AN INVESTIGATION OF THE EFFECTS OF VARIED RATES OF TRAINING ON SYSTEMATIC DESENSITIZATION FOR INTERPERSONAL COMMUNICATION APPREHENSION

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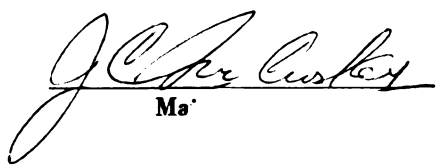

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ABSTRACT

AN INVESTIGATION OF THE EFFECTS OF
VARIED RATES OF TRAINING ON SYSTEMATIC DESENSITIZATION
FOR INTERPERSONAL COMMUNICATION APPREHENSION

By

Jack G. Nichols

Most college speech texts argue that the experience of giving speeches will reduce stage fright. The view is set forth in the stage fright literature itself and exemplified by current practice in most basic speech courses. Reinforcement theory suggests, however, that behavior is shaped by negatively as well as positively reinforced learning experiences. To someone with a great deal of communication apprehension, giving speeches may be negative reinforcement.

Systematic desensitization (SD) is a behavior therapy based on reinforcement theory; the underlying basis is reciprocal inhibition, or the contiguous pairing of relaxation with anxiety. Desensitization has been carefully researched and found successful for the treatment of a wide variety of maladaptive anxiety-based behaviors. Reinforcement theory was used as the basis for the hypothesis that Ss given SD five times in one week (massed

training) would achieve a greater reduction of communication anxiety than Ss treated once a week for five weeks (spaced training). The hypothesis was tested by matching 19 Ss on pretest scores from each of two treatment conditions and a no-treatment control group. The results were submitted to analysis of covariance and directional *t* tests.

Secondary hypotheses were related to the effects of the two training schedules over a three-month interval. The hypotheses were tested by matching 16 Ss on pretest and pre-post difference scores from each of the three conditions. The results were submitted to analysis of covariance and *t* tests.

Two introspective measures were employed. The Personal Report of Communication Apprehension (PRCA) was the chief instrument of analysis and was given as a pretest (covariate), posttest, and delayed posttest. The Speech Anxiety Inventory (SAI), a measure of public speaking anxiety rather than the more broadly based communication anxiety measured by the PRCA, was given as a posttest and delayed posttest.

The trainers were two graduate students in the Department of Communication with experience in the use of SD for communication apprehension. The training itself was conducted in a pleasant room with five reclining chairs and used an audio tape for the relaxation exercises.

The anxiety hierarchy was pretested in an earlier experiment.

The results indicated considerable support for the first hypothesis. On the PRCA an *F* ratio for treatments and *t* tests for differences in the predicted directions were all significant at the .05 level (Dailies > Weeklies > Controls). The data on the SAI did not support the hypothesis, though both treatment groups improved significantly more than the controls. Tests related to the secondary hypotheses indicated that the Dailies did not differ from the Weeklies after a three-month period, but both treatments had retained their significance compared to the Controls.

Accepted by the faculty of the Department of Communication, College of Communication Arts, Michigan State University, in partial fulfillment of the requirements for the Doctor of Philosophy degree.

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CHAPTER I

Introduction

> Taking a speech course will tend to reduce the amount of stage fright a person has. One reason for this reduction is obvious. During the experience of speaking frequently before audiences, the speaker has already begun to make habits of certain techniques and may now spend his mental attention responding to his ideas (Walter & Scott, 1962, p. 89).

Nearly every text or pertinent journal article in the field of speech over the last forty years has implied or promised that giving speeches will allow one to reduce his tensions. Clevenger and Phifer (1959) verified in their review of how college speech texts deal with anxiety that the most frequent advice given on curing the problem is to speak as often as possible (p. 5). Students of speech seem to share this faith in added experience. The most frequent reason they give for taking courses in public speaking is to "reduce feelings of nervousness" or to "feel more at ease" in front of an audience (Wilson, 1968, p. 121). Support for increased practice probably stems from what Clevenger and Phifer (1959) call "the pragmatic orientation of the speech profession" (p. 4). Those writers maintain that it has simply been accepted without question that giving speeches is a powerful cure for anxiety (p. 5).

The opposite may sometimes be true. Wilson (1968) reported, for example, that one-third of those taking public speaking at Michigan State University were fully as nervous after taking the course as before (p. 121). A similar survey of student response at the University of Minnesota showed almost identical results. A simple explanation for the difference between this set of findings and what teachers report from classroom conversations may be in who is perceived to be asking the questions. Even more damaging to the practice-makes-perfect position is the experimental evidence, cited in the Review of Literature section below, which demonstrates clearly that some students increase their anxiety along with their guided experiences. The potential damage done to those who will not or can not be helped by what is current practice in most speech departments suggests a more detailed look at the nature of anxiety.

Statement of Problem

The underlying rationale of most of the stage fright literature in speech is quite simple: anxiety is reflective of too little experience, the cure for which is immediate doses of that which is lacking. This hypodermic model approach is about as close as one can come to extrapolating a theoretical position from that material. Lomas (1937) attempted to apply learning theories to the physiological conditions which were then known to be associated

with fear; however, when he tried to make specific recommendations on how to overcome the difficulty (1944), he relied on the established advice of making speeches. Actually, learning theories suggest that attitudes and behavior are shaped largely by the number and intensity of relevant positively and negatively reinforced learning trials which one undergoes (Deutsch & Krauss, 1965, pp. 78-79). This would suggest that there might be a critical level of anxiety, below which one might accept giving speeches as positive reinforcement and above as negative reinforcement. To someone with a debilitating amount of communication apprehension, each new experience might teach him to become more anxious than before. Sarett and Foster (1946) seemed to embrace the idea of a critical level of anxiety when they declared that the term "stage fright" should be reserved for obvious instability and disruptive behavior (pp. 52-53).

Clevenger (1955) described the proliferation of terms which have been used interchangeably with stage fright, including "fear, anxiety, self-consciousness, nervousness, excitement, incipient neurosis, and lack of poise"; the overlap has led to what he said was the widespread assumption that the concept involves a single, "more or less easily definable emotional state" (p. 28). The argument that this noted behavioralist went on to present against the trend may have added to the confusion. He maintained

that the area must be broken into its many "component parts" for more convenient study (p. 29). Unfortunately, what these parts are has not been and perhaps can not be established. Attempts have been made, for example, to distinguish between fear and anxiety. Baird and Knower (1952) said that the phenomenon displayed in public speeches "is a conditioned form of fear" (p. 75). White and Henderlider (1954) failed to see the difference and said the concepts were the same (pp. 7-8). These and more recent efforts have largely involved only the manipulations of words in definitions. A psychologist named Murray (1964) concluded that fear "is usually thought to involve a specific, physical threat, whereas anxiety is a more general reaction to personal threats" (p. 54). He admitted, however, that they are physiologically identical--both involve increased blood pressure, heart beat, rate of respiration, etc. (p. 54). Failure to turn up consistent behavioral differences suggests that the phenomenon may be a broadly based emotional state which can manifest itself in a variety of contexts. Some learning theories offer insight for the mechanism involved. Writers like Lundin (1961) use classical conditioning to conclude that anxiety is a learned behavioral response caused by "a neutral stimulus that is followed at some point in time" by an aversive one (p. 264). Such an explanation applies equally well to all types of anxiety.

One further trend in the stage fright literature which appears ill-founded was reinforced by Clevenger (1955) in his widely quoted article. He forcefully reiterated the claim that speech teachers and researchers should be concerned only "with those cases where the emotion is directly due to the fact of performance before some audience" (p. 29). Anxiety over interpersonal communication undoubtedly operates outside these very narrow boundaries. Brady and Hunt (1955) suggest, for example, that one can respond with intense anxiety to a threat for which the origin can not be defined or remembered. They observed that anxiety responses to a specific stimulus often generalize to other stimuli. Contrary to what is advanced in the stage fright literature, one might thus become highly anxious to a variety of general stimuli and not be aware of what causes the problem. The psychological and physiological reactions which can accompany threatening situations might in time condition the individual to feel tension when something which is only associated with the actual stimulus is present. Verbal descriptions and other cue stimuli which can be generalized to the anxiety situations they represent regularly confront most everyone.

Generally, the concept of interpersonal communication anxiety presented in the stage fright literature is too narrow and without theoretical justification. Studies based on learning theories allow more consistent

descriptions and predictions for the potentially negative effects of practice, for the underlying basis by which anxiety is acquired, and for the diffuse ways in which anxiety can be manifested. The implicit suggestions for teachers of speech are: (a) that new means be found for reducing anxiety when it is debilitating; (b) that anxiety which accrues in one-to-one and small group situations be considered as well as that in strict speaker-audience relationships; and (c) that a wider variety of maladaptive behavior, including simple avoidance and stimulus generalization, be treated as indicators of anxiety.

If the treatment of anxiety is not tied to the production of oral messages, then the training or whatever is involved in the treatment need not be restricted to the classroom. An early study of stage fright by Low and Sheets (1951) was somewhat prophetic in this regard. They used observer ratings and self-reports to separate students into "most stage fright" (M) and "least stage fright" (L) groups. After giving four psychometric tests to the 132 subjects, they found that the M group had less platform speaking experience, fewer extracurricular and social activities, greater difficulty making social adjustments, less "linguistic ability," and less interest in self-expression or leadership. They found no significant differences in general intelligence, quantitative reasoning ability, the "more important" phases of personality, or

interest in science, mechanics, nature, and business (p. 271). Although the groups differed greatly in amount of previous speaking activity, the researchers could not conclude that the fearful students had less opportunity to speak than those in the L group; thus, consistent avoidance was not taken as a need for mandatory exposure but as a factor suggesting controlled therapy "to precede or parallel the public speaking class" (p. 271).

Systematic desensitization (SD) is such a therapy. In addition to meeting the requirements which have been outlined above, it lends itself to use by trained lay personnel and seems to generalize to situations other than those specifically involved in treatment. More traditional forms of psychotherapy, including psychoanalysis and hypnosis, are impractical in their application to communication anxiety because of the increasing shortage of psychiatrists and trained psychologists and because of their inaccessibility for such applications of their work. A review of the development and rationale of SD follows.

Systematic Desensitization

Developed by a physician named Wolpe in the early 1950s, SD can be described generally as a procedure for the gradual deconditioning of anxiety responses. More specifically, it involves the breaking down of anxiety-response habits by creating a physiological state incompatible with a state of anxiety, repeating exposure to a stimulus

until it loses its anxiety-producing properties, and continuing the procedure with progressively stronger stimuli until a planned anxiety hierarchy is completed.

Wolpe (1958) reported in his post-doctoral monograph that as a first step in developing the method he induced neuroses in cats and then fed them in an environmental situation completely different from the original, traumatic one. By gradually working the animals through a series of stages which increasingly approximated the original environment, he was able to overcome their neurotic reactions. It was obvious, however, that food would never be very effective in treating humans for their neuroses. He drew on the work of Jacobson (1938), who recommended the use of relaxation in the treatment of neurotic disorders. Wolpe reasoned that relaxation could substitute for feeding as a response antagonistic to anxiety. His first efforts with humans were tedious and impractical because he attempted to relax his patients in the actual presence of the objects responsible for their anxieties; further, some patients did not experience anxiety with this direct confrontation. It was at this point that he began experimenting with the imaginary evocation of the anxiety-producing stimuli. Asking his patients to imagine the objects which bothered them while they relaxed proved more practical and reliable.

Essentially, the sequence of instructions which evolved was: relax, imagine, relax, stop imagining.

Wolpe gives his patients "deep relaxation" instructions prior to training and induces them to reach a relaxed state at the beginning of each session. The essence of the procedure is to get them to relax all muscles not in use; it is only then that anyone is asked to imagine the scenes described by statements on the list. The anxiety hierarchy is defined as "a list of stimulus situations to which a patient responds with graded amounts of anxiety" (Wolpe, 1958, p. 139). The raw data for hierarchies has been gathered by questionnaires, by examining case histories, or by asking subjects to list things which frighten them and thematically or by content analysis providing a structured list for rank-ordering.

The underlying basis for the method of SD is <u>reciprocal inhibition</u>--the superimposition of relaxation on the anxiety response. The concept was introduced by Sherrington (1906) as the inhibiting of one spinal reflex by activation of another. Wolpe (1958) observed that conditioned inhibition of a response is developed if the action of one response inhibits an incompatible response and is followed by drive reduction (p. 29). He suggested that <u>forgetting</u> is a common instance of unlearning through reciprocal inhibition (p. 30). Actually, the relationship between drive reduction and learning is not very clear.

He noted that while Miller and Dollard (1941) posit the necessity of observable drive reduction for learning, Mowrer (1960) suggests its importance only in instrumental learning and not in forming autonomic response patterns like anxiety behaviors (Wolpe, 1958, p. 24). Illumination, fragrance, and saccharine ingestion are stimuli he cited as "apparently undeniable instances of learning, reinforced by conditions of drive increment instead of drive reduction" (p. 24). The overall hypothesis which coalesced is as follows:

> If after the learning, another activity takes place which involves the same or similar cues but a dissimilar response, there will be at the time a reciprocal inhibition of the response originally learned (p. 30).

Wolpe defines anxiety as autonomic response patterns characteristically made to certain stimuli and tending to lead to avoidance. He views anxiety as the "keystone" of all neuroses, except for some forms of hysteria, and he notes that a neurosis can be stimulated either by well defined or mentally evoked stimuli. Adaptive responses made to clear and present dangers are not neurotic; adaptive responses which inhibit human interaction often are. Generally, Wolpe maintains that a neurosis exists if unadaptive responses persist over time in the presence of anxiety. Interpersonal communication problems often meet these criteria.

There have been many experimental studies conducted to evaluate SD and to test the method on specific neuroses, including communication anxiety. This literature will be reviewed in the chapter which follows, along with two general criticisms of behavior therapies--that they result in symptom substitution and that they can not work because they do not deal with the causes of problems.

CHAPTER II

Past and Present Research

The purpose of this chapter is to evaluate the experimental justification of SD and to demonstrate how the effects of the method on interpersonal communication anxiety have generated the present research. A statement of hypotheses appears at the end of the chapter.

Review of Literature

A perusal of relevant psychology journals reveals that more than 150 studies utilizing SD have been published or are described secondarily in discussions of the method by others. A limited number of those not dealing with communication behavior but important to the development of SD are included in the present review. Criteria for selection to this general area were accessibility (only published materials were considered), representativeness (duplicatory efforts or findings were given greatly reduced emphasis), and methodological quality (except as noted, studies with unreported or unclear analyses of data were excluded). Because some critics feel that it is still somewhat tenuous to assume that treatment effects are independent of what neurosis is

isolated for desensitization, all of the available studies dealing with communication anxiety--including a few from the closely related area of test anxiety--are included.

The variant procedures found in the literature suggested that methods be described along with results for each study reviewed. A summary of conclusions appears at the end of the section.

Studies with general application. Lazarus (1961) made an early attempt to apply group procedures to SD. Those selected as Ss were 35 volunteers "whose phobias imposed a severe limitation on their social mobility, jeopardized their interpersonal relationships, or hindered their constructive abilities" (p. 505). They were matched as well as possible by sex, age, and the nature and severity of their problems. The experimentals (n = 18) received group desensitization in seven groups of two to five Ss each. The remaining Ss either received group interpretive therapy (n = 9) or group interpretive therapy and relaxation (n = 8). Evaluation was based on interviews and rigorous criteria for "unambiguous posttherapeutic freedom" from relevant phobic symptoms. Follow-ups were conducted by questionnaire, and any patient indicating the slightest recurrence of symptoms was considered to have relapsed. Lazarus summarized his results as follows:

> Group desensitization was applied to 18 patients of whom 13 initially recovered and 3

> subsequently relapsed. Group interpretation was applied to 9 patients. There were no recoveries in this group. Group interpretation-plus-relaxation was applied to 8 patients of whom 2 recovered and 1 subsequently relapsed. The 15 patients who had not benefited from the interpretive procedures were then treated by group desensitization. There were 10 recoveries of whom 2 subsequently relapsed (p. 508).

Although the differences between methods were significant in favor of SD, the author made no claim that predictions were confirmed because of his original bias for insight therapy. The lack of adequate control groups and poorly operationalized criteria for "success" of treatment diminish the meaningfulness of many conclusions which might otherwise be drawn. One can infer, however, that: (a) SD is effective in the treatment of even severe and incapacitating neuroses like acrophobia, claustrophobia, and sexual impotence; (b) Group desensitization is a promising means of providing large-scale treatment for anxiety-based problems.

A significant study was conducted by Lang and Lazovik (1963) on Ss with an excessive fear of snakes. They chose to study snake phobia simply because of its prevalence. The participants were 24 volunteer college students whose fear was judged intense on the basis of an interview, a questionnaire, and direct exposure to a snake. The experimentals (n = 13) were matched as well as possible with the controls (n = 11). Five meetings of 45 minutes in length were held for all Ss to gather the information

necessary for a 20-item anxiety hierarchy and to train them on how to visualize feared scenes while under deep relaxation. The experimentals were then treated individually in 11 sessions of SD. To test the effects of training in the actual presence of the anxiety-producing stimulus, half the experimentals were exposed to a snake before some of their treatment sessions. All of the available Ss were seen and evaluated six months after completion of the program. The researchers summarized the findings as follows:

> The results of the present experiment demonstrate that the experimental analogue of desensitization therapy effectively reduces phobic behavior. Both subjective rating of fear and overt avoidance behavior were modified, and gains were maintained or increased at the 6-month follow up (p. 524).

It was noted further that no symptom substitution was evident. Since no change took place in the control group, it was argued that muscle relaxation alone did not reduce phobic behavior. A close connection was observed between the amount of improvement for individual Ss and nearness to completion of the hierarchy at the end of the 11 sessions. Four important deductions can be made. (a) The desensitization process reduces avoidance behavior. (b) The effects of SD persist over time. (c) Symptom substitution does not result from treating symptoms directly. (d) It is not necessary to change basic values or the personality to reduce phobic reactions.

Lang, Lazovik, and Reynolds (1965) repeated the earlier study and added a second control group which received pseudotherapy. The 23 experimentals, 11 untreated controls, and 10 new controls were all given the same preliminary training, but the pseudotherapy Ss were given a series of interview sessions comparable in number, length, and therapist contact to SD for the experimentals. The new group received relaxation and what they were led to believe was a form of dynamic or interpretive therapy. The essential difference in the controls' treatment was that the therapist carefully avoided presenting any of the stimuli determined to be anxiety provoking. The results showed that those receiving SD improved significantly while neither the untreated controls nor the pseudotherapy group indicated any change. As in the earlier study, Lang et al. found that symptom substitution and the failure to search for causes do not limit the effectiveness of SD. Three added conclusions were implied by the new study. (a) Just being in a therapeutic relationship with a therapist is not sufficient to reduce phobic behavior. (b) Success of desensitization is completely independent of one's basic suggestibility (as assessed by the Stanford scale). (c) The desensitization of a specific fear generalizes positively to other fears.

Cooke (1966) conducted an experiment to compare the effects of using real or imaginal stimuli in SD. Thirty-four

volunteers with an intense fear of rats were rated in a stress situation by independent judges using a modified form of the Fear Behavior Checklist (FBC) developed by Paul (1964). The 12 judged most fearful were selected for the study and designated as high or low in general anxiety by halving their range of scores on the Bendig Emotionality Scale (Em) described by Bendig (1962). Two Ss from each anxiety level were then assigned randomly to direct deconditioning, to imaginal deconditioning, and to a no-treatment control group. Both treatment groups received relaxation instructions and assisted in the construction of a standardized anxiety hierarchy. The difference in the three treatment sessions the two groups received was the actual presence of a rat in the direct condition--the animal was used exactly as the anxiety items suggested. Both the experimental groups showed a significant reduction of specific fear compared to the controls; however, while there were no differences between high and low anxious Ss in the direct condition, the high anxiety group did show a significantly greater reduction than the low anxiety Ss in the imaginal condition. Cooke explained the unexpected finding as follows:

> It may be that though highly anxious subjects take longer to complete the anxiety hierarchy, what they achieve in therapy has greater transfer to extra-therapy measures than what the low anxiety subjects achieve. This notion gains some support from learning theory which has shown that response generalization is greater when drive is high than when it is low (p. 23).

It should also be noted that the direct condition did not suffer in its comparison to the imaginal group even though Ss were standing and moving around slowly after relaxation. This rather directly denies that it is relaxation alone which produces decreases in fear.

It can be deduced from the results that: (a) There are no overall differences between the effects of direct or imaginal desensitization; (b) People with high anxiety may benefit more from imaginal treatment than those with less anxiety; (c) Relaxation alone does not explain the beneficial effects of SD.

Rachman (1966) investigated the speed of generalization from desensitization to real-life situations. Spider phobic Ss were selected because the physical stimulus could be presented easily and could avoid the sensitivity which usually accompanies repeated subjective measures. An avoidance test, including personal reports of anxiety and observed proximity to the stimulus, was applied immediately before treatment, immediately after 15-20 minutes of SD, one day later, and one week later. The results indicated that reductions of anxiety transferred from the imaginal stimuli of the desensitization hierarchy to the actual, physical stimulus immediately "in 82 per cent of the observations" (p. 11). Rachman explained that:

> In 8 per cent of the instances when this immediate transfer was not observed . . . the imaginal stimulus was only presented once or

> was not presented at all (checks for extinction produced by avoidance tests). In the remaining 10 per cent of occasions the reaction pattern was unusual (miscellaneous) and immediate effects were actually observed in a proportion of these cases (p. 11).

While some relapse occurred one day after treatment in 38% of the observations, the initial reductions of anxiety were nearly regained by the end of one week. Indications were that greater delays in posttreatment measures would demonstrate continued reductions.

Two important inferences can be made from the study. (a) Desensitization of imaginal stimuli does generalize to real-life situations. (b) While generalization occurs immediately, some of the anxiety reduction may dissipate during the next 24 hours before consolidating again later.

Davison (1968) recently published his doctoral research, which sought to determine if one of the components of SD is primarily responsible for the effects of treatment. The Ss were 28 female volunteers who were very afraid of nonpoisonous snakes. They were given an improved version of the avoidance test developed by Lang and Lazovik (1963) and were matched and assigned to the four conditions of standard desensitization, pseudodesensitization (the imaginal stimuli coupled with relaxation were "essentially neutral and completely irrelevant to snakes"), exposure (the anxiety hierarchy of the standard group was given without relaxation), and no-contact control group. Ss in

the pseudodesensitization and exposure groups were yoked to their matched partners in the first group in terms of the number and length of treatment sessions. Because the E was interested in the source of treatment effects rather than the effects of treatment per se, two additional control factors were added. Suggestive effects were removed by telling all Ss they were participating in an experiment rather than a clinical study: no claims were made for the efficacy of procedures. Also, sponsorship effects were reduced by introducing the E as a graduate student rather than as an experienced psychotherapist; experiments in communication (Holtzman, 1966; McCroskey & Dunham, 1966) buttress the suggestion that attitudes toward a concept can be influenced by a perceived association with a high-credible source. The results showed that only the standard desensitization group improved significantly; the other two treatment groups and the control group did not differ. The author also noted that Ss asked to imagine the anxiety-producing stimuli without being relaxed signalled their uneasiness far more often (61%) than the desensitization Ss (27%).

A general conclusion made by Davison is that neither relaxation nor desensitization alone will reduce avoidance problems. The conclusion is supplemented by the findings of Rachman (1965) and Lomont and Edwards (1967). One can deduce from Davison's work that: (a) It is a combination

of relaxation and desensitization which permits the reduction of anxiety and concomitant avoidance behavior; (b) The contiguous pairing of imaginal stimuli with relaxation (reciprocal inhibition) is a genuine counterconditioning process.

Studies with specific application. Paul (1966) investigated the effects of SD on the fear of public speaking. He chose this particular fear for his tightly controlled study because

> the effects of debilitating performance anxiety on relevant behaviors appear to differ in no qualitative way from the effects produced by more widespread neurotic anxiety reactions . . . . Aside from its obvious value to students of speech . . . a study of performance anxiety manifested in public speaking should serve as a profitable starting point for the study of broader emotional problems (pp. 8-9).

A population of 710 students enrolled in a speech course was screened with five introspective measures, which included: the Anxiety Differential (Husek & Alexander, 1963); the IPAT Anxiety Scale Questionnaire (Cattell, 1957); the Pittsburgh Social Extroversion-Introversion and Emotionality Scales, including the MMPI L scale (Bendig, 1962); the Interpersonal Anxiety Scales from the S-R Inventory of Anxiousness (Endler, Hunt, & Rosenstein, 1962); and a shortened form of the Personal Report of Confidence as a Speaker (PRCS) created by Gilkinson (1942). Ninety-six of the students judged to have debilitating amounts of anxiety volunteered for

treatment. From this group 74 Ss completed a second battery of measures while giving a test speech (under conditions of stress). As a cognitive measure the Anxiety Differential was administered again four minutes before presentation; for physiological measures pulse rate and Palmar Sweat Index (PSI) readings were taken 1.5 and 0.5 minutes before the speech, respectively; to provide observer ratings the Timed Behavioral Checklist for Performance Anxiety developed by the author was applied by four highly trained graduate students during the speech. These Ss were matched and allotted to the five conditions of SD treatment (n = 15), insight therapy (n = 15), attention-placebo (n = 15), or no-treatment control (n = 22). The remaining Ss who volunteered for training but did not receive the second group of measures were made no-contact controls.

Five psychotherapists highly experienced with nondirective techniques acquired skill with the desensitization method after a short training period and were assigned to work individually with three Ss in each of the three treatment conditions. Post measures included the second battery given to all but the no-contact group after treatment and the first battery given to the entire sample at the end of the course. Paul found

> systematic desensitization consistently superior (100 per cent success); no differences were found between the effects of the insight-oriented psychotherapy and the nonspecific

> effects of the attention-placebo treatment (47 per cent success), although both groups showed greater anxiety reduction than the no treatment controls (17 per cent). Improvement was maintained at follow-up with no evidence of 'symptom substitution.' No differences were found between effects produced by different therapists, nor was improvement predictable from major personality variables (p. 98).

A delayed posttest using only the Anxiety Differential showed that the superiority of the desensitized group was maintained six weeks later.

A significant feature of the experiment was the inclusion of the attention-placebo group. Frank (1959) implied that the placebo effect, which refers to behavioral changes which stem from the nonspecific facets of attention, of suggestion, and of faith in the therapist, is the basic determinant of a therapist's influence. In Paul's group the same general work-up was provided that the other treatment groups received. A fake tranquilizer and "pupillary response checks" replaced the relaxation procedure and carefully masked "tolerance for stress" exercises replaced SD (pp. 22-24). The inductions worked so well that their effects were comparable, as noted, to those of insight therapy.

Rachman (1967) declared that the brief period allowed for treatment in the experiment "cannot be regarded as a fair test of 'insight therapy' which, by general agreement, is a procedure requiring a great deal of time to execute" (pp. 96-97). Paul seemed to anticipate the

proposed limitation. He referred to studies showing that brief psychotherapy is considered effective and is standard practice in most counseling centers. The impracticability of long-term therapy in such applications is clear, and it seems quite justifiable to compare SD with the form of treatment which is comparable to it in terms of function and current use. Further support of the comparison was the reaction of the psychotherapists in the experiment, who were experienced and biased in favor of the insight approach: they "rated subjects treated by systematic desensitization not only as improving more, but also as having a significantly better prognosis" (p. 71).

Paul's results allow a number of conclusions to be drawn for the application of SD to the fear of public speaking. (a) The method can bring about significant reductions of this specific fear as it has with others. (b) The use of SD does not result in symptom substitution. (c) The use of different therapists does not result in differential reductions of anxiety. (d) SD is superior to abbreviated insight therapy. (e) For highly anxious people a speech course does not result in a reduction of their fear of performance. (f) While a placebo effect can be as effective as insight therapy, it does not explain the reduction of anxiety which can result from desensitization. (g) SD can be effective in as few as five contact hours.

Paul and Shannon (1966) conducted a follow-up of Paul's earlier work to test the effects of group versus individual desensitization. Ten male Ss were drawn from each of the five groups (N = 50) participating in the earlier study. The criterion for selection was the matching of scores from the introspective measures. The Ss from the no-treatment control group, which had shown no reduction of anxiety as a result of completing the speech course, were given SD in two groups of five each; thus, the five conditions for comparison were those of SD in a small group format (n = 10), SD administered individually (n = 10), insight-oriented psychotherapy (n = 10), attention-placebo (n = 10), and no-contact control (n = 10). The authors noted that by giving the new treatment to students not concurrently enrolled in a speech class, an effective control was provided for the possibility that such experience could enhance the effects of training "once a degree of anxiety reduction had been attained" (p. 125). Measurement was simplified by the lack of opportunity to require stress speeches or to apply the second battery of tests which they necessitated. Although such considerations probably constituted the main reason for not including new physiological and observer ratings, Paul had implied in his earlier work that the role played by nonintrospective measures was much less practical and somewhat duplicatory (pp. 62-63). Only the self-report

measures were repeated for the group desensitization efforts. The researchers reported the following:

> When these results are compared with changes obtained for comparable subjects treated by individual programs of systematic desensitization, insight-oriented psychotherapy, and nonspecific attention-placebo techniques, the combined group desensitization treatment was superior to both the individual insight-oriented and attention-placebo programs (p. 133).

They also noted that there were no significant differences between group and individual desensitization, even though the former was provided without current participation in a speech course.

Implications of the findings are: (a) SD works as well in a small group format as it does on an individual basis (resulting in a considerable reduction of the therapist/subject ratio of contact time); (b) Hierarchies constructed from the shared anxieties of a group do not differ in effectiveness from individual hierarchies; (c) SD for communication anxiety need not be tied to public speaking experience.

Kondaš (1967) investigated the separate effects of the components of SD on examination and communication anxiety. A sample of children aged 11-15 years (N = 23) and a sample of college students (N = 13) were selected by interviews and by a 31-item Fear Survey Schedule (FSS) as highly anxious Ss. The schoolchildren were separated into groups receiving group desensitization (n = 6), relaxation only

(n = 6), presentation of hierarchy items without relaxation (n = 5), and no treatment (n = 6). The third condition was eliminated from the college student sample, presumably because of too few Ss: assignments were made to group desensitization (n = 6), relaxation only (n = 4), and no treatment (n = 3). Measurement for the college sample consisted only of pre- and posttest FSS, but the younger sample was given the questionnaire as a pretest, posttest, and five-month delayed posttest; the children were also measured by pre- and posttests using PSI estimates. The results showed that SD effected a reduction significantly different from either relaxation only or no treatment and that the latter two conditions were not significantly different from each other. In the sample of children both the SD and relaxation-only groups resulted in a significant reduction of anxiety, as compared to the control group. At the time of the delayed posttest, however, only the desensitized group maintained significant reductions of anxiety. Kondaš reported:

> The follow-up evaluation shows the stable effect of systematic desensitization. The effect of AT [relaxation only] was only transient and after 5 months, the pre-treatment level had been restored (p. 279).

Though fraught with methodological problems, the Kondaš study is consistent in its findings with an earlier effort by Rachman (1965).

The data appear to yield the following tentative conclusions: (a) SD works with subjects other than college students; (b) It is the combination of the component parts of SD which allows the method to retain its effects over time.

Paul (1968) has been the only researcher assessing SD to report on the long-term effects of treatment. He conducted a two-year follow-up of Paul and Shannon to investigate the change or stability which occurred over that period. He recognized at the outset that there are four central problems associated with extended evaluations of treatment.

> Assessment procedures are often of unknown or unproven validity; instruments used at follow-up are seldom the same as those used at pretreatment and posttreatment; appropriate no-treatment control groups for assessing change in the absence of treatment have not been included; many clients obtain additional treatment during the posttreatment period, thus invalidating cause-effect relationships for treatments being evaluated; differential return-rates within treatment groups result in selective attrition of the sample (p. 119).

Paul appears to have coped with these problems very well. The assessment procedures involved the same methods as before and came late enough that increased sensitivity to them was doubtful. The control group was made up of Ss who had volunteered for treatment during the original study but had not been given details of the training procedures either there or at the first follow-up. No Ss in the group desensitization or attention-placebo

treatments had received intervening psychological assistance, but 2 in the insight group, 1 in individual desensitization, and 10 in the no-contact control group had sought help; they were excluded from further analyses. (It should be noted that the trend of these outside contacts is generally supportive of experimentally defined success or failure of treatment.) While 100% of the four treatment conditions (N = 40) returned the solicited data, only 69% of the controls (N = 22) returned it. A comparison of excluded and retained controls indicated that a subsample bias existed which led to an underestimate of treatment effects; nevertheless, Paul found that the results substantiated the earlier findings and that SD can be

> administered in groups without loss of effectiveness in the treatment of interpersonal performance anxiety. Analysis of both self-report measures, and the public behavioral criterion of academic success, indicates that the significant reduction in maladaptive anxiety and increased extratreatment effectiveness found earlier were maintained over the long-term follow-up period, with evidence of additional generalized improvement in related areas (p. 127).

The results reached here provide general reinforcement for those of the earlier studies in the series; in addition, three new deductions can be made. (a) The reduction of anxiety by desensitization persists over extended periods. (b) The "relapse" and "symptom substitution" predicted by traditional insight or "disease" theories do not

occur. (c) SD applied to one fear generalizes to other fears.

Neuman (1968) compared the effects of group desensitization and insight procedures using professional and subprofessional counselors for Ss judged to be high or low in their ability to imagine anxiety-arousing stimuli. The target behavior selected was examination anxiety, and 69 college students from a multi-section required course volunteered for treatment. Two weeks before their midterm exam the volunteers were asked to fill out the S-R Inventory (Endler et al.) and the Test Anxiety Inventory (TAI) developed by Emery and Krumboltz (1967). Fifty-eight Ss came in for individual interviews and were given an Imagery Arousal Inventory for assignment to high and low conditions. The rest of the pretest measures, which included the Thayer Activation-Deactivation Checklist, the Test Anxiety Rating Scale, an Observers' Checklist, and Pulse Rate, were all given just before the examination. The professional counselors were two PhDs with many years' experience; the subprofessionals were two inexperienced graduate students given four hours of training. Each of the four conselors administered desensitization and insight procedures to separate groups of three high or low image-arousal Ss (N = 48). Ten Ss were no-treatment controls. Post measurements were taken before the final examination. Neuman gave the following account of his results:

> The findings of this study demonstrated that group systematic desensitization counseling techniques were more effective in reducing test, and other, anxiety in college students than traditional, psychodynamic group counseling methods based on client awareness and insight. Also, the use of subprofessionally-trained counselors was effective in treating students with examination anxiety (p. 74).

The level of arousal to projected scenes in verbal descriptions did not appear to be related to success of treatment.

Four important inferences can be made. (a) Group desensitization is more effective than insight therapy. (b) Lay trainers are as effective as professional counselors. (c) The degree to which clients physiologically respond or relax to images does not by itself determine success or failure in counseling. (d) The differential use of either no-treatment or no-contact control groups does not significantly affect the outcome of SD research.

McCroskey, Ralph, and Barrick (1970) sought to desensitize college students to speech anxiety while using lay personnel as trainers. The Paul version of the PRCS was administered on the first day of class to students enrolled in the basic public speaking course at Michigan State University. Those who scored in the upper half of the expected range were interviewed and asked to sign a statement if they wished to volunteer for treatment. Selection of the 12 male and 12 female Ss (N = 24) was based on a random assignment of those with common

meeting times available. An experienced trainer from the Counseling Department and two graduate students from the Speech Department administered treatment separately in the experimental conditions. A short training period and early monitoring with a hidden microphone and earphone arrangement were all that the lay trainers required. Six hours of therapy, using audio-taped relaxation instructions and a standardized hierarchy developed through a series of pretests, were spaced over three weeks. Pre- and posttests were, in addition to the screening device, the S-R Inventory and the Speech Anxiety Inventory (SAI). The third instrument was a revision of the TAI. McCroskey et al. state:

> The first analysis of the data obtained from all measures was a comparison between subjects treated by the counseling psychologist and those treated by the lay trainers. No significant differences were observed. . . . The subsequent analyses on the three dependent variable measures produced three clearly significant differences [in the hypothesized direction between experimental and control conditions] . . . .

Three conclusions seem possible from the study. (a) Lay trainers from outside the academic or applied research environments of psychology and counseling can use SD effectively. (b) Standardized hierarchies can be effective in the treatment of specific neuroses. (c) Communication anxiety can be desensitized in as little as five contact hours.

Summary of past research. The numerous conclusions cited above provide a rather comprehensive rationale for the effects of SD. The summary which follows was ordered primarily on the basis of where the statements came from and how many times they appeared.

Eight conclusions were common to studies which did or did not deal specifically with academic anxieties.

1. SD is effective in the reduction of anxiety and avoidance behavior.

2. Group desensitization is as effective as individual desensitization.

3. It is a combination of the component parts of SD which is responsible for its effects.

4. The elimination of a neurosis by desensitization does not result in symptom substitution.

5. The effects of SD persist over time.

6. The desensitization of imaginal stimuli generalizes immediately to real-life situations.

7. Placebo effect does not explain the success of desensitization. (The differential use of either no-treatment or no-contact control groups does not alter the outcome of SD research.)

8. The desensitization of a specific fear generalizes to other fears.

Seven conclusions appeared only in studies dealing specifically with academic anxieties.

9. Lay trainers can administer SD as effectively as professional counselors.

10. Standardized hierarchies desensitize as effectively as individual hierarchies.

11. SD is more effective than abbreviated insight procedures for the treatment of neuroses.

12. Successful desensitization can require as little as five contact hours.

13. Participation in a speech course does not reduce debilitating levels of communication anxiety.

14. The employment of different therapists does not result in differential reductions of anxiety.

15. Image responsiveness is not a clear indicator of effective desensitization.

Four conclusions arose from studies dealing with other neuroses.

16. SD is based on a learning process.

17. Although there are no overall differences between direct and imaginal visualization of stimuli, imaginal treatment may be more effective for people with initially high anxiety.

18. Success of desensitization is independent of suggestibility.

19. Neurotic behavior can be reduced without altering the personality or its basic values.

A general criticism of behavior therapies is that they result in symptom substitution. The charge is by nature a difficult one to pin down, because the predictions made are long range and are not clearly specified. The best experimental evidence on SD simply does not show that the alleged substitution occurs. While the fault may lie with assessment procedures, it is difficult to see how the dire consequences predicted can coexist with the finding that general improvement usually occurs in a variety of areas which have not been specifically desensitized.

A second, allied criticism is that therapy can not be successful unless it deals with the underlying cause of the problem requiring attention. At a surface level the SD literature abrogates the charge. It can be argued, however, that an alleviation of symptoms and a reduction of anxiety do not constitute "success" of treatment. In the view of the present writer, this argument is predicated on the assumption that the potential manifestation of new symptoms is the ultimate criterion of success or failure. Such a potential would not lend itself well to empirical test and may, in fact, be an outcome of desensitization. The argument then becomes one of whether treatment or no treatment for low-level neuroses constitutes the greater inherent danger. The pervasiveness

of a socially pernicious problem like communication anxiety, balanced against the minimal risk attendant to relatively minor manipulations of behavior would favor immediate and widespread treatment.

Generation of Present Research

Experimental evidence indicates that SD functions as it is purported to and that it is an effective means of reducing anxiety and related avoidance behavior for many kinds of neuroses. Rachman (1963) was prompted to say even before much of the recent work had been done that such methods have "now reached the point where large-scale field tests are possible and indeed, necessary" (p. 9). Before mass applications of SD can be made to communication anxiety, however, there are still some practical problems which must be resolved.

Of the over 2000 students McCroskey has tested by various means at Michigan State University, more than 10% have been judged to have very high levels of communication anxiety. Another 30% of that number have indicated moderately high rates of anxiety. Even by capitalizing on the use of lay trainers and standardized hierarchies, the director of a large speech program would still have difficulty providing desensitization for the volume of students needing help.

One possible increase of efficiency for SD was tested recently in a companion study of the present

effort. Ertle (1969) reasoned that if Ss were grouped homogeneously according to their pretest levels of anxiety, the problem of a group responding to desensitization only as fast as its slowest member could be averted. Contrary to what was hypothesized, the heterogeneous group achieved a significantly greater reduction of anxiety than the homogeneous group. A likely explanation of the finding is that the extra presentations of each stimulus situation allowed by slower movement through the hierarchy served as additional positive reinforcement for the less anxious members of the heterogeneous group. Apparently, assignment to treatment by like anxiety scores is not a productive procedure.

A second alternative is simply to process groups at a faster rate. While the number of sessions required for maintenance of desensitization was reduced slowly under experimental conditions from 20 and 30 for most phobias to 5 for less severe neuroses, the spacing between sessions has been held almost uniformly at one week. Wolpe (1966) declared that spacing does not matter greatly, after he noted clinical successes ranging from two sessions daily to one monthly (p. 85). There are two reservations to immediate acceptance of his conclusion, however. First, he was citing clinical rather than experimental evidence. Second, he dealt primarily with phobias requiring a larger number of sessions than academic anxieties seem

to require. If the effectiveness of even daily training could be demonstrated empirically, efficiency in broad applications of SD would be greatly enhanced.

Theory and Hypotheses

Hull (1943) described reactive inhibition as a sort of negative drive state or accumulation of fatigue which results from repetition of responses. As the reaction builds, an organism becomes less and less inclined to work and can be restored only by not doing the task. The principle appears to operate in desensitization, for the amount of continuous training Ss can absorb (and trainers dispense) without fatigue is set by clinical and experimental practice at 40 to 60 minutes. There is much less certainty, however, about the effects of varying the space between sessions.

An immediate problem in comparing massed and spaced practice is that the two terms are relative to each other and do not denote structured schedules; further, the nature of a task and the speed with which it can be acquired are major determinates of the two points of reference. Although the criteria are general and difficult to apply, there are at least three reasons for declaring that desensitization once a week represents a spaced schedule: (a) Wolpe has been successful with much more condensed training in clinical work; (b) SD is universally recognized

as involving a simple task; (c) Experimental evidence has demonstrated how fast desensitization is acquired and the immediacy with which it generalizes to real life. It appears justifiable to refer to daily training as massed and weekly training as spaced.

Bugelski (1956) was attempting to summarize the conditions which affect distribution of practice when he said:

> Massing may occasionally appear favored when the task involved calls for a 'warming-up' period. . . . It is possible that if the periods between practice sessions are too long some forgetting might occur and again massing would be favored. Hovland also suggests that spacing procedures tend to produce a 'fixation of response.' Should such fixations interfere with a more variable or versatile performance, massing would be favored (p. 472).

The 20 to 30 minutes spent each session getting recipients to relax can be thought of as a warm-up period; although the label is somewhat incongruous in this application, the intent of the criterion does not appear violated. It also seems likely that some forgetting occurs during a week's delay in training: each new session always begins by readministering treatment for the last "successfully" desensitized items from the week before. (If forgetting is partially responsible for Rachman's finding that there is a partial relapse of anxiety one day after training, a daily schedule would treat trainees at the peak of renewed tension.) In answer to Hovland's suggestion about fixed responses, the aim of SD is to provide a flexible framework of generalizable responses to counter the myriad

sources of communication anxiety not specifically described in the verbal statements of the hierarchy. Based on these considerations, the following primary hypotheses were made:

Hypothesis one. Ss given SD treatment five times in one week (massed training), Ss given SD treatment once a week for five weeks (spaced training), and Ss given no treatment will differ in the amount of anxiety reduction they achieve.

Hypothesis 1a. Ss given massed training will achieve greater anxiety reduction than Ss given no treatment.

Hypothesis 1b. Ss given spaced training will achieve greater anxiety reduction than Ss given no treatment.

Hypothesis 1c. Ss given massed training will achieve greater anxiety reduction than Ss given spaced training.

While all indications seemed to point toward the superiority of condensed training if it were measured soon after treatment, there was some reason to believe that the predicted difference between it and spaced training would not be maintained over time. It is a broad generalization of learning theories that intermittent reinforcement rather than continuous reinforcement of a response is more resistant to extinction after nonreinforcement has begun. Spaced and massed treatment were somewhat analogous in the conceptions which were made of them here, so it was thought that spaced training might be more efficient in retaining the effects of desensitization after cessation

of treatment. Since it was also thought, however, that a schedule of daily training is close to the hypothetical ideal of the acquisition curve for desensitization, there were conflicting indications of what kind of difference might be found on delayed measures. A significant difference in either direction on this secondary hypothesis would affect the kind of interpretation made of the earlier results. Accordingly, the following secondary hypotheses were formulated:

Hypothesis two. Ss give SD treatment will achieve greater anxiety reduction than Ss given no treatment.

Hypothesis 2a. Ss given massed training will achieve greater anxiety reduction than Ss given no treatment.

Hypothesis 2b. Ss given spaced training will achieve greater anxiety reduction than Ss given no treatment.

Hypothesis three. Ss given spaced training and Ss given massed training will differ in the amount of anxiety reduction they achieve.

CHAPTER III

Method

The primary hypotheses of this study were tested in two experimental conditions and a no-treatment control group with 20 Ss matched on pretest scores in each (N = 60). In one treatment SD was given daily for five consecutive days to four groups of five each; in the second treatment desensitization was given weekly to groups of the same size for five weeks; no-treatment controls were given the same pre- and posttests and explanation of training but were told treatment would not be available until the next term (wait-list controls). The results were submitted to analysis of covariance and *t* tests (prediction: Dailies > Weeklies > Controls).

The secondary hypotheses were tested with the same three conditions by noting which of the Daily Ss completed the three-month delayed posttests and matching comparable Weekly and Control Ss to them on the basis of pretest and pre-post difference scores. The results were submitted to analysis of covariance and *t* tests.

Measuring Instruments

The three means of securing anxiety estimates involve introspective, observer, or physiological measures. Most

researchers in the area of SD have been careful to use at least two of the three types in order to decrease reliance on any one of them. Differential results have been indicated occasionally, but the scattered discrepancies have revealed no pattern of one measure being consistently more or less likely to confirm hypotheses than another. The most striking difference among the three approaches is the ease with which they can be applied.

Introspective measures are inherently the easiest to use. Various means of self-report can be completed by large numbers of people in a relatively short period. Observer ratings, on the other hand, necessitate the careful training of judges, involve the use of many observers for each S rather than one E for many Ss, and limit what is observed to what can be incorporated into a static, performance situation. Clevenger (1959) noted three further disadvantages in a review of experimental research in stage fright. He concluded that groups of observers: (a) increase their reliability only as a "monotonic growth function of the number of judges"; (b) appear to be "less reliable in judging fearful speakers than in judging confident ones"; and (c) tend to record "less disruption in the speaker than the speaker reports having experienced" (pp. 136-137). Physiological measures possess many similar disadvantages. Even the simplest devices require experienced personnel and are uneconomical in terms of the contact time necessary for evaluation.

Because the three kinds of instruments have revealed similar treatment effects in studies of SD, and because the evaluative techniques for large applications of training must be efficient and unobtrusive, introspective measures were employed in the present study. The decision was bolstered by McCroskey's development of a new and highly reliable instrument.

Most of the rating devices used in earlier studies to disclose levels of communication anxiety actually dealt with the much narrower range of public speaking or performance anxiety. Paul's (1966) shortened version of the PRCS was one of these. To broaden the scope of treatment to more informal settings than the one-to-many situation allows, McCroskey added together the items from Paul's test, certain items from Gilkinson's (1942) original PRCS, and additional, newly created items; the list of 71 items was administered to 250 speech students at Michigan State University during the Summer Quarter of 1968 and submitted to factor analysis. Three factors were revealed, the first of which was responsible for 57% of the variance. The 20 items with the highest loadings on the first factor were converted to Likert-type, five-point scales and renamed the Personal Report of Communication Apprehension (PRCA) (see Appendix A). The new instrument was then administered to 769 speech students Fall Quarter of 1968 and showed an internal,

split-halves reliability of .92 and a test-retest reliability of .83 over a ten-day interval. The mean of the test was 58.92 with a standard deviation of 11.68 and with a range of 22-99 in a possible range of 20-100. The qualities of the measure were such that it was made the chief instrument of analysis for the pretest (screening device), posttest, and delayed posttest.

The SAI reported by McCroskey et al. (1970) was used as a post- and delayed posttest to serve as a check on the public speaking anxiety that it appeared to measure (see Appendix B). Subsequent factor analysis revealed that the instrument separated from the PRCA as an independent factor. The SAI and the PRCA factors together accounted for 63% of the variance, while a third factor accounted for only 3%. It was concluded that although the PRCA may overlap the public speaking content of the SAI slightly, it is based predominantly on the broader area of general communication apprehension. The data resulting from the two measures are treated separately in Chapter IV.

Subjects

On the first day of class during Winter Quarter, 1969, all of the 507 students enrolled in the basic speech course at Michigan State University were asked to fill out the PRCA. Machine scoring divulged a mean of 60.33 with a standard deviation of 12.22 and with a range of 24-99. (These figures correspond very closely to the distribution

noted for the pretest of the instrument.) The 238 students (47%) with a score of 61 or above were met at their classes, given a general description of the treatment available, and invited to attend one of two meetings scheduled to demonstrate actual procedures. Of the estimated 150 who came to the meetings, 117 volunteered for training and completed time schedules indicating the hours they were available. (A check of registration figures showed that 68 of the 238 students contacted, or roughly 30%, had dropped the course during the few days when withdrawal was allowed.)

Steps were taken to insure heterogeneous representation of anxiety levels in the individual treatment sessions. The 117 volunteers were grouped on the basis of their pretest scores into intervals representing half standard deviations above the mean; the actual ranges of scores on the PRCA were 61-66, 67-72, 73-78, and 79 or over. The assignment of five Ss to each of the daily training groups (n = 20) was then based on as even a distribution over the four pretest intervals as the students' schedules would allow. Ss from the weekly groups could be matched very closely on pretest scores to Ss from the daily groups because more students than necessary for the purposes of the study (40 in all) were given training on the standard weekly schedule. Similarly,

the control group could be matched quite well because of the 57 students who were put on the waiting list.

Trainers

The trainers were two graduate students from the Department of Communication at Michigan State University. Both were lay personnel in the sense that they were experienced teachers in the area of speech and communication but not trained psychologists. Each had received similar instruction before serving as a lay trainer in the study by Barrick, McCroskey, and Ralph (1968); the guidance had primarily been in terms of providing selected reading materials, allowing observance of an actual treatment session run by an experienced counselor, and discussing the rationale and procedures of training with the researchers. At the time of the present study, both trainers had approximately 10 hours of experience working with SD. The two were placed on a rotating schedule to control for any differences in personality or technique.

Training

In general, all training procedures corresponded to those proposed by Wolpe and Lazarus (1966). The minor exceptions are noted in the sections which follow:

Physical surroundings. A relatively quiet room was painted in subdued colors and furnished with five reclining chairs and indirect lighting. The scheduling

of all sessions in the late afternoon or early evening helped limit extraneous noises from the outside. The chairs were positioned in a semicircle so that the trainer had a full, frontal view of each S. An observation window was present so that proceedings could be viewed and commented upon later by the other trainer.

Relaxation. The relaxation exercises were recorded on audio tape to insure uniformity of instructions in all SD sessions. Essentially, the exercises involved the tensing and relaxing of ten key muscle groups, including the hands, arms, face, neck, back, chest, stomach, buttocks, legs, and feet. Approximately three minutes were devoted to each area on the half-hour tape. As Wolpe and Lazarus advised, a clear recognition of the difference between tension and relaxation in each of the areas was made as important a part of the message as a sense of overall physical release.

All Ss had listened to the tape in full at the demonstration session prior to their having volunteered. At the first regular training session, regardless of whether a daily or weekly schedule was involved, only a few minutes had to be spent recapitulating procedures. At later sessions the tape was stopped before its completion if each S had signalled by raising his right index finger that he was completely relaxed.

Anxiety hierarchy. Wolpe and Lazarus do not discuss the use of a standardized hierarchy. As noted in the review of literature, however, the technique has proven to be as effective as the creation of individual or group hierarchies and is considerably more efficient in terms of reducing the number of sessions required for treatment. The hierarchy used in the present study was adopted directly from the one developed through extensive pretesting by Barrick et al. (1968) (see Appendix C).

Stimulus presentation. Actual treatment began only when relaxation was complete. Each S was instructed to signal any anxiety he felt after a stimulus presentation by raising his right index finger from his chair. (This was the only form of communication the trainees were allowed.) At a signal of tension by any one of the Ss, the trainer immediately asked the group to cease imagining the described situation and to concentrate instead on complete muscular relaxation. If the trainer observed any restlessness during these temporary lulls, such as rapid breathing or nervous movement, he instructed the entire group to concentrate on relaxing the muscles involved. The imagine-stop imagining sequence was repeated until every S was able to visualize each stimulus without anxiety for two consecutive intervals of 15 and 30 seconds.

While Wolpe and Lazarus suggested that the duration of an imagined scene needs to be only five seconds, they

added that the period may be lengthened without detrimental effects on treatment (p. 84). Longer intervals were opted for in the present study because previous experience suggested that communication anxiety is sometimes delayed in manifesting itself by S indication.

The first five or six stimulus items were completed by most groups at the first meeting. Progress after that was usually slower, and most groups were desensitized to the last items only at the fifth meeting. So that Ss would always finish training with low levels of anxiety, individual sessions were ended at the successful completion of a feared scene; if time ran short, the last successfully handled item was presented again.

Measurement and Analysis

The overall comparisons in all hypotheses were made by a single-factor analysis of covariance with three levels representing the two experimental and one control conditions. The choice was made because of the increased precision allowed by the matched S design. The pretest score on the PRCA was used as the covariate in both tests.

One of the Daily Ss dropped out of training for personal reasons after it was too late to seek a replacement; thus, the first hypothesis was tested by 19 Weekly and 19 Control Ss matched to the 19 Dailies on the basis of their pretest scores. The use of directional t tests

were contingent upon a significant F ratio, and the level of significance set for all tests was .05.

Less than 100% of the 57 Ss returned the three-month delayed posttests. Because many of the Weeklies and Controls not used in the first comparison did return the instruments, new mates could be assigned to the 16 Dailies available for the second comparison. In addition to pretest scores, pre-post differences were used to match Ss for the test of the secondary hypotheses. A subsequent check of the newly selected Weeklies and Controls with their counterparts from the first comparison (who had not returned the dalayed posttests and thus were not used the second time) indicated that the results had not been distorted by the reselection process. The use of t tests were dependent upon a significant F ratio for differences among the three reconstituted groups of 16 matched Ss; the level of significance for all tests was again set at .05. A summary of the experimental design is presented in Figure 1.

FIGURE 1

Design

Group	PRCA Screen N = 507	Explanation Session N = 150	Treatments N = 57	Posttests (PRCA, SAI) N = 57	Delayed Posttests (PRCA, SAI) N = 48
Dailies	Yes	Yes	Yes	Yes	Yes
Weeklies	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	No	Yes	Yes

CHAPTER IV

Results and Conclusions

In chapter II it was hypothesized that Ss given massed training with SD would achieve a greater reduction of anxiety than Ss receiving spaced training, and that both would achieve greater reductions than Ss receiving no treatment. Secondary hypotheses, intended to check possible differential effects of treatments over time, predicted only that the two kinds of training would sustain greater reductions of anxiety than no treatment. The results and conclusions from the tests of these hypotheses follow.

Results

Table 1 contains a summary of dependent variable means, adjusted by covariance, for all experimental conditions. The presentation of findings in the four sections below are separated by the measuring instrument used and by the hypotheses tested.

PRCA post. Analysis of the PRCA posttest showed that the primary hypotheses were confirmed. The results of the analysis of covariance for the three groups of 19 matched Ss are reported in Table 2. The F ratio for

TABLE 1

Summary of Dependent Variable Means
Adjusted by Covariance

Measure	Dailies	Weeklies	Controls
PRCA Post	50.95	57.37	64.05
PRCA Delayed Post	54.81	56.89	65.36
SAI Post	93.74	93.18	106.98
SAI Delayed Post	93.28	97.53	108.00

TABLE 2

Summary of Analysis of Covariance for
Post PRCA Scores

Source	df	SS	MS	F
Covariate (Pretest PRCA)	1	1176.30	1176.30	26.87*
Treatments	2	1631.69	815.85	18.64*
Error	53	2320.33	43.78	
Total	56	5128.32		

*$p < .05$.

treatments was 18.64 ($p < .05$). A directional t test between the Dailies and Weeklies produced a t of 2.91 ($p < .05$). Similar tests between the Dailies and Controls and between the Weeklies and Controls produced ts of 5.94 and 3.03, respectively, and both were significant ($p < .05$).

SAI Post. The SAI posttests were submitted to analysis of covariance as a check on whether the first hypothesis was confirmed for public speaking anxiety, and the results are reported in Table 3. The computed F ratio of 5.60 was significant ($p < .05$). A directional t test between the Dailies and Weeklies revealed a nonsignificant t of 0.12. Directional tests between the Dailies and Controls and between the Weeklies and Controls produced ts of 2.76 and 2.88, respectively, both of which were significant ($p < .05$).

PRCA delayed post. The results of the analysis of covariance on the PRCA delayed posttests are reported in Table 4. The F ratio for treatments of 7.23 was significant ($p < .05$). A nondirectional t test between the Dailies and Weeklies generated a nonsignificant t of 0.69. In accordance with the assumption about both types of treatment retaining significance over the Controls, and permitted by the significant F, directional ts were run between the Dailies and Controls and between the Weeklies and Controls. The two resulted in significant ts of 3.48 and 2.79, respectively ($p < .05$).

TABLE 3

Summary of Analysis of Covariance for Post SAI Scores

Source	df	SS	MS	F
Covariate (Pretest PRCA)	1	1932.73	1932.73	9.34*
Treatments	2	2317.07	1158.53	5.60*
Error	53	10961.58	206.82	
Total	56	15211.38		

*$p < .05$.

TABLE 4

Summary of Analysis of Covariance for Delayed Post PRCA Scores

Source	df	SS	MS	F
Covariate (Pretest PRCA)	1	2913.09	2913.09	42.16*
Treatments	2	999.40	499.70	7.23*
Error	44	3040.35	69.10	
Total	47	6952.84		

*$p < .05$.

SAI delayed post. Covariance analysis of the SAI delayed posttest scores (see Table 5) produced a significant *F* ratio for treatments of 5.37 ($p < .05$). A nondirectional *t* test between the Dailies and Weeklies resulted in a nonsignificant *t* of 1.04. Directional *t* tests between the Dailies and Controls and between the Weeklies and Controls produced *t*s of 3.12 and 2.08, respectively; both were significant ($p < .05$).

TABLE 5

Summary of Analysis of Covariance for Delayed Post SAI Scores

Source	df	SS	MS	F
Covariate (Pretest PRCA)	1	8030.12	8030.12	42.13*
Treatments	2	2047.83	1023.91	5.37*
Error	44	8387.19	190.62	
Total	47	18465.14		

*$p < .05$.

Conclusions

Substantial support was obtained for the primary hypotheses. On the chief instrument of analysis, the PRCA, the observed differences in anxiety reduction were all in the predicted directions: *S*s who received daily training showed a significantly greater reduction than the *S*s

receiving weekly training, and both were significantly lower than Ss who were given no treatment. The discrepancy of findings on the SAI can probably be explained in terms of what the two measuring instruments are purported to measure. The PRCA was designed to be sensitive to differences in broadly based communication apprehension; the anxiety hierarchy used in the study was attuned to the desensitization of a wide variety of communication situations, in addition to public speaking anxiety. The SAI, on the other hand, samples only the specific fears associated with the stereotyped, formal, and highly structured public speaking situation.

An important feature of the failure to confirm hypothesis 1c with the SAI should be noted. In spite of the Dailies not getting a significantly greater reduction of anxiety than the Weeklies, both treatment groups registered the expected results compared to the Controls. Further, the failure of the second instrument to support the differences observed with the PRCA is consistent with past SD research: while desensitization is thought to generalize to real life immediately, no such agreement exists on the speed of generalization from one fear to another.

The data on the second and third hypotheses were also in keeping with expectations based on learning theories. The effects of massed training were not superior to those of spaced training over a three-month interval. Given

the immense practical value of daily training for large applications of SD in the speech field, it is still a very useful observation that a relatively condensed training schedule does not differ in its long-term effects from its more standardized counterpart. (It is interesting to note that the nonsignificant trends in the data from both of the measuring devices were in favor of daily training). On both instruments the two treatment groups retained their significantly greater reductions of anxiety, compared to the control group. The similar findings from the two instruments suggest that desensitization of communication anxiety leads directly to the concomitant desensitization of its incorporated public speaking anxiety and that this effect is maintained after initial treatment effects are allowed to settle.

To check on the effects of using the reselected groups of 16 Ss to test the secondary hypotheses, a post hoc analysis of the appropriate pretest and pre-post difference scores was conducted. Results indicated that the regrouped Ss supported the primary hypotheses in the same manner as the original groups of 19 Ss supported them.

The results of the study may actually be conservative estimates of treatment effect. Paul (1966) provided strong evidence for the conclusion that no-treatment control groups of the type used in the present study actually receive some of the benefits of therapy simply because of their knowledge

and understanding of the treatment available and because of therapist contact. He maintained that "any treatment 'worth its salt' should produce measurable changes over and above the effects of testing and intake procedures" (p. 90). The nature of the present design should thus have been slanted against obtaining the predicted results.

The fact that the effects of massed training held up over time as well as they did suggests the possibility that a single "refresher" session, given a few weeks after the five days of treatment, might allow lasting superiority to the effects of spaced training. There is no precedent in the SD literature for the resumption of treatment once a "cure" has been pronounced. The results of the present study indicate that such an investigation might reveal an even greater potential for condensed training than has already been demonstrated.

A general characteristic of the findings which has been assumed but not mentioned explicitly is its reaffirmation of the overall effectiveness of SD. In the critiques which have been written on the method, and in all of the ways the various features of it have been operationalized and controlled, not a single published experiment has failed to report the success of treatment. The present study is confirmatory of this body of literature. Condensed scheduling of treatment appears to be another means by which the efficiency of the method can be increased without damage to its demonstrated success.

CHAPTER V

Summary and Implications

Summary

Most college speech texts argue that the experience of giving speeches will reduce stage fright. The view is set forth in the stage fright literature itself and is exemplified by current practice in most basic speech courses. Reinforcement theory suggests, however, that behavior is shaped by negatively as well as positively reinforced learning experiences. To someone with a great deal of communication apprehension, giving speeches may be negative reinforcement.

Systematic desensitization (SD) is a behavior therapy based on reinforcement theory; the underlying basis is reciprocal inhibition, or the contiguous pairing of relaxation with anxiety. Desensitization has been carefully researched and found successful for the treatment of a wide variety of maladaptive anxiety-based behaviors. Reinforcement theory was used as the basis for the hypothesis that Ss given SD five times in one week (massed training) would achieve a greater reduction of communication anxiety than Ss treated once a week for five weeks (spaced training). The hypothesis was tested by matching 19 Ss on

pretest scores from each of two treatment conditions and a no-treatment control group. The results were submitted to analysis of covariance and directional *t* tests.

Secondary hypotheses were related to the effects of the two training schedules over a three-month interval. The hypotheses were tested by matching 16 *Ss* on pretest and pre-post difference scores from each of the three conditions. The results were submitted to analysis of covariance and *t* tests.

Two introspective measures were employed. The Personal Report of Communication Apprehension (PRCA) was the chief instrument of analysis and was given as a pretest (covariate), posttest, and delayed posttest. The Speech Anxiety Inventory (SAI), a measure of public speaking anxiety rather than the more broadly based communication anxiety measured by the PRCA, was given as a posttest and delayed posttest.

The trainers were two graduate students in the Department of Communication with experience in the use of SD for communication apprehension. The training itself was conducted in a pleasant room with five reclining chairs and used an audio tape for the relaxation exercises. The anxiety hierarchy was pretested in an earlier experiment.

The results indicated considerable support for the first hypothesis. On the PRCA an *F* ratio for treatments and *t* tests for differences in the predicted directions

were all significant at the .05 level (Dailies > Weeklies > Controls). The data on the SAI did not support the hypothesis, though both treatment groups improved significantly more than the controls. Tests related to the secondary hypotheses indicated that the Dailies did not differ from the Weeklies after a three-month period, but both treatments had retained their significance compared to the Controls.

Implications

The implications of the present study for future research and practice in the field of speech are many. SD appears to have proven itself a theoretically sound and practically feasible means of reducing the anxiety and avoidance behavior often linked to social fears like communication apprehension. Future research efforts should probably concentrate on what can be done with the method, like condensed training, which will increase its efficiency in large-scale applications.

Research. One needed avenue of research is on what Wolpe (1966) called the problem of misleading or irrelevant hierarchies. Despite the care which went into the preparation of the Communication Apprehension Hierarchy, the trainers in the present study noted occasional instances of some Ss reacting much more intensely to some hierarchal items than their patterns of response to other stimuli would lead one to predict. Male upperclassmen

sometimes required more presentations of "A potential employer calls you in for an interview," for example, than was expected on the basis of their quiescence to other items. To use the same example, younger coeds with considerable anxiety for most of the stimuli might not associate any tension at all with a job interview. The problem, of course, is inherent in attempts to create generalized hierarchies: it is highly unlikely that any two Ss will have exactly the same multiplex response sets. In the creation of individual hierarchies for clinic work, only the problem of identifying a single person's pattern of responses exists. A group hierarchy requires a weighting and blending of items that make sense for the particular group. The general hierarchies necessary for mass desensitization of even well unified, specific fears requires considerably more compromise of individual behavior patterns. What is needed is not a return to individual treatment--the cost in administrative and therapist time makes such a program too inefficient. Better ways to identify population characteristics must be found. Carefully controlled use of Thurstone and Chave (1929) scaling procedures may provide the best route for hierarchy development.

Research is planned which will include factor analysis of the responses of large numbers of high school and college students, professional people, etc., to establish factor

loadings on a long list of items by age, sex, occupation, and race. The population characteristics and associated anxiety weights for items of a given sample could then guide the selection of items for a hierarchy without continual testing and expert supervision.

Based on the experience of the present author, sex and race seem to be likely variables for consideration in the desensitization of communication apprehension in college students. The manifestation of sex differences was noted in the example related above. Race may present similar anomalies in the results of training. In the present study, for example, the six black students who received treatment responded a disproportionate number of times to "Your instructor tells you to report on an assigned article before the class" and "Your instructor has asked you to speak to 15 staff members at a meeting." It is probably more than a coincidence that the six students (particularly the four from a Detroit ghetto) viewed the two scenes as unfamiliar and hostile. Accounting for sex and race differences in the hierarchies for different groups might improve the precision of treatment even for the relatively uniform population of college students.

There is also a need to pursue two other areas of research--difficulties with relaxation and stimulus visualization. Wolpe (1966) concluded from his clinical experience that trainees can fail to respond to treatment

because of either problem. While there were no reported or observed cases in the present investigation of Ss not becoming relaxed, Wolpe noted that an occasional patient will not have experienced calm for so long "that any substantial drop in tension seems like relaxation to him" (p. 92). Polygraph readings taken while relaxation is being induced would provide an excellent measure of relative and basal amounts of tension for individuals. An E could then determine the experimental effects of this trait by adding a control to his design. If more variance were accounted for, two additional research goals should be sought. Means should be found: (a) to identify hard-to-relax Ss without the use of time-consuming or disruptive physiological devices; and (b) to help these same Ss reduce tensions enough to allow desensitization. Drugs and hypnosis have been used by Wolpe pursuant to the second goal, but neither method lends itself to use by lay trainers and administrators. The first goal may be more important still: without a more practical means of identification than polygraph readings, Ss who have trouble relaxing can not be isolated for as yet unidentified procedures or exemption from treatment.

The inability of some people to imagine the scenes depicted in verbal descriptions appears to be an even more formidable problem. Wolpe (1966) notes that:

> There are a few people who are simply unable to conjur up either visual or auditory images--at any rate in response to the requirements of the therapist. Far more commonly, the trouble is that while images can be formed they have no sense of reality for the patient (p. 95).

The only solution Wolpe suggests is treatment in vivo (the use of real rather than imaginary stimuli). While Paul (1966) managed a rather cumbersome "stress test" for public speaking anxiety, a comparable arrangement for the more diffuse situations involved in general communication anxiety would be even less practical for large applications. As in the case of the relaxation problem, however, identification is a first step for any investigative purposes. The polygraph might again be employed, perhaps just after relaxation had been accomplished under examination. Selected stimuli could be presented and the reactions to them recorded. A polygraph expert in the Police Administration Department at Michigan State University reported in an interview that even minute changes in blood pressure, respiration, and pulse rate (normal indicants of tension) can be measured. Once a group of low imaginal Ss were differentiated, more practical means of identifying others with the same trait might be found. Separate treatment or no treatment at all for such people would again enhance the operation of a large program of SD for communication apprehension.

An intriguing and far-reaching extension of the effort to provide desensitization for many by a few has resulted in the conception of a cumputer simulation model. MacDonald (1969) recently outlined an automated program which could provide a close facsimile of training procedures. Essentially, he maintained that a technician could replace several trainers by monitoring a large group of Ss with adequate taped instructions, response indicators, and computer facilities. Relaxation instructions and training could be set on a number of cycles; if the number of cycles permitted by programming for a particular operation were exceeded, an error-stop would occur with notations printed for the trainer. A decision could be made at this point whether to have the technician reset parameters (modify the individual program) or to refer the S to professional counselors. Where the current tension level was reduced to the parameter, the next stimulus item from the hierarchy would be presented. Such an application of a computer could greatly increase the efficiency of the routine chores of SD and free trainers to perform their fewer decisions with greater care.

Practice. Rapid and effective ways to reduce communication anxiety and avoidance behavior should be welcomed and adopted quickly by the field of speech. While nearly all teachers in the area have shown great interest

and concern for students with debilitating anxiety, most teachers have been handicapped by ambivalent and even harmful notions of how to cope with the problem. At an individual level, some have doubtlessly functioned very well in helping nervous-to-terrified students along; in fact, the essential property of SD--teaching one to be relaxed in the face of anxiety-producing stimuli--may be the basis of a great deal of classroom instruction. Even with these very concerned teachers, however, two problems have persisted in their efforts: (a) Most instruction has been inextricably bound up with public speaking. (b) Students who learn "gimmicks" to conceal their fear and those who drop the course usually go unnoticed in comparison with those who manifest visible or oral symptoms of stage fright.

For a majority of students in speech courses, public speaking may provide positive reinforcement. Some educators recognize that for many it is not but continue established practice "to do the greatest good for the greater number." The administration of SD outside the classroom can enlarge the scope of the maxim so that nearly all can gain fully from their speaking experiences. Where students have sought and colleges encouraged participation in speech primarily as a means of gaining confidence in talking with others, perhaps enrollment will

and should decrease when SD is available. Most every teacher in the area has felt occasionally that some students have a simplistic and distorted idea of what the basic course in speech should be and enroll for the wrong reasons.

At a time when performance in speech and communication courses is being questioned as never before, some teachers may feel defensive about the seminal effects of a method which is claimed to reduce tensions so well for so many. Such a reaction by educators would miss the thrust of a tool which is uniquely suited for their needs.

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APPENDIX A

PRCA - Form 168

This instrument is composed of 20 statements regarding feelings about communicating with other people.

Indicate the degree to which the statements apply to you by marking whether you (1) strongly agree, (2) agree, (3) are undecided, (4) disagree, or (5) strongly disagree with each statement. Work quickly, just record your first impression.

Do not mark on this page. Please use the answer sheet provided.

		1 2 3 4 5
1.	I look forward to an opportunity to speak in public.	SA A U D SD
2.	My hands tremble when I try to handle objects on the platform.	SA A U D SD
3.	I dislike to use by body and voice expressively.	SA A U D SD
4.	My thoughts become confused and jumbled when I speak before an audience.	SA A U D SD
5.	I have no fear of facing an audience.	SA A U D SD
6.	Although I am nervous just before getting up, I soon forget my fears and enjoy the experience.	SA A U D SD
7.	I face the prospect of making a speech with complete confidence.	SA A U D SD
8.	Although I talk fluently with friends I am at a loss for words on the platform.	SA A U D SD
9.	I feel relaxed and comfortable while speaking.	SA A U D SD
10.	I always avoid speaking in public if possible.	SA A U D SD
11.	I enjoy preparing a talk.	SA A U D SD
12.	My posture feels strained and unnatural.	SA A U D SD

		1	2	3	4	5
13.	I am fearful and tense all the while I am speaking before a group of people.	SA	A	U	D	SD
14.	I find the prospect of speaking mildly pleasant.	SA	A	U	D	SD
15.	I look forward to expressing my opinion at meetings.	SA	A	U	D	SD
16.	While participating in a conversation with a new acquaintance I feel very nervous.	SA	A	U	D	SD
17.	Conversing with people who hold positions of authority causes me to be fearful and tense.	SA	A	U	D	SD
18.	I would enjoy presenting a speech on a local television show.	SA	A	U	D	SD
19.	I feel that I am more fluent when talking to people than most other people are.	SA	A	U	D	SD
20.	I am tense and nervous while participating in group discussions.	SA	A	U	D	SD

APPENDIX B

PRCA - Form 169

This instrument is composed of 34 statements regarding feelings about communicating with other people.

Indicate the degree to which the statements apply to you by marking whether you (1) strongly agree, (2) agree, (3) are undecided, (4) disagree, or (5) strongly disagree with each statement. Work quickly, just record your first impression.

Do not mark on this page. Please use the answer sheet provided.

		1 2 3 4 5
1.	While preparing for giving a speech I feel tense and nervous.	SA A U D SD
2.	I feel tense when I see the words "speech" and "public speech" on a course outline when studying.	SA A U D SD
3.	My thoughts become confused and jumbled when I am giving a speech.	SA A U D SD
4.	Right after giving a speech I feel that I have had a pleasant experience.	SA A U D SD
5.	I get anxious when I think about a speech coming up.	SA A U D SD
6.	I have no fear of giving a speech.	SA A U D SD
7.	Although I am nervous just before starting a speech, I soon settle down after starting and feel calm and comfortable.	SA A U D SD
8.	I look forward to giving a speech.	SA A U D SD
9.	When the instructor announces a speaking assignment in class I can feel myself getting tense.	SA A U D SD
10.	My hands tremble when I am giving a speech.	SA A U D SD
11.	I feel relaxed while giving a speech.	SA A U D SD

		1	2	3	4	5
12.	I enjoy preparing for a speech.	SA	A	U	D	SD
13.	I am in constant fear of forgetting what I prepared to say.	SA	A	U	D	SD
14.	I get anxious if someone asks me something about my topic that I do not know.	SA	A	U	D	SD
15.	I face the prospect of giving a speech with confidence.	SA	A	U	D	SD
16.	I feel that I am in complete possession of myself while giving a speech.	SA	A	U	D	SD
17.	My mind is clear when giving a speech.	SA	A	U	D	SD
18.	I do not dread giving a speech.	SA	A	U	D	SD
19.	I perspire just before starting a speech.	SA	A	U	D	SD
20.	My heart beats very fast just as I start a speech.	SA	A	U	D	SD
21.	I experience considerable anxiety while sitting in the room just before my speech starts.	SA	A	U	D	SD
22.	Certain parts of my body feel very tense and rigid while giving a speech.	SA	A	U	D	SD
23.	Realizing that only a little time remains in a speech makes me very tense and anxious.	SA	A	U	D	SD
24.	While giving a speech I know I can control my feelings of tension and stress.	SA	A	U	D	SD
25.	I breathe faster just before starting a speech.	SA	A	U	D	SD
26.	I feel comfortable and relaxed in the hour or so just before giving a speech.	SA	A	U	D	SD
27.	I do poorer on speeches because I am anxious.	SA	A	U	D	SD
28.	I feel anxious when the teacher announces the date of a speaking assignment.	SA	A	U	D	SD

		1	2	3	4	5
29.	When I make a mistake while giving a speech, I find it hard to concentrate on the parts that follow.	SA	A	U	D	SD
30.	During an important speech I experience a feeling of helplessness building up inside me.	SA	A	U	D	SD
31.	I have trouble falling asleep the night before a speech.	SA	A	U	D	SD
32.	My heart beats very fast while I present a speech.	SA	A	U	D	SD
33.	I feel anxious while waiting to give my speech.	SA	A	U	D	SD
34.	While giving a speech I get so nervous I forget facts I really know.	SA	A	U	D	SD

APPENDIX C

Communication Apprehension Hierarchy

I WANT YOU TO IMAGINE THAT:

1. You are talking with a friend.
2. You are trying to make a point at a bull session and you notice that everyone is looking at you.
3. You have been assigned to give a presentation in a panel discussion.
4. Your instructor tells you to report on an assigned article before the class.
5. You are next to speak, and the person speaking now is making a fool of himself.
6. A potential employer calls you in for an interview.
7. Each member of a panel discussion has given his opinion and it is your turn.
8. You have returned to your high school for a brief visit, and the principal asks you to talk about MSU to a class of students.
9. It is the night before an important speech and you are practicing your presentation.
10. Your instructor has asked you to speak to 15 staff members at a meeting.
11. You are about to give your next speech, and a substitute instructor walks in the door.
12. You are about to speak before an unfamiliar audience.
13. Your instructor has just called on you to give an impromptu speech.
14. You are getting up to give a speech on a topic that the previous speaker just covered thoroughly.
15. You are about to give your speech and the instructor tells you that you cannot use your notes.