 200
Number of 30-second intervals completed on BCL:
Pretest: 2  Posttest: 4

Subject 8-SD

Sex: Male  Age: 19  Speech class: Yes
Number semester hours completed prior to treatment: 58
Semester participated: Fall  RS score: 34
Pretest BCL score: 233  Posttest BCL score: 212
Number of 30-second intervals completed on BCL:
Pretest: 2  Posttest: 4

Subject 9-SD

Sex: Male  Age: 18  Speech class: Yes
Number semester hours completed prior to treatment: 0
Semester participated: Fall  RS score: 28
Pretest BCL score: 156  Posttest BCL score: 158.6
Number of 30-second intervals completed on BCL:
Pretest: 8  Posttest: 6
Subject 10-SD
Sex: Male Age: 21 Speech class: Yes
Number semester hours completed prior to treatment: 67
Semester participated: Spring RS score: 24
Pretest BCL score: 233 Posttest BCL score: 194.7
Number of 30-second intervals completed on BCL:
Pretest: 8 Posttest: 8

Subject 11-SD
Sex: Male Age: 23 Speech class: No
Number semester hours completed prior to treatment: 130
Semester participated: Spring RS score: 29
Pretest BCL score: 198.4 Posttest BCL score: 170.7
Number of 30-second intervals completed on BCL:
Pretest: 5 Posttest: 6

Subject 12-SD
Sex: Male Age: 19 Speech class: No
Number semester hours completed prior to treatment: 15
Semester participated: Spring RS score: 33
Pretest BCL score: 202.3 Posttest BCL score: 233
Number of 30-second intervals completed on BCL:
Pretest: 7 Posttest: 3
Appendix D—Continued

Subject 13-SD
Sex: Female     Age: 38     Speech class: No
Number semester hours completed prior to treatment: 6
Semester participated: Spring     RS score: 39
Pretest BCL score: 166.6     Posttest BCL score: 208
Number of 30-second intervals completed on BCL:
Pretest: 6     Posttest: 4

Subject 14-RET
Sex: Female     Age: 18     Speech class: Yes
Number semester hours completed prior to treatment: 16
Semester participated: Fall     RS score: 79
Pretest BCL score: 228     Posttest BCL score: 164
Number of 30-second intervals completed on BCL:
Pretest: 4     Posttest: 4

Subject 15-RET
Sex: Female     Age: 27     Speech class: Yes
Number semester hours completed prior to treatment: 10
Semester participated: Fall     R-S score: 73
Pretest BCL score: 104     Posttest BCL score: 150
Number of 30-second intervals completed on BCL:
Pretest: 7     Posttest: 8
Appendix D—Continued

Subject 16-RET
Sex: Male  Age: 21  Speech class: No
Number semester hours completed prior to treatment: 19
Semester participated: Fall  R-S score: 61
Pretest BCL score: 233  Posttest BCL score: 177.4
Number of 30-second intervals completed on BCL:
Pretest: 2  Posttest: 6

Subject 17-RET
Sex: Female  Age: 19  Speech class: No
Number semester hours completed prior to treatment: 10
Semester participated: Spring  R-S score: 81
Pretest BCL score: 233  Posttest BCL score: 200
Number of 30-second intervals completed on BCL:
Pretest: 1  Posttest: 8

Subject 18-RET
Sex: Female  Age: 22  Speech class: Yes
Number semester hours completed prior to treatment: 15
Semester participated: Spring  R-S score: 75
Pretest BCL score: 196  Posttest BCL score: 233
Number of 30-second intervals completed on BCL:
Pretest: 8  Posttest: 2
Appendix D—Continued

Subject 19-RET

Sex: Female  Age:  20  Speech class: Yes
Number semester hours completed prior to treatment:  68
Semester participated:  Fall  R-S score:  32
Pretest BCL score:  233  Posttest BCL score:  170.7
Number of 30-second intervals completed on BCL:
Pretest:  1  Posttest:  6

Subject 20-RET

Sex: Female  Age:  24  Speech class: Yes
Number semester hours completed prior to treatment:  27
Semester participated:  Fall  R-S score:  28
Pretest BCL score:  233  Posttest BCL score:  233
Number of 30-second intervals completed on BCL:
Pretest:  1  Posttest:  2

Subject 21-RET

Sex: Female  Age:  23  Speech class: Yes
Number semester hours completed prior to treatment:  6
Semester participated:  Spring  RS score:  22
Pretest BCL score:  201.1  Posttest BCL score:  152
Number of 30-second intervals completed on BCL:
Pretest:  7  Posttest:  8
Appendix D—Continued

Subject 22-RET
Sex: Male  Age: 19  Speech class: Yes
Number semester hours completed prior to treatment: 9
Semester participated: Spring  R-S score: 31
Pretest BCL score: 185.4  Posttest BCL score: 202
Number of 30-second intervals completed on BCL:
Pretest: 6  Posttest: 4

Subject 23-RET
Sex: Male  Age: 18  Speech class: No
Number semester hours completed prior to treatment: 6
Semester participated: Spring 1978  R-S score: 39
Pretest BCL score: 233  Posttest BCL score: 233
Number of 30-second intervals completed on BCL:
Pretest: 1  Posttest: 2

Subject 24-RET
Sex: Male  Age: 20  Speech class: No
Number semester hours completed prior to treatment: 58
Semester participated: Spring  R-S score: 40
Pretest BCL score: 185  Posttest BCL score: 204
Number of 30-second intervals completed on BCL:
Pretest: 8  Posttest: 8
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