Comparison of live versus automated treatments for the reduction of public speaking anxiety: Systematic desensitization and hypno-behavioral treatment

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A COMPARISON OF LIVE VERSUS AUTOMATED TREATMENTS
FOR THE REDUCTION OF PUBLIC SPEAKING ANXIETY:
SYSTEMATIC DESENSITIZATION AND HYPNO-BEHAVIORAL TREATMENT

By

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B.S., University of Utah, 1976

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ABSTRACT

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The present investigation compared two preprogrammed treatments -- systematic desensitization and "hypno-behavioral treatment" -- for their relative efficacy in reducing public speaking anxiety. Additionally, the effectiveness of the above-noted treatments was examined under both live and automated conditions of presentation. Sixty speech anxious subjects were randomly distributed from stratified blocks of hypnotic susceptibility to five treatment and control conditions (N = 12 in each): (a) systematic desensitization, live; (b) systematic desensitization, automated; (c) hypno-behavioral treatment, live; (d) hypno-behavioral treatment, automated; and (e) waiting list control. All treatment groups met for three weekly 90-minute sessions. Treatment effectiveness was assessed both by self-report and motoric measures, administered to all subjects at both pre- and post-treatment. The results indicate systematic desensitization and "hypno-behavioral treatment" to be comparably effective in reducing public speaking anxiety. Additionally, the automated mode of presentation proved to be as effective as the live mode for both treatment methods. Relative to controls, treatment subjects improved significantly as assessed by the self-report measures, administered to all subjects at both pre- and post-treatment. Motoric indices indicated no differences between conditions.
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INTRODUCTION

Public speaking anxiety has been the subject of considerable concern and investigation for over four decades. At present, it continues to attract the attention of researchers and practitioners in the fields of speech communication and psychology who strive to gain increased understanding of this widespread problem and to develop effective and efficient procedures for its alleviation. The prevalence of public speaking anxiety is well-documented. In a nationwide survey of American adults, Bruskin Associates (1973) found the most frequently reported fear to be that of speaking in public, affecting 40.6% of the more than 2500 adults surveyed. Among college populations, percentage estimates of students considered highly speech anxious typically range from 10 to 40 percent (Lohr & McManus, 1975; McCroskey, 1977). Similar estimates have been reported among other populations, including elementary and secondary school students, adults, and senior citizens (McCroskey, 1977).

Treatment Approaches to Public Speaking Anxiety

In a recent summary of the research on speech anxiety, McCroskey (1977) points out that up until the last decade, only one method was employed to help people overcome their speech anxiousness -- requiring the individual to speak in a public setting (e.g., public speaking classes, "show and
tell," oral book reports, required oral reading, church recitations, and graduate student seminar reports). McCroskey, having taught required public speaking courses for a period of nine years, and having subsequently researched their impact on communication apprehension (CA), concludes:

While required public speaking performance and training in public speaking have great value for people with moderate or low CA, for people with high CA such experiences are worthless at best, harmful in most instances, and deeply traumatic in many (p. 99).

Brooks and Platz (1968) offer support for McCroskey's conclusions. In their investigation of speech training classes, they found that although 75% of the students experienced a reduction from their initial level of speech anxiety, the remaining 25% reported an increased level of CA.

Although the public speaking class does not appear to be a viable method of helping the highly speech anxious, other treatment programs have been, and are being, developed in hopes of providing more effective and efficient means for the alleviation of this problem. The most extensively researched and most widely-applied treatment for speech anxiety has been systematic desensitization. Paul (1966) conducted a study comparing the relative efficacy of systematic desensitization and "insight-oriented psychotherapy" (DET). The desensitization treatment proved
to be the more effective, producing consistently greater reductions in cognitive, physiological, and motoric measures of speech anxiety. The insight-oriented treatment was found to be no more effective than the attention placebo condition included in the study. Paul and Shannon (1966) extended the original work of Lazarus (1961) on group desensitization, treating speech-anxious subjects in a group therapy setting which utilized both discussion and desensitization procedures. They compared the pre-post changes resulting from this group method with those obtained previously for similar subjects treated individually (Paul, 1966). They found the group and individual desensitization treatments to be comparable in their effectiveness. Although the subjects treated in the group setting received four more hours of therapy than those treated individually (9 as compared to 5 hours of treatment), the authors point out that the group procedure was nonetheless more efficient in terms of therapist time per client.

Subsequent research has continued to examine not only the efficacy of desensitization procedures, but also their efficiency in application to this widespread problem. McCroskey, Ralph, and Barrick (1970) demonstrated that systematic desensitization could be successfully administered by persons with limited psychological backgrounds who are trained in its use. McCroskey (1972) found systematic desensitization to be an effective treatment when administered on a large scale in the
classroom setting. Deffenbacher (1974) developed an 18-item standardized hierarchy for speech anxiety and evaluated its effectiveness in four systematic desensitization groups. This hierarchy proved to be effective, as measured by significant reductions in subjects' self-reported speech anxiety. Lohr and McManus (1975) developed a set of preprogrammed desensitization audio tapes which, when applied to individual speech-anxious students in the therapist's absence, proved to be comparable in effectiveness to live group desensitization. The apparent conclusion to be derived from the research noted above is that systematic desensitization is both an effective and efficient means of treating speech anxiety.

Various other treatment methods have also been applied to the problem under consideration. Aside from their use in systematic desensitization procedures, relaxation techniques have been employed solely in the treatment of speech anxiety. Goldfried and Trier (1974) compared the differential effectiveness of standard progressive relaxation, a self control variant of relaxation emphasizing its use as an active coping skill, and a group discussion treatment included to control for placebo factors. They found that within group changes on both speech anxiety and general anxiety measures consistently favored the self control relaxation condition. This self control variant, however, failed to produce significant differences above and beyond those obtained in either the standard relaxation or
Russell and Wise (1976) compared the relative efficacy of group cue-controlled relaxation and group systematic desensitization treatments. Also investigated in this study were the differential effects of professional versus paraprofessional counselors in implementing these procedures. The findings of this investigation support the efficacy of both treatment methods in producing significant reductions in self-report speech anxiety measures. There were no significant differences obtained between either the two treatment procedures or the professional versus paraprofessional conditions.

Various cognitive therapies have also been applied successfully in the treatment of speech anxiety. Karst and Traxler (1970) examined the efficacy of both fixed-role therapy (FRT) and rational-emotive therapy (RET) as group administered treatments for speech anxiety. FRT, originated by Kelly (1955), is based on a theory in which "constructive alternativism" is a central theme. In the study under consideration, subjects in the FRT condition were aided in the exploration of the roles they had adopted in public speaking and in the consideration of available alternative roles. The RET condition followed the basic procedural outline introduced by Ellis (1958). This entailed the discussion and challenge of the "basic irrational ideas" underlying the subjects' anxiety, followed by the
suggestions of more rational counterparts by the therapist.

The effectiveness of RET as a speech anxiety treatment has received further support in subsequent research (Trexler & Varst, 1972). Meichenbaum, Gilmore, and Fedoravicius (1971) compared the relative effectiveness of group systematic desensitization and a group insight treatment derived principally from Ellis's RET. The results indicated that these two treatment procedures produced comparable reductions in motoric and self-report measures.

Other treatment approaches have received limited exposure as treatments for speech anxiety, but also with favorable results. Included among these are "in vivo" techniques (Kirsh, Wolpin, & Knutson, 1975), the training of specific speaking skills (Wright, 1976), and numerous treatment-combination programs which have integrated the elements of two or more different approaches. These latter treatment programs have successfully combined such techniques as self-relaxation and rehearsal feedback (Sherman, Mulac, & McCann, 1974), anxiety-inhibiting statements and relaxation (Weissberg, 1975), skills training, relaxation, and self-control verbalizations (Fremouw & Harmatz, 1975), desensitization and RET procedures ("Cognitive Modification"; Weissberg, 1977), and cognitive restructuring and relaxation (Fremouw & Zitter, 1978).
McCroskey (1977), in his research summarization on communication anxiety, concludes that at present only systematic desensitization has been clearly demonstrated by numerous investigators to be an effective speech anxiety treatment. Although it is true that the other treatment methods have been as widely tested as the desensitization procedures, group insight (Weichenbaum et al., 1971), cue-controlled relaxation (Russell & Wise, 1976), and cognitive modification (Weissberg, 1977) were all found to be as effective in reducing speech anxiety in comparison treatment studies. Additionally, other treatment approaches which have received only limited attention to date, nonetheless appear quite promising.

Further research is needed not only with regard to those treatment methods noted above, but also with respect to the investigation of alternative approaches yet to be applied in this area. One such approach which has been suggested is the use of hypnosis. Barker, Cegala, Kibler, and Wahlers (1972), in their review of the research on hypnosis related to speech communication, conclude:

At the very least, hypnosis appears to have considerable potential for the reduction of speech anxiety and such systematic research is long over due (p. 35).

As will be revealed in the section to follow, their suggestions were yet to be acted upon.
Group Hypnotherapy Treatments

Much success has been reported in the literature with respect to individual hypnotherapy treatments. Within the individual therapy context, hypnosis has been effectively employed in the treatment of a wide variety of both medical and psychological problems. Although the success of this work has been amply represented in the literature, reports on the use of group hypnotherapy are noticeably sparse (Araoz, 1979; Perline, 1968). Nonetheless, those reports which have appeared in this area testify to the efficacy of such treatments in dealing with a broad range of problems. Group hypnotherapy has been used with favorable results in the treatment of enuresis (Miller, 1957), weight reduction (Glove, 1961; Mann, 1959), reading and learning disabilities (Illovsky, 1963; Illovsky & Fredman, 1976), free-anxiety tension (Peberdy, 1960), situation-specific anxiety (Devogue, 1975), smoking (Sanders, 1977), alcoholism (Scott, 1966), drug addiction (Ludwig, Lyle, & Miller, 1954), and schizophrenia (Ihalainen & Rosberg, 1976; Illovsky, 1962).

Numerous case studies have reported the application of hypnotherapy treatments to the alleviation of fears and anxieties. Deiker and Pollock (1975) utilized both hypnotic and desensitization procedures in the treatment of a bleach phobia. Deybour and Epstein (1977) reported the successful treatment of a flight-phobic patient through suggestive and
projective hypnotic techniques. Other phobic reactions treated successfully with hypnotic treatments include fears of injections (Perin, 1969; Daniels, 1976), birds (Scott, 1970), animals (Schneck, 1952), water (Rubin, 1972), and closed places (Hartland, 1976; Schneck, 1954).

In the area of anxiety reduction, Daniels (1976) integrated hypnotic and covert conditioning procedures for the reduction of preoperative apprehension. Mordey (1965) successfully reduced the stage fright of an opera singer utilizing a short-term hypnotherapy treatment. Naruse (1965) reported on the use of hypnotic techniques for the reduction of stage fright in champion athletes. Gibbons, Kilbourne, Saunders, and Castles (1970) introduced a new hypnotic technique called "Directed Experience" (DET) and compared its effectiveness with that of systematic desensitization in the treatment of test anxiety. They concluded that DET was the more effective and efficient treatment in that it produced greater reductions in self-reported test anxiety in less treatment hours. Gibbons (1973) has also presented a procedural outline for the use of DET to alleviate anxiety over public speaking, but again in an individual therapy context.

Reports on the systematic use of group hypnotherapy procedures for the reduction of fears and anxieties are almost totally nonexistent. Devoge (1975) described and reported on the use of group hypnotic procedures in the
treatment of situation-specific anxieties. The treatment group consisted of four female psychologists, including one who experienced anxiety whenever speaking in front of a large staff group. The treatment method employed involved interactional group psychotherapy under hypnosis, utilizing cognitive and affective restructuring techniques, coupled with self-hypnotic training to visual imagery cues.

Barker et al. (1972) purport group hypnotherapy to be a potentially effective and efficient speech anxiety treatment. They acknowledge the evidence in support of applying desensitization procedures to this problem, and describe the following advantages offered by systematic desensitization for the treatment of speech anxiety:

(1) The method is relatively easy to use, and one does not have to be a professional therapist to obtain success with systematic desensitization techniques. In some instances individuals may even employ desensitization techniques successfully at home with the aid of an instruction manual and a phonograph record designed to induce a relaxed state.

(2) One may employ systematic desensitization techniques with groups of individuals; consequently, one is not limited to treatment of one person at a time. This is a particularly important advantage in situations where limited space, time and personnel do not allow for individual therapy sessions with individuals in need of treatment.

(3) Wolpe's method has consistently proven to be an effective method for treating problems due to anxiety, and recently it has been shown to be successful in treating speech anxiety.

(4) The effects of systematic desensitization appear to be reasonably long lasting.

(5) Systematic desensitization sometimes produces
positive transfer effects. Several persons have reported that systematic desensitization was not only successful in reducing anxiety in situations for which they were treated, but it also helped to relieve anxiety experienced in other situations (pp. 32-33).

Rarker et al. note that the use of untrained personnel (advantage number 1 above) in hypnosis is not desirable, nor legal in many states. However, they suggest that the other advantages noted above would also be shared by a hypnotic method of speech anxiety reduction. Additionally, they point out that the space consuming and expensive equipment (reclining chairs) utilized in systematic desensitization is not required in hypnotic treatments. Given this, they suggest that relatively large numbers of subjects may be treated with hypnosis, utilizing tape recordings under the supervision of a therapist-hypnotist. No subsequent research has been reported indicating the use of such taped group hypnotherapy treatments for the alleviation of speech anxiety. In the present study, such a treatment was employed.

**Live versus Automated Treatment**

**Systematic desensitization.** There has been considerable controversy for several years concerning the relative importance of relationship factors versus technical procedures in therapy (DeVoge & Beck, 1978). Many behavioral researchers have espoused the viewpoint that the therapeutic relationship, particularly within the context of
systematic desensitization, is of secondary importance at best (Baker, 1969; Kirchener & Hogan, 1966; Lang, 1964; 1958; Lang, Lazovik, & Reynolds, 1965; Paul, 1969; Wolpe, 1952). An outgrowth of this controversial issue has been the appearance of numerous studies comparing the relative efficacy of live and automated desensitization treatments. This line of investigation is of particular concern to the present study in terms of its implications for treatment efficiency.

Krapfl & Nawas (1969) compared live versus automated desensitization procedures in the treatment of snake-phobic subjects. The results indicated that the two treatments were comparably effective, a finding replicated in a subsequent study by Lang, Melamed, and Hart (1970). Baker, Cohen, and Saunders (1973) compared the relative efficacy of therapist-directed (live) and self-directed (tape-recorded) desensitization in the treatment of acrophobia. Again, the automated treatment proved equally effective to the live therapist condition. Evans and Kellam (1973) obtained similar findings in the treatment of clinically phobic patients of three classification types: simple phobic, social phobic, and agoraphobic.

In the above-noted studies, the automated treatments allowed for subject-controlled termination of hierarchy scene presentations by the signaling of experienced anxiety. Nawas, Fisherman, and Pucel (1970) examined the necessity
for such subject control in an automated desensitization treatment for snake phobia. They compared two automated desensitization procedures: one which enabled subjects to control the presentation of scenes and one in which the timing of scene presentations was predetermined. The results showed these treatment procedures to be comparable in effectiveness.

Automated desensitization treatments have also been applied in group therapy settings, again with favorable results. Donner and Guernev (1969) developed a group desensitization treatment for test anxiety utilizing preprogrammed tapes. This treatment proved effective in producing significant improvement in subjects' G.P.A. and self reports of experienced anxiety; results which were retained after five months (Donner, 1970). Subsequent studies using test anxiety as the target behavior have also obtained significant positive results through the application of similar preprogrammed group treatments (Aponte & Aponte, 1971; Suinn, Edie, Nicolettie & Spinelli, 1973). In the present study, such a treatment was employed for the reduction of public speaking anxiety.

Hypnosis. Although the importance of relationship factors has also been the subject of investigation in hypnosis research, far fewer studies comparing live versus automated modes of presentation have appeared within this context. Nonetheless, those studies which have been
conducted in this area demonstrate the potential effectiveness of recorded hypnotic procedures.

Hoskovec, Svorad, and Lanc (1963) measured the relative effectiveness of tape-recorded versus spoken suggestions of body sway. Although the results of this investigation were somewhat equivocal, the authors concluded that recorded suggestions could be as effective as spoken ones. Barber and Calverley (1964) compared recorded and spoken suggestions with respect to their relative efficacy in eliciting the "hypnotic-like behaviors" comprising the Barber Suggestibility Scale (BSS; Barber & Calverley, 1953). The two modes of presentation produced equivalent objective and subjective scores, lending further support to the hypothesis of comparable effectiveness between recorded and spoken suggestions. Similar findings have also resulted from studies comparing live with videotaped induction procedures (Bear & Duff, 1975; Ulett, Akpinar & Itil, 1971, 1972).

Although the above-noted research supports the efficacy of automated hypnosis, those studies were limited to tests of initial hypnotic susceptibility. Extending this research, Paul and Trimble (1970) found live and recorded hypnotically suggested relaxation to be equally effective in reducing physiological arousal (heart rate, respiratory rate, tonus muscle tension, skin conductance) and inhibiting physiological response to stressful imagery. Tape-recorded
suggestions have also achieved favorable results in clinical applications of hypnosis, including the treatment of such varied problems as migraine headaches (Daniels, 1976), preoperative tension (Field, 1974), obesity (Glover, 1961), and schizophrenia (Ihalainen & Rosberg, 1976; Illovsky, 1962). To date, however, reports of systematic studies comparing the effectiveness of live versus recorded hypnosis in therapy are noticeably lacking. Those investigations which do address themselves to this issue are described below.

Illovsky (1962) reported on the combined use of group hypnosis and tranquilizers in the treatment of eighty hospitalized chronic schizophrenic patients. Six months into this 18-month study, Illovsky was compelled because of illness to continue the treatment using tape recordings of his voice. Based on discharge rates and various measures of improvement (e.g., cooperation on the ward, participation in activities, readiness for home visits), he concluded that the live and recorded hypnotic sessions were equally effective. To further test the efficacy of these tape-recorded suggestions, he treated more than 470 additional patients entirely by the automated treatment. Again, he could detect no difference between the improvement of these patients and those who had received hypnotherapy under live conditions.
In a recent study, Pederson, Scrimgeour, and Lefcoe (1979) compared the relative efficacy of two group counseling treatments for smoking: one which included a single session of live hypnosis and one in which the identical session was presented via videotape. At six months posttreatment, the live-hypnosis plus counseling group contained significantly more abstainers than the group receiving the videotaped hypnosis. Additionally, the live group had a significantly lower drop-out rate than the group in the automated condition. It must be noted, however, that the entire treatment entailed nine group sessions, only one of which involved the use of hypnosis.

The Present Investigation

As indicated by the research noted above, studies pertaining to the clinical applications of hypnosis are needed in several areas. First, additional research is warranted with respect to the use of hypnosis in group therapy settings. Second, and more specifically, the development and investigation of a group hypnotherapy treatment for the reduction of speech anxiety is still "long over due" (Barker et al., 1972). Finally, systematic studies are needed to compare the differential effectiveness of live versus automated hypnotic procedures in treatment.

In contrast, systematic desensitization has been explored by numerous investigators with respect to the areas noted above. The results of this research have been
overwhelmingly favorable, demonstrating not only the effectiveness but also the efficiency of this treatment method. In accordance with these considerations, the following study was designed with two main objectives: (1) to compare two preprogrammed group therapy treatments — systematic desensitization and "hypno-behavioral treatment" — for their relative efficacy in reducing public speaking anxiety; and (2) to examine the effectiveness of the above-noted treatments under both live and automated conditions of presentation.

Systematic desensitization has been chosen for inclusion in the present investigation in that, with respect to speech anxiety treatments, this method must be considered the "best available comparison" (O'Leary & Borkovec, 1978).
METHOD

Subjects

The Personal Report of Public Speaking Apprehension (PRPSA; McCroskey, 1972) was administered to undergraduate students in the introductory psychology and introductory speech communication courses (see Appendix A). Those students who scored 115 or above on the PRPSA (mean = 114.62), and expressed interest in participating in a speech anxiety reduction program, were invited to attend a pretreatment assessment meeting. At this meeting, students were given 3 minutes to prepare a 4-minute speech on one of the following two topics: (1) "What I did last summer," or (2) "My interests and hobbies." Half of the students were asked to speak on topic number 1, and half on topic number 2. (The assignment of topics was reversed for the posttreatment speech presentations.) Immediately before giving their speech, each student completed the Anxiety Differential (AD; Husek & Alexander, 1963). During their speech presentations, students were rated by two observers on a shortened form of the Timed Behavioral Checklist for Performance Anxiety (TBCL; Paul, 1966). Following their speech, each student completed the Personal Report of Confidence as a Speaker (PRCS; Paul, 1966).
Based on schedule availability and pretreatment scores, with preference given to those students scoring highest on the PRCS, 60 students were selected and formed the initial subject pool. Those students not selected were offered treatment at a future date.

Students forming the initial subject pool were informed of their rights as subjects in an experimental treatment program and asked to sign a voluntary participation and informed consent statement (see Appendix B). Additionally, subjects were asked to sign a therapy contract indicating their intent to remain in treatment throughout the program (see Appendix C).

All subjects attended a second pretreatment assessment meeting at which they were administered a modified version of the Harvard Group Scale of Hypnotic Susceptibility: Form A (HGSHS:A; Shor & Orne, 1962). The Harvard Group Scale of Hypnotic Susceptibility: Form A is a 12-item group adaptation of the Stanford Hypnotic Susceptibility Scale, Form A (Weitzenhoffer & Hilgard, 1959), arranged for self-scoring. This scale enables its user to obtain hypnotic susceptibility ratings on a large group of subjects at a single setting. In the present study, the 2 post-hypnotic suggestion items of this scale were deleted (see Appendix D). These items, unlike the remaining 10, require a subjective method of scoring. Subjects were rank-ordered according to their scores on the HGSHS:A and
divided into 12 stratified blocks of hypnotic susceptibility.

Following the pretreatment assessment, subjects were randomly distributed from stratified blocks to the five treatment and control conditions. A waiting list control group \( N = 12 \) served as the control condition. The four treatment conditions consisted of: (a) systematic desensitization, live \( N = 12 \), (b) systematic desensitization, automated \( N = 12 \), (c) hypno-behavioral treatment, live \( N = 12 \), and (d) hypno-behavioral treatment, automated \( N = 12 \).

**Dependent Measures**

**Self-report speech anxiety measures.** The Personal Report of Confidence as a Speaker, developed by Paul (1956), is a 30-item true-false scale which assesses the subjects' thoughts, feelings, and behaviors during their most recent speech (see Appendix E). Paul (1966) reported a 7-week test-retest correlation of .44 for his total contact sample of speech-anxious subjects \( N = 67 \). However, since this group contained both treated and nontreated subjects, the effects of treatment variables confound the relationship.

Korman, Weerts, Hastings, Melamed, and Lang (1974) administered the PRCS to 244 subjects (122 males and 122 females) in a population similar to that from which subjects in the present investigation were recruited (i.e.,
undergraduate students enrolled in psychology courses). They found this instrument to possess high internal consistency, with Kuder-Richardson Formula 20 values of .91 for males and .92 for females. Additionally, they report the PRCS distribution to be nearly normal, as indicated by coefficients of skewness and kurtosis (males: .08, n.s., & 2.19, n.s., respectively; females: .28, n.s., & 1.96, n.s., respectively). For males, the mean was reported to be 14.40, with a S.D. of 7.10; for females, the reported mean was 14.98, with a S.D. of 7.33.

The Anxiety Differential, developed by Husek and Alexander (1963), is an 18-item indirect measure of anxiety. This scale uses a semantic differential format for rating a series of words in terms of bipolar adjectives and provides a cognitive measure of anxiety (see Appendix F). The AD was designed to measure situationally-aroused anxiety. Its sensitivity in discriminating between anxious and nonanxious states, both within and between subject groups, has been well-documented (Alexander & Husek, 1962; Husek & Alexander, 1963). Paul (1966) reported a 7-week test-retest correlation of .54 with this instrument, but again this included both treated and untreated subjects. A 3-week test-retest correlation of .78 was reported for 47 nontreated socially anxious subjects (Borkovec, Stone, O'Brien, & Kaloupek, 1974). Regarding the administration of this instrument to subjects prior to a public speaking situation, no normative data have been reported in the
literature to date.

**Motoric speech anxiety measure.** The Timed Behavioral Checklist for Performance Anxiety, developed by Paul (1966), lists 20 observable manifestations of anxiety. In the present investigation, as in other studies (Kirsch et al., 1975; Trexler & Karst, 1972), the list of behaviors to be recorded were reduced to increase interrater reliability. The presence or absence of 11 (of the original 20) behaviors were recorded by two trained observers during successive 30-second time periods of the 4-minute speech presentations (see Appendix G). The mean number of these behaviors observed per fully-completed 30-second time period were recorded for each subject. The mean of the independent scores of the rating pair formed the dependent measure. The TBCL is based on a factor analytic study of anxiety signs (Clevenger & King, 1961). Paul (1966) reported a 7-week test-retest correlation of .37 for his total contact sample. Interrater reliability correlations for this instrument have typically ranged from .71 to .96 (Borkovec, Weerts, & Bernstein, 1977). In that an abbreviated version of the TBCL was employed in the present investigation, no normative data are available.

**Treatments**

All group treatment sessions took place in the same dimly-illuminated room. Each group met for a total of four and one-half hours in treatment, consisting of three weekly
90-minute sessions. Subjects missing regularly-scheduled sessions were rescheduled for make-up sessions held during the same week. Make-up sessions followed the identical procedure of the missed sessions and were administered in the appropriate presentation mode.

In all treatment conditions, the first session began with a description of the treatment procedures and rationale. At the conclusion of this session, subjects were asked to rate the described treatment on three 10-point credibility/expectancy-for-improvement scales (see Appendix H) derived from those presented by Borkovec and Nau (1972):

1. How logical does this treatment seem to you, as described at the beginning of this session?
2. How confident are you that this treatment will be successful in significantly reducing your fear of speaking before a group?
3. How confident would you be in recommending this treatment to a friend who was extremely anxious about making speeches?

A brief description of each treatment condition follows (see Appendices I & J for detailed descriptions).

(A) Systematic desensitization live (SD-L). Subjects in this condition received a modified version of the procedures developed by Donner and Guerney (1969) for use in their preprogrammed desensitization treatment.
During the first session, treatment was focused on training the subjects in deep muscle relaxation. Using an abbreviated version of the procedure described by Bernstein and Borkovec (1973), subjects were instructed to alternately tense and relax gross-muscle groups while focusing their attention on the feelings in these muscles. By moving progressively through the body and extremities, a deep state of relaxation was achieved. Once relaxed, subjects were asked to visualize a neutral scene (opening the door to and entering their place of dwelling) following the procedures described below for presentation of hierarchy scenes.

Desensitization proper was conducted during the second and third sessions. The Standardized Speech Anxiety Hierarchy, developed by Deffenbacher (1974), was used for the scene visualizations (see Appendix K). This 18-item hierarchy contains several additions and modifications of the hierarchy originally presented by Paul (1966). Following approximately 20 minutes of relaxation, presentation of scenes began. Subjects were instructed to visualize each scene as though they were actually experiencing the situation described, rather than viewing it from afar. They were further instructed to maintain their visualization of the scene until given the instruction to terminate the image.
Presentation of the hierarchy scenes followed the specific steps and time-sequencing described by Aponte and Aponte (1971). This procedure is a slightly modified form of that recommended by Donner and Guerney (1969) for use with preprogrammed desensitization treatments. Each scene in the hierarchy was presented six times for visualization; twice for 5 seconds, twice for 10 seconds, and twice for 20 seconds. The period of non-visualization following each presentation of a scene was 20 seconds.

The first ten hierarchy scenes were presented during the second treatment session. The remaining scenes were presented during the third and final session, following a repetition of scene 10.

At the conclusion of each treatment session, subjects were asked to rate their achieved level of relaxation and ability to visualize the presented scenes along two 10-point scales (see Appendices L & M). Subjects were instructed to practice the relaxation technique and neutral-scene visualization for at least 15 minutes each day during treatment. They were given a handout describing the muscle-groups and tensing instructions (see Appendix M).

(B) Systematic desensitization automated (SD-A). Subjects in this condition received the same treatment as given in the SD-L condition, however, treatment was administered via tapes in the therapist's absence. The groups were scheduled in such a way that the SD-L group
always met before the SD-A group. The therapist taped the live treatment sessions and these tapes were used for the automated group. A "naive" experimenter, introduced to the subjects as the therapist's assistant, was present during the treatment sessions. The experimenter was instructed to sit quietly throughout the sessions, to operate the tape recorder, and to silently model how to tense each muscle group during the progressive relaxation training. This procedure was designed to insure that the treatment received by the automated group would be identical to that of the live group, with the exceptions of mode of transmission and therapist's presence.

(C) Hypno-behavioral treatment, live (HT-L). Subjects in this condition received a combination of suggestive, projective, and imaginal techniques, following hypnotic induction and deepening procedures. Each treatment session included the components described below, listed in their respective order of presentation:

Hypnotic induction. The standard induction procedure of the HGSHS:A was followed. This is a group induction procedure which involves eye fixation and closure, along with suggestions of relaxation and sleep.

Deepening. The deepening procedures included fractionation, imaginal, and relaxation techniques, following the specific techniques and wording of suggestions described by Watkins (Note 1.). In the fractionation
procedure, the therapist counted aloud from 1 through 21. Subjects were instructed to "come up" slightly from their relaxed state upon hearing each even number, but with each odd number to "go down" even deeper than before.

The imaginal technique employed was a freedom from distraction scene -- Watkins' "The Summer Day." With the use of suggested images of lying on the grass on a warm, sunny day, feelings of relaxation were evoked. These feelings were then intensified by suggestions of warmth and heaviness moving progressively through the body.

This relaxed state was then paired with a self-produced cue word ("calm"), following a procedure similar to that first described by Paul (1966). The cue-word association was developed within the context of the imagined scene by instructing the subjects to focus attention on their breathing while silently repeating the word "calm" with each exhalation. The therapist suggested to the subjects that in the future they would be able to bring back these pleasant, relaxed feelings by subvocally saying the word "calm."

Competency instructions. This procedure was patterned after the "ego-strengthening" technique described by Hartland (1975). It entailed the presentation of positive suggestions for self-worth and effectiveness.
Group Directed Experience (GDE). This procedure was based on the "Directed Experience Hypnotic Technique" (DET), developed by Gibbons et al. (1973). DET is an imaginal technique which allows clients to experience previously anxiety-provoking situations under positive affective conditions. In DET, a deeply relaxed, hypnotized subject is slowly projected into a feared situation with suggestions that he will retain his present state of relaxation. The therapist then directs him through the previously anxiety-provoking activity, again with suggestions aimed at maintaining his relaxed state. In the present study, the described procedures for DET were modified to make the technique applicable for group administration in the automated mode.

Subjects were projected into the situation of standing in front of a classroom, about to give a speech. During this procedure, the therapist gave suggestions aimed at helping the subjects maintain their calm, relaxed state. The cue-word association and competency instructions were reinforced during the directed experience with suggestions such as those described below:

Before you begin your speech, you concentrate on your breathing and silently repeat the word "calm" with each exhalation. As you do so, you notice that you become more and more relaxed ... more and more at ease. Because you are relaxed, you feel more confident in your ability to handle the situation.
Subjects were then asked to silently give a brief speech. After completing their imagined speeches, subjects were returned through suggestion to the previous setting. A brief period of undisturbed relaxation ensued, followed by instructions for a second, similar directed experience. Following GDE, subjects were instructed to attend to general feelings of relaxation before arousal from hypnosis by counting up to five. It was suggested that at the count of five, subjects would open their eyes, feeling wide awake, alert, refreshed, and confident in their ability to overcome their speech anxiousness.

The Brief Stanford Scale, developed by Hilgard and Tart (1966), was used during each of these treatment sessions to obtain subjective measures of hypnotic depth. This scale entails having subjects respond immediately to the question, "State?" with a number from zero to three. Zero indicates that the subject feel wide awake; one indicates a borderline state, as in falling asleep at night; two indicates a mild hypnotic state; and three indicates a deep hypnotic state. For group administration purposes, subjects were instructed to signal the number which represented their "state" by holding up their right hand with the appropriate number of fingers extended. State reports were requested twice during each session: at the conclusion of the deepening procedures and in the interval between the two directed experiences.
At the conclusion of each treatment session, subjects were asked to rate their achieved level of relaxation and ability to visualize the presented scenes along 10-point scales identical to those administered to the systematic desensitization groups. Subjects were instructed to spend at least 15 minutes each day recreating "The Summer Day" scene (or a relaxing scene of choosing) and to continue strengthening the cue-word association within the context of this imagined scene. They were given a handout with the necessary procedural instructions (see Appendix D).

(D) Hypno-behavioral treatment, automated (HT-A). Subjects in this condition received the same treatment as given in the HT-L condition, however treatment was administered via tapes in the therapist's absence. As with the systematic desensitization groups, the hypno-behavioral treatment groups were scheduled such that the live group met prior to the automated group. The live treatment sessions were taped by the therapist and these tapes were used for the automated group. As in the SD-A condition, a "naive" experimenter was present during the HT-A group sessions to operate the tape recorder.

(E) Waiting list control (WLC). Subjects in this condition were told that more subjects had requested treatment than could be accommodated at present and offered treatment at a later date.
When contacted to arrange treatment, waiting list control subjects were told that a second speech presentation and readministration of the speech anxiety measures were necessary because of the time lag. Thus, they received the same pre-post assessments as the treatment subjects. This condition served to assess the extent of improvement resulting from (a) nonspecific therapeutic factors accruing from the environment, (b) "spontaneous remissions" (Goldstein, 1960, 1962), (c) assessment procedures, and (d) promise of future treatment.

Procedure

The pretreatment assessment and treatment procedures have been described in previous sections (see Subjects & Treatments). At the conclusion of the treatment sessions, all treatment and waiting list control subjects attended a posttreatment assessment meeting. The procedure of this meeting was identical to that of the initial pretreatment assessment meeting, with the exception of an additional posttreatment questionnaire administered to all treatment subjects following their completion of the PRCS (see Appendix P). This posttreatment questionnaire asked subjects to rate the treatment program in which they participated on three 10-point scales similar to the credibility/expectancy-for-improvement scales administered previously:
(1) How logical did this treatment program seem to you?

(2) How confident are you that this treatment has been successful in significantly reducing your fear of speaking before a group?

(3) How confident would you be in recommending this treatment to a friend who was extremely anxious about making speeches?

Additionally, subjects were asked to estimate the average amount of time they spent per day practicing the relaxation and visualization procedure.

Experimental Design

The study employed a 2 by 2 plus control by 12 by 2 linear model design (Walsh, Note 2). The first 2-level factor represents the treatment method employed (systematic desensitization versus hypno-behavioral treatment). The second 2-level factor represents the mode of presentation (live versus automated). The control factor represents the waiting list control condition. The 12-level factor represents the blocking on hypnotic susceptibility. The final 2-level factor represents the assessment period (pretreatment versus posttreatment).
RESULTS

As stated in the previous section, the 60 students comprising the initial subject pool were divided into 12 stratified blocks of hypnotic susceptibility (N = 5 in each). Of these 12 blocks, 8 remained intact for analysis; therefore, the following results are based on 40 subjects, equally divided among the 5 treatment and control conditions.

Preliminary analysis

With respect to the blocking measure noted above, an examination of the mean squares in the analyses of variance computed provide evidence attesting to the efficacy of this blocking procedure (see Tables 1 through 7).

One of the dependent measures, the TBCL, was scored by deriving the mean of two independent raters. The interrater reliability was determined by computing the Pearson product-moment correlation between the independent scores of the rating pair for each of the 40 subjects. The resulting correlations for the pre- and post-treatment speech presentations were identical at .95.
Main analyses

In the present investigation, treatment effectiveness was assessed by three measures of speech anxiety (PRCS, AD, & TBCL), each administered at both pre- and post-treatment to the total subject pool. To assess the degree of improvement among treatment subjects, and to determine the relative efficacy of treatment methods, presentation modes, and treatment-by-mode combinations, a 2 (treatment method) by 2 (mode of presentation) by 8 (blocks of hypnotic susceptibility) by 2 (assessment period) Ullrich-Pitz analysis of variance was computed on each of the dependent measures (see Tables 1 through 3). As assessed by each of these measures, treatment subjects evidenced an extremely significant reduction in public speaking anxiety (PRCS:F(1,7) = 274.62, p < .001; AD:F(1,7) = 51.77, p < .001; TBCL:F(1,7) = 20.79, p < .005).

On the PRCS and TBCL, there were no significant differences between treatment methods, presentation modes, or treatment-by-mode combinations; thus, indicating comparable effectiveness. On the AD, while neither treatment methods nor treatment-by-mode combinations differed significantly, the automated mode proved significantly more effective than the live condition (F(1,7) = 8.85, p < .05).
To compare treatment subjects with controls, two sets of analyses were computed. First, a series of t-tests, based upon pooled estimates of error, were computed on each dependent measure, comparing the overall mean of each treatment group with that of the WLC group (see Table 8). No significant differences emerged; therefore, those significant differences evidenced in the following series of linear model analyses may be attributed to differential pre-to-post changes.

A 2 (treatment method) by 2 (mode of presentation) plus control (WLC condition) by 8 (blocks of hypnotic susceptibility) by 2 (assessment period) linear model analysis was computed on each of the dependent measures (see Tables 9 & 10). The results indicate that the pooled treatment subjects improved significantly more than the control subjects, as measured by the PRCS \( F(4,15) = 6.32, p < .05 \) and the AD \( F(4,15) = 3.29, p < .05 \). On the TBCL, the pooled treatment subjects did not differ significantly from controls.

The comparisons between individual treatment groups and the WLC group revealed significant differences only as measured by the PRCS, with each treatment-by-mode combination demonstrating a significant improvement over controls with respect to this measure \( \text{ESD-L}: F(1,15) = 9.19, p < .01; \text{SD-A}: F(1,15) = 11.23, p < .005; \text{HT-L}: F(1,15) = 9.52, p < .01; \text{HT-A}: F(1,15) = 23.95, p < .001 \). On the AD,
subjects in the HT-A group approached significance in their improvement over controls \( F(1, 15) = 4.51, p < .06 \).

**Magnitude of effects.** Of the three dependent measures employed in the present study, sufficient psychometric data are available only on the PRCS to allow for a meaningful evaluation of the magnitude of treatment effects (see Dependent Measures). Based on the norms collected by Klorman et al. (1974), the pooled treatment subjects in the present study scored approximately 1.25 S.D. above the mean at pretest and .26 S.D. below the mean at posttest. In contrast, the control subjects scored approximately 1.19 and .83 S.D. above the mean, at pre- and post-test, respectively (these are conservative estimates based on the mean for Klorman et al.'s combined male-female sample and the larger S.D. for the female subjects).

As noted above, norms on the AD and TBCL are not available which would allow for an evaluation of the magnitude of treatment effects found with these measures. Given this limitation, the overall mean and estimate of the standard error of the mean for these instruments are herein provided. These statistics, derived from the pre- and post-test scores of the subject pool in the present investigation, are provided as an aid in evaluating the group means obtained on these measures (see Table 9). On the AD, the overall mean was 78.37, with an estimated standard error of the mean of 1.37. On the TBCL, the
overall mean and estimated standard error of the mean were 2.21 and .09, respectively.

**Auxiliary Analyses**

A series of 2 (treatment method) by 2 (mode of presentation) by 8 (blocks of hypnotic susceptibility) Ullrich-Pitz analyses of variance were computed on the relaxation, visualization, time-spent-practicing, credibility/expectancy-for-improvement, and post-treatment questionnaire measures (see Tables 4 through 6). On the relaxation, visualization, and time-spent-practicing measures, there were no significant differences, indicating the attainment of comparable levels between groups on these factors.

For each of the three rating scales comprising the credibility/expectancy-for-improvement measure, a separate analysis was computed. Only on the third scale did a significant difference emerge, this pertaining to the comparison of treatment-by-mode combinations $F(1, 7) = 5.84$, $p < .051$. An examination of the group means on this scale indicate that, compared to the other treatment groups, the SD-A group reported that they would be significantly less confident in recommending their described treatment to a speech anxious friend.
A separate analysis was also computed for each of the component rating scales of the post-treatment questionnaire. These scales are identical to those comprising the credibility/expectancy-for-improvement measure, excepting minor modifications for applicability at post-treatment. Treatment methods were found to differ significantly on scale 1 \( F(1,7) = 5.59, \ p < .05 \) and scale 2 \( F(1,7) = 39.96, \ p < .001 \), with higher ratings in both instances given by subjects in the HT groups. That is, compared to subjects in the SD groups, HT subjects rated their treatment program as being significantly more logical, and expressed an extremely greater degree of confidence in their treatment as having been successful in reducing their public speaking anxiety. No other significant differences emerged with respect to this measure.

One final analysis was computed, pertaining only to subjects in the HT groups -- a 2 (mode of presentation) by 8 (blocks of hypnotic susceptibility) Ullrich-Pitz analysis of variance on the subjective measure of hypnotic depth (Brief Stanford Scale; see Table 7). As assessed by this measure, the live and automated HT groups attained comparable levels of hypnotic depth during the treatment sessions.
DISCUSSION

One of the primary objectives of the present investigation was to compare systematic desensitization and hypno-behavioral treatment for their relative efficacy in reducing public speaking anxiety. The results indicate these treatment methods to be comparably effective, as assessed both by self-report and motoric indices.

Relative to the waiting list control group, the treatment subjects as a whole evidenced a significant reduction in self-reported speech anxiety. While treatment subjects also demonstrated a significant reduction in motoric anxiety responses, they did not differ significantly from controls on this measure (i.e., TBCL).

The demonstration that systematic desensitization is an effective treatment for the alleviation of speech anxiety only adds further support to the findings of numerous other investigators (Lohr & McManus, 1975; McCroskey, 1972; McCroskey et al., 1970; Weichenbaum et al., 1971; Paul, 1956; Paul & Shannon, 1966; Russell & Wise, 1976; Weissberg, 1977). The present study, however, extends the research on systematic desensitization pertaining more specifically to group administration in a preprogrammed format. Previous studies have demonstrated such preprogrammed group desensitization treatments to be effective in the treatment of test anxiety (Aponte & Aponte,
This investigation extends those same findings of efficacy to a new target behavior — public speaking anxiety.

The demonstrated effectiveness of hypno-behavioral treatment is perhaps a more significant finding in terms of its expansion of previous research. First, it adds to the rather sparse literature reporting on the use of hypnosis in group therapy settings. Second, it testifies to the development and application of a group hypnotherapy treatment for the alleviation of public speaking anxiety. Barker et al. (1972) had purported group hypnotherapy to be a potentially effective and efficient method for the treatment of speech anxiety, recommending systematic research be implemented in this area. Nonetheless, no such investigations have appeared in the literature to date. The findings of the present study affirm the expectations of Barker et al., testifying to the efficacy of this treatment method in the alleviation of speech anxiety.

Although an attention placebo condition was not included in the present study to control for "nonspecific" therapy effects (i.e., therapist contact, attention factors, & expectancy effects), there is indirect evidence attesting to both the presence and efficacy of "active" ingredients in hypno-behavioral treatment. This newly-developed treatment program proved equal in effectiveness to the "best available
comparison" (O'Leary & Borkovec, 1978) -- systematic desensitization. Moreover, previous research has demonstrated systematic desensitization to be superior to attention placebo conditions in the reduction of all response channels of speech anxiety (Paul, 1966; Meichenbaum et al., 1971).

Warranting further consideration is the finding of this investigation that treatment subjects improved significantly more than controls as assessed by self-report, but not motoric, measures. An extensive body of research bears upon this issue. Borkovec et al. (1977) reviewed the literature pertaining to the assessment of anxiety in general, concluding that cognitive, motoric, and physiological responses reflect separate-but-interacting anxiety channels. In the more specific area of public speaking anxiety or "stage fright," Clevenger interpreted the relevant research to strongly suggest that "empirical stage fright" and "observed stage fright" operate with only moderate interdependence during the course of a public speech.

Given the multidimensional nature of the anxiety construct (as indicated above), two factors are offered as possible contributors to the finding under consideration. First, the treatment procedures employed, beyond those included in the control condition, may be effective in impacting the cognitive, but not the motoric, anxiety channel. Differential effectiveness of this order was found
by Weissberg (1977) in his employment of desensitization procedures to speech-anxious subjects.

A second possible contributing factor pertains to the subject selection procedure. Subjects in this study were both recruited and selected on the basis of scores obtained on self-report measures only (i.e., PRPSA & PRCS). As Borkovec et al. (1977) point out, "A person who is anxious in relation to a particular stimulus situation may display strong reactions in only one or two channels (e.g., in self-report but not in overt behavior or physiological activity)" (p. 369). Subjects in the present study did not, in fact, uniformly display strong motoric reactions to the initial test speech. This is reflected in the high degree of variability obtained on the motoric measure (i.e., TBCL; see Table 9). Therefore, the finding under consideration may reflect more upon a subject, as opposed to a treatment variable -- namely, that the subjects selected for inclusion in this study were rather heterogeneous in terms of their motoric responses to the speaking situation.

The results of several ancillary measures also bear upon this study’s first main objective. As assessed by the measures employed, the SD and IT groups attained comparable levels of relaxation and visualization during the treatment sessions. Additionally, they reported spending equivalent durations of time in practicing the relaxation and visualization techniques.
Significant differences between treatment methods did emerge, however, regarding subjects' ratings of treatment credibility and improvement expectancy. Although systematic desensitization and hypno-behavioral treatment obtained equivalent initial ratings on these dimensions, subjects' posttreatment ratings favored the latter treatment method. Given the finding, based upon the dependent measures, of comparable effectiveness between treatment methods, the fact that HT subjects expressed greater confidence in having improved from treatment warrants further consideration.

Borkovec and Nau (1972) point out that disparities in credibility or face validity between comparison groups may result in differential improvement expectancies. Similarly, they posit that expectancy differences may contribute to outcome differences. In that higher posttreatment ratings of logicality were given to the HT treatment program, the finding under consideration may reflect this disparate face validity between groups.

Relevant to the issue of treatment efficacy is a technical problem which arose in this study and must here be addressed. Treatment sessions were conducted in an un-air conditioned room and some subjects complained of having difficulties in relaxing due to its excessive warmth. Given the importance of relaxation in the procedures of both treatment methods, and in that the complaints received were consistent across groups (both in their nature and
frequency), it is speculated that the groups were similarly affected. Although the impact of this problem on the efficacy of the treatments is unknown, it would seem likely that its effect was adverse.

A second main objective of this investigation was to examine systematic desensitization and hypno-behavioral treatment under both live and automated conditions of presentation. The results indicate the automated condition of presentation to be as effective as the live mode for both treatment methods. In fact, as assessed by one of the self-report measures (i.e., AD), the automated mode was demonstrated to be significantly superior.

Again, the demonstration of comparable effectiveness between live and automated presentations of systematic desensitization serves mainly to confirm the findings of numerous other researchers (Baker et al., 1973; Evans & Kellam, 1973; Krapfl & Nawas, 1969; Lang et al., 1970). In contrast, the present study represents perhaps the most systematic investigation of live versus recorded hypnotic procedures in treatment. Previous studies reporting on this issue have been either anecdotal in nature (Illovsky, 1962) or compared treatments in which hypnotic procedures played only a minor role (Pederson et al., 1979). Therefore, the finding of comparable efficacy between the live and hypnotic procedures employed in this study is quite significant.
The above-noted finding contrasts with the results found by Pederson et al. (1979) in their comparative study of two smoking treatments -- one including a live hypnotic session and the other receiving the identical session in the automated mode. The live-hypnosis group proved to be the significantly more effective, as measured by number of obstainers at six months posttreatment. Of note, however, is that the treatment groups in that study participated in a total of nine treatment sessions, only one of which involved the use of hypnosis. In that hypnotic procedures were included in each of the HT sessions in the present investigation, this study must be considered a more thorough examination of the issue.

A related finding of this investigation is that the live and automated HT groups attained comparable levels of hypnotic depth during the treatment sessions (as assessed by the Brief Stanford Scale). To date, no reports have appeared in the literature examining the relationship between subjects' reports of hypnotic depth and mode of procedural presentation. Although previous research has compared live and automated presentations of initial susceptibility tests (Barber & Calverley, 1963; Bear & Duff, 1975; Hoskovec et al., 1963; "lett et al., 1971 & 1972), "hypnotic depth" and "hypnotic susceptibility" are not equivalent dimensions, though sometimes confused (Tart, 1977). Therefore, the finding noted above is significant in that it addresses an area of research previously unexplored.
Regarding the results pertaining to the second main objective of this study (described above), caution must be taken in the interpretation of these findings. DeVogue and Beck (1978) point out the temptation to conclude from such evidence that relationship factors play no significant role in the treatments investigated. They refer to a "host of variables" involved in the relationship between a client and therapist and conclude:

Studies ... which manipulate relationship factors only in gross ways, shed little light on specific factors including therapist-client characteristics and interaction patterns that may have an influence on the outcomes achieved ... (p. 230).

In review, two issues pertaining to the findings of this study are apparent in their need for further clarification. First, the extent to which the excessive warmth of the therapy room affected subjects' response to treatment can only be speculated. A replication of this study under more suitable environmental conditions would provide clarification on this issue.

Second, the efficacy of the employed treatment procedures in reducing motoric responses of speech anxiety was left somewhat in doubt. Clarification on this point may be attained through the conduction of a similar study in which the basis for subject selection includes the display of strong motoric reactions to the initial test speech. Moreover, the inclusion of a physiological measure to assess the third component of the anxiety response would provide a more thorough evaluation of overall treatment effectiveness.
Taken collectively, the results generally indicate hypno-behavioral treatment to be a viable alternative to systematic desensitization as an effective and efficient method for reducing public speaking anxiety. The comparability of effects found between these treatment methods is perhaps not surprising given their procedural similarities. Both involve the use of relaxation procedures, followed by the visualization of scenes related to public speaking. Moreover, the relaxation techniques employed in both treatment methods were presented to the subjects as a skill to be developed and actively employed outside of the treatment sessions. Anecdotally, several subjects (across treatment groups) reported their ability to effectively employ the relaxation procedures in situations unrelated to public speaking.

Given the finding of comparable efficacy between treatment methods, a consideration of the advantages and disadvantages afforded by each is warranted. Barker et al. (1972) outlined those advantages offered by systematic desensitization (over other treatment methods) which would also be shared by a hypnotic method of speech anxiety reduction. These shared advantages have been described in a previous section and, therefore, will not be reiterated here (see pp. 10-11). The advantages and disadvantages disparate between these treatment methods are briefly described below.
Consideration will first be given to those factors which favor systematic desensitization. First, this treatment method may be employed in the absence of a professional therapist. Although the results of the present study would suggest this to be an advantage shared by hypno-behavioral treatment, the use of untrained personnel in hypnosis is not desirable, nor legal in many states (Barker et al., 1972). A second factor favoring systematic desensitization is that a considerable body of research attests to the efficacy of this treatment method in reducing public speaking anxiety. In comparisons with control conditions, this treatment method has been found to be superior in terms of its impact on all response channels of speech anxiety (Paul, 1966). In contrast, the evidence attesting to the efficacy of hypno-behavioral treatment is limited to that provided in the present investigation and obtains only with respect to the cognitive channel of response. As previously pointed out, further research is needed to provide a more thorough evaluation of this treatment's overall effectiveness.

Factors may also be cited which favor hypno-behavioral treatment. First, the application of systematic desensitization on a large scale is restricted by the availability of special seating equipment (allowing subjects to recline) or, less ideally, clear floor space (enabling subjects to lie down). Hypno-behavioral treatment is not subject to these restrictions; thus, it may be administered
on a large scale in a regular classroom setting. Although McCroskey (1972) reported on the administration of systematic desensitization in a classroom setting, he noted the prerequisite of purchasing special seating equipment in "tooling-up" for the program. Second, although systematic desensitization and hypno-behavioral treatment proved comparably effective in terms of the dependent measures employed, posttreatment subject ratings of treatment credibility and confidence in improvement favored the latter treatment method.

As indicated above, neither treatment method can be considered to be clearly superior in terms of the advantages it affords. The selection of either method for application in a given treatment program may depend upon such factors as the personnel and equipment available, as well as the findings of future research.
A review of the relevant literature indicates that studies pertaining to the clinical application of hypnosis are needed in several areas. First, additional research is warranted with respect to the use of hypnosis in group therapy settings. Second, and more specifically, the development and investigation of a group hypnotherapy treatment for the reduction of speech anxiety is "long overdue" (Barker et al., 1972). Finally, systematic studies are needed to compare the differential effectiveness of live versus automated procedures in treatment.

In contrast, systematic desensitization has been explored by numerous investigators with respect to the areas noted above. The results of this research has been overwhelmingly favorable and, with respect to speech anxiety treatments, this method must be considered the "best available comparison" (O'Leary & Borkovec, 1978). In accordance with these considerations, the present study was designed with two main objectives: (a) to compare two preprogrammed treatments -- systematic desensitization and "hypnobehavioral treatment" -- for their relative efficacy in reducing public speaking anxiety; and (b) to examine the effectiveness of the above-noted treatments under both live and automated conditions of presentation.
Sixty speech anxious subjects were randomly distributed from stratified blocks of hypnotic susceptibility to five treatment and control conditions (N = 12 in each): (a) systematic desensitization, live (SD-L); (b) systematic desensitization, automated (SD-A); (c) hypno-behavioral treatment, live (HT-L); (d) hypno-behavioral treatment, automated (HT-A); and (e) waiting list control (WLC). All treatment groups met for three weekly 90-minute sessions. Subjects in the SD groups received a modified version of the procedures developed by Donner and Guerney (1969) for use in their preprogrammed desensitization treatment. Subjects in the HT groups received a combination of suggestive, projective, and imaginal techniques, following hypnotic induction and deepening procedures. For both treatment methods, subjects in the automated group were administered treatment via audiotapes (of the live sessions) in the therapist's absence.

Treatment effectiveness was assessed by three measures of speech anxiety: (a) the Personal Report of Confidence as a Speaker (PPCS; Paul, 1966); (b) the Anxiety Differential (AD; Husek & Alexander, 1963); and (c) an abbreviated version of the Timed Behavioral Checklist for Performance Anxiety (TBCL; Paul, 1966). Each of the dependent measures was administered to all treatment and control subjects, at both pre- and post-treatment. Several ancillary measures were also included in this study to assess comparability between groups on numerous treatment related dimensions.
Of the initial twelve blocks of hypnotic susceptibility, eight remained intact for analysis; therefore, the results are based on 40 subjects, equally divided among the five conditions.

The results indicate systematic desensitization and hypno-behavioral treatment to be comparably effective in reducing public speaking anxiety. Additionally, the automated mode of presentation proved to be as effective as the live mode for both treatment methods. In fact, as assessed by one of the self-report measures (i.e., AP), the automated mode was demonstrated to be significantly superior.

Relative to the WLC group, the treatment subjects as a whole evidenced a significant reduction in self-reported speech anxiety. While treatment subjects also demonstrated a significant improvement on the behavioral motoric measure (i.e., TBCL), they did not show differential effectiveness over the WLC condition.

Compared to subjects in the SD groups, HT subjects retrospectively rated their treatment program as being significantly more logical. Additionally, they expressed an extremely greater degree of confidence in having reduced their public speaking anxiety as a result of their participation in treatment.
The findings of this study pertaining to systematic desensitization serve generally to confirm the findings of numerous other investigators. In contrast, the present study offers information in several areas pertaining to the clinical applications of hypnosis which have been minimally, if at all, explored. Taken collectively, the results generally indicate "hypno-behavioral treatment" to be a viable alternative to systematic desensitization as an effective and efficient method for reducing public speaking anxiety.
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APPENDIX A

NAME__________________________  TELEPHONE NUMBER__________________________

PERSONAL REPORT OF PUBLIC SPEAKING APPREHENSION (PRPSA)

This instrument is composed of 34 statements concerning 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.

1. While preparing for giving a speech I feel tense and nervous.
2. I feel tense when I see the words "speech" and "public speech" on a course outline when studying.
3. My thoughts become confused and jumbled when I am giving a speech.
4. Right after giving a speech I feel that I have had a pleasant experience.
5. I get anxious when I think about a speech coming up.
6. I have no fear of giving a speech.
7. Although I am nervous just before starting a speech, I soon settle down after starting and feel calm and comfortable.
8. I look forward to giving a speech.
9. When the instructor announces a speaking assignment in class I can feel myself getting tense.
10. My hands tremble when I am giving a speech.
11. I feel relaxed while giving a speech.
12. I enjoy preparing a speech.
13. I am in constant fear of forgetting what I prepared to say.
14. I get anxious if someone asks me something about my topic that I do not know.
15. I face the prospect of giving a speech with confidence.
16. I feel that I am in complete possession of myself while giving a speech.
17. My mind is clear when giving a speech.
18. I do not dread giving a speech.
19. I perspire just before starting a speech.
20. My heart beats very fast as I start a speech.
21. I experience considerable anxiety while sitting in the room just before my speech starts.
22. Certain parts of my body feel very tense and rigid while giving a speech.
23. Realizing that only a little time remains in a speech makes me very tense and anxious.
24. While giving a speech I know I can control my feelings of tension and stress.
25. I breathe faster just before starting a speech.
26. I feel comfortable and relaxed in the hour or so just before giving a speech.
27. I do poorer on speeches because I am anxious.
28. I feel anxious when the teacher announces the date of a speaking assignment.
29. When I make a mistake while giving a speech, I find it hard to concentrate on the parts that follow.
30. During an important speech I experience a feeling of helplessness building up inside me.
31. I have trouble falling asleep the night before a speech.
32. My heart beats very fast while I present my speech.
33. I feel anxious while waiting to give my speech.
34. While giving a speech I get so nervous I forget facts I really know.

Would you be willing to participate in a brief speech anxiety treatment program?  (Yes)  (No)
I hereby agree to take part in an experimental treatment program being coordinated by Mr. Basil Anton through the Clinical Psychology Center. I understand that this treatment program has been approved by both the UM Institutional Review Board and a committee of faculty members at the University of Montana. I further understand that I may contact Mr. Anton should I have any questions concerning the treatment procedures.

I understand that I will be required to make short speech presentations in order to determine the level of my speech anxiety, and that I will be asked to imagine scenes related to making speeches during the treatment sessions. I further understand that the actual and imagined speeches may pose some discomfort to me, but that the treatment program has been designed to help alleviate this discomfort and reduce my fears of speaking before a group.

I understand that the treatment will include the use of hypnotic procedures. I further understand that I may discontinue my participation in this treatment program at any time.

(Please sign above)

__________________________
Basil Anton,
Treatment Coordinator

In the event physical injury results from bio-medical or behavioral research the human subject should individually seek appropriate medical treatment and shall be entitled to reimbursement or compensation consistent with the self insurance program for Comprehensive General Liability established by the Department of Administration under authority of Title 82, Chapter 43, RCW 1947 Section 82-4325. In the event of a claim for such physical injury, further information may be obtained from the University Legal Counsel.
APPENDIX C

Treatment Contract

I hereby agree to take part in a speech anxiety reduction program being coordinated by Mr. Basil Anton through the Clinical Psychology Center. I understand that this program will include two pretreatment assessment meetings, three treatment sessions, and one posttreatment meeting. I further understand the importance of attending all of the scheduled assessment and treatment meetings, and I hereby agree to do so.

I understand that I may contact Mr. Anton should I have any questions concerning the treatment program.

---------------------------------
(Please sign above)

---------------------------------
Basil Anton,
Treatment Coordinator

---------------------------------
Date
APPENDIX D

RESPONSE BOOKLET

GROUP SCALE
OF
HYPNOTIC SUSCEPTIBILITY

PLEASE SUPPLY THE INFORMATION REQUESTED BELOW

NAME:_________________________ DATE:________________

AGE:_______ SEX:_______ CLASS:________________________

PRESENT ADDRESS:____________________________________

PHONE:____________________

Have you ever been hypnotized? Circle: Yes No
If so, please cite the circumstances and describe your experiences.

Would you be interested in participating in any further research involving hypnosis?
( ) YES ( ) NO

DO NOT OPEN THIS BOOKLET
until the examiner specifically instructs you to do so
SECTION ON OBJECTIVE, OUTWARD RESPONSES

Listed below in chronological order are the ten specific happenings which were suggested to you during the standard hypnotic procedure. We wish you to estimate whether or not you objectively responded to these ten suggestions, that is, whether or not an onlooker would have observed that you did or did not make certain definite responses by certain specific, predefined criteria. In this section we are thus interested in your estimates of your outward behavior and not in what your inner, subjective experience of it was like. Later on you will be given an opportunity to describe your inner, subjective experience, but in this section refer only to the outward behavioral responses irrespective of what the experience may have been like subjectively.

It is understood that your estimates may in some cases not be as accurate as you might wish them to be and that you might even have to guess. But we want you to make whatever you feel to be your best estimates regardless.

Beneath a description of each of the ten suggestions are sets of two responses, labeled A and B. Please circle either A or B for each question, whichever you judge to be the more accurate. Please answer every question. Failure to give a definite answer to every question may lead to disqualification of your record.

HEAD FALLING

You were first told to sit up straight in your chair for 30 seconds and then to think of your head falling forward. Would you estimate that an onlooker would have observed that your head fell forward at least two inches during the time you were thinking about it happening?

Circle one: A. My head fell forward at least two inches.

B. My head fell forward less than two inches.
EYE CLOSURE

You were next told to rest your hands in your lap and pick out a spot on either hand as a target and concentrate on it. You were then told that your eyelids were becoming tired and heavy. Would you estimate that an onlooker would have observed that your eyelids had closed (before the time you were told to close them deliberately)?

Circle one: A. My eyelids had closed by then.

HAND LOWERING (LEFT HAND)

You were next told to extend your left arm straight out and feel it becoming heavy as though a weight were pulling the hand and arm down. Would you estimate that an onlooker would have observed that your hand lowered at least six inches (before the time you were told to let your hand down deliberately)?

Circle one: A. My hand had lowered at least six inches by then.

B. My hand had lowered less than six inches by then.

ARM IMMOBILIZATION (RIGHT ARM)

You were next told how heavy your right hand and arm felt and then told to try to lift your hand up. Would you estimate that an onlooker would have observed that you did not lift your hand and arm up at least one inch (before you were told to stop trying)?

Circle one: A. I did not lift my hand and arm at least one inch by then.

B. I did lift my hand and arm an inch or more by then.

CONTINUE ON NEXT PAGE
FINGER LOCK

You were next told to interlock your fingers, told how your fingers would become tightly interlocked, and then told to try to take your hands apart. Would you estimate that an onlooker would have observed that your fingers were incompletely separated (before you were told to stop trying to take them apart)?

Circle one:  A. My fingers were still incompletely separated by then.

B. My fingers had completely separated by then.

ARM RIGIDITY (LEFT)

You were next told to extend your left arm straight out and make a fist, told to notice it becoming stiff, and then told to try to bend it. Would you estimate that an onlooker would have observed that there was less than two inches of arm bending (before you were told to stop trying)?

Circle one:  A. My arm was bent less than two inches by then.

B. My arm was bent two or more inches by then.

MOVING HANDS TOGETHER

You were next told to hold your hands out in front of you about a foot apart and then told to imagine a force pulling your hands together. Would you estimate that an onlooker would have observed that your hands were not over six inches apart (before you were told to return your hands to their resting position)?

Circle one:  A. My hands were not more than six inches apart by then.

B. My hands were still more than six inches apart by then.
COMMUNICATION INHIBITION

You were next told to think how hard it might be to shake your head to indicate "no", and then told to try. Would you estimate that an onlooker would have observed you to make a recognizable shake of the head "no"? (that is, before you were told to stop trying.)

Circle one: A. I did not recognizably shake my head "no".
   B. I did recognizably shake my head "no".

EXPERIENCING A FLY

You were next told to become aware of the buzzing of a fly which was said to become annoying, and then you were told to shoo it away. Would you estimate that an onlooker would have observed you make any grimacing, any movement, any outward acknowledgement of an effect (regardless of what it was like subjectively)?

Circle one: A. I did make some outward acknowledgement.
   B. I did not make any outward acknowledgement.

EYE CATAPLEPSY

You were next told that your eyelids were so tightly closed that you could not open them, and then you were told to try to do so. Would you estimate that an onlooker would have observed that your eyes remained closed (before you were told to stop trying)?

Circle one: A. My eyes remained closed.
   B. My eyes had opened.

CONTINUE ON NEXT PAGE
SECTION ON INNER, SUBJECTIVE EXPERIENCES

Regarding the suggestion of EXPERIENCING A FLY -- how real was it to you? How vividly did you hear and feel it? Did you really believe at the time that it was there? Was there any doubt about its reality?

Regarding the two suggestions of HAND LOWERING (LEFT) AND HANDS MOVING TOGETHER -- was it subjectively convincing each time that the effect was happening entirely by itself? Was there any feeling either time that you were helping it along?

On the remainder of this page please describe any other of your inner, subjective experiences during the procedure which you feel to be of interest.

THANK YOU FOR YOUR COOPERATION
APPENDIX E

NAME________________________

PERSONAL REPORT OF CONFIDENCE AS A SPEAKER (PRCS)

This instrument is composed of 30 items regarding your feelings of confidence as a speaker. After each question there is a "true" and a "false." Try to decide whether "true" or "false" most represents your feelings associated with your most recent speech, then put a circle around the "true" or "false." Work quickly and don't spend much time on any one question. We want your first impression on this questionnaire. Now go ahead, work quickly, and remember to answer every question.

1. I look forward to an opportunity to speak in public. T F
2. My hands tremble when I try to handle objects on the platform. T F
3. I am in constant fear of forgetting my speech. T F
4. Audiences seem friendly when I address them. T F
5. While preparing a speech I am in a constant state of anxiety. T F
6. At the conclusion of a speech I feel that I have had a pleasant experience. T F
7. I dislike to use my body and voice expressively. T F
8. My thoughts become confused and jumbled when I speak before an audience. T F
9. I have no fear of facing an audience. T F
10. Although I am nervous just before getting up I soon forget my fears and enjoy the experience. T F
11. I face the prospect of making a speech with complete confidence. T F
12. I feel that I am in complete possession of myself while speaking. T F
13. I prefer to have notes on the platform in case I forget my speech. T F
14. I like to observe the reactions of my audience to my speech. T F
15. Although I talk fluently with friends I am at a loss for words on the platform. T F
16. I feel relaxed and comfortable while speaking. T F
17. Although I do not enjoy speaking in public I do not particularly dread it. T F
18. I always avoid speaking in public if possible. T F
19. The faces of my audience are blurred when I look at them. T F
20. I feel disgusted with myself after trying to address a group of people. T F
21. I enjoy preparing a talk. T F
22. My mind is clear when I face an audience. T F
23. I am fairly fluent. T F
24. I perspire and tremble just before getting up to speak. T F
25. My posture feels strained and unnatural. T F
26. I am fearful and tense all the while I am speaking before a group of people. T F
27. I find the prospect of speaking mildly pleasant. T F
28. It is difficult for me to calmly search my mind for the right words to express my thoughts. T F
29. I am terrified at the thought of speaking before a group of people. T F
30. I have a feeling of alertness in facing an audience. T F
NAME___________________________

Provided below is a series of words, each followed by opposite adjectives separated by a 7-point scale. Please mark an "X" along each of these scales to indicate your feelings at the present time.

<table>
<thead>
<tr>
<th>FINGERS: straight</th>
<th>twisted</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME: helpess</td>
<td>secure</td>
</tr>
<tr>
<td>BREATHING: tight</td>
<td>loose</td>
</tr>
<tr>
<td>SCREW: strong</td>
<td>weak</td>
</tr>
<tr>
<td>HANDS: wet</td>
<td>dry</td>
</tr>
<tr>
<td>TODAY: loose</td>
<td>tight</td>
</tr>
<tr>
<td>ME: frightened</td>
<td>fearless</td>
</tr>
<tr>
<td>GERMS: deep</td>
<td>shallow</td>
</tr>
<tr>
<td>HANDS: good</td>
<td>bad</td>
</tr>
<tr>
<td>BREATHING: careful</td>
<td>carefree</td>
</tr>
<tr>
<td>FINGERS: stiff</td>
<td>relaxed</td>
</tr>
<tr>
<td>ME: calm</td>
<td>jittery</td>
</tr>
<tr>
<td>HANDS: tight</td>
<td>loose</td>
</tr>
<tr>
<td>BREATHING: hot</td>
<td>cold</td>
</tr>
<tr>
<td>SCREW: loose</td>
<td>tight</td>
</tr>
<tr>
<td>ME: carefree</td>
<td>worried</td>
</tr>
<tr>
<td>ANXIETY: clear</td>
<td>hazy</td>
</tr>
<tr>
<td>FINGERS: loose</td>
<td>tight</td>
</tr>
</tbody>
</table>
## APPENDIX G

### NAME ________________________ RATER ________________________

### SPEECH TOPIC ________________________

### TIMED BEHAVIOR CHECKLIST FOR PERFORMANCE ANXIETY

<table>
<thead>
<tr>
<th>Behavior Observed</th>
<th>Time Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Shuffles feet</td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>2. Extraneous arm movement</td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>3. Hands restrained</td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>4. Hand tremors</td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>5. No eye contact</td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>6. Face &quot;deadpan&quot;</td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>7. Moistens lips</td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>8. Swallows</td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>9. Clears throat</td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>10. Voice quivers</td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>11. Speech blocks or quivers</td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
</tbody>
</table>
APPENDIX H

NAME__________________________

Please answer the following questions by circling a number on each scale:

(1) How logical does this treatment seem to you, as described at the beginning of this session?

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
</table>
Not at all | Moderately | Extremely |
Logical | Logical | Logical |

(2) How confident are you that this treatment will be successful in significantly reducing your fear of speaking before a group?

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
</table>
Not at all | Moderately | Extremely |
Confident | Confident | Confident |

(3) How confident would you be in recommending this treatment to a friend who was extremely anxious about making speeches?

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
</table>
Not at all | Moderately | Extremely |
Confident | Confident | Confident |
APPENDIX I

Therapist Manual:
Systematic Desensitization

The basic procedures and approximate time schedule for each session are presented below:

Session 1 (90 minutes)

(1) Explanation of rationale and course of treatment (10 min.)

(2) Description of procedures to be followed during session (5 min).

(3) Training in progressive relaxation (60 min.).

(4) Presentation of neutral imagery (5 min.).

(5) Undisturbed relaxation; arousal from relaxed state (5 min.).

(6) Administration of relaxation, visualization, and credibility/expectancy-for-improvement scales (5 min.).

Session 2 (90 minutes)

(1) Description of procedures to be followed (5 min.).

(2) Relaxation induction (20 min.).

(3) Presentation of neutral imagery (5 min.).

(4) Presentation of hierarchy scenes 1 through 10 (50 min.).

(5) Undisturbed relaxation; arousal from relaxed state (5 min.).

(6) Administration of relaxation and visualization scales (5 min.).

Session 3 (90 minutes)

(1) Description of procedures to be followed (5 min.).
(2) Relaxation induction (20 min.).

(3) Presentation of neutral imagery (5 min.).

(4) Presentation of hierarchy scenes 10 through 18 (45 min.).

(5) Undisturbed relaxation; arousal from relaxed state (5 min.).

(6) Administration of relaxation and visualization scales (5 min.).

(7) Concluding remarks (5 min.).

Specific Procedures

Explanation of rationale and course of treatment. The rationale presented to systematic desensitization subjects is a modified version of that presented by Paul (1966) and described below:

The emotional reactions which you experience are a result of your previous experiences with people and situations. These reactions oftentimes lead to feelings of anxiety or tenseness which are really inappropriate. Public speaking anxiety is a response which not only makes speaking before a group unpleasant, but also hinders your ability to speak well in these situations. Since perceptions of situations occur within ourselves, it is possible to work with your reactions right here in these sessions by having you imagine or visualize those situations.

The specific technique we will be using is one called desensitization. This technique utilizes two main procedures -- relaxation and counterconditioning -- to reduce your anxiety. The relaxation procedure is based upon years of work that was started in the 1930's by Dr. Jacobsen. Dr. Jacobsen developed a method of inducing relaxation that can be learned very quickly, and which will allow you to become very deeply relaxed; probably more deeply relaxed than ever before. Of course, the real advantage of relaxation is that the muscle system in your body cannot be both tense and relaxed at the same time; therefore, once you have learned the relaxation
technique, it can be used to counter anxiety, tenseness, and feelings like those you experience in the speech situation.

Relaxation alone can be used to reduce anxiety and tension, and you will be asked to practice relaxation between our meetings. Often, however, relaxation is inconvenient to use and really doesn’t permanently overcome anxiety. Therefore, we combine the relaxation technique with the psychological principle of counterconditioning to actually desensitize situations so that anxiety no longer occurs.

The way in which we will do this is by utilizing a hierarchy of situations related to public speaking which range from the least to the most anxiety-provoking. First, however, you will be trained in the technique of progressive relaxation. You will see how this operates in a few minutes when we actually begin this training. After you have become proficient in this technique, we will then start counterconditioning. This will be done by having you repeatedly imagine the specific situations from the anxiety hierarchy while under relaxation. By having you visualize very briefly, while you are deeply relaxed, the situations that normally arouse anxiety, those situations gradually become desensitized so that they no longer make you anxious. We start with those situations that bother you the least, and gradually work up to the speech itself. Since each visualization will lower your anxiety to the next, a full-fledged anxiety reaction never occurs.

This treatment method has proven to be extremely effective in helping people to overcome their fears of speaking before a group.

The rationale described above is presented live by the therapist to both the live and automated groups. Subjects in the live condition are asked to remain silent during the treatment sessions so that tape-recordings of the treatment procedures may be made which can later be used to provide treatment for other groups.
Subjects in the automated condition are presented with the following additional statements:

Several studies have demonstrated these treatment procedures to be equally effective when administered by means of tape recordings of the therapist's instructions. Speech anxiety is a very common and widespread problem. The use of tape recordings enables larger groups of people to be provided with this treatment. You will be receiving treatment by the use of such tape-recorded instructions. The tapes will provide all the information necessary to help you significantly reduce your public speaking anxiety.

Training in progressive relaxation. Subjects are trained in deep muscle relaxation following the basic rationale and procedures recommended by Bernstein and Borkovec (1973), although abbreviated for presentation in a single session. Training begins by a brief description of the technique and the modeling of how each muscle group is to be tensed. In the live treatment condition, the therapist provides the modeling. For the automated group, this is presented by the "naive" experimenter.

The progressive relaxation training follows the below-listed sequence of events:

(1) Subjects' attention is focused on the muscle group.
(2) At a predetermined signal ("Now"), the muscle group is tensed.
(3) Tension is maintained for a period of 7 seconds (reduced to 3 seconds for the tensing of the feet).
(4) At a predetermined cue ("O.K., relax"), the muscle group is released.
(5) Subjects' attention is maintained upon the muscle group as it relaxes.

Subjects go through both the relaxation and desensitization proper procedures while lying on a carpeted floor; their head resting on a pillow. To begin the relaxation procedure, their legs are extended; their arms resting to their sides. They are instructed to close their eyes so as to minimize external stimulation. The lights in the room are dimmed.

Provided below is a description of the instructions presented during the actual procedure:

Alright, by making a tight fist I'd like you to tense the muscles in the right hand and lower arm. Now, feel the muscles pull; notice what it's like to feel tension in these muscles as they pull and remain hard and tight. (After 7 seconds:) Relax. Just let these muscles go, noticing the difference between tension and relaxation, focusing on the feeling in this muscle group as it becomes more and more relaxed. Pay attention only to the sensations of relaxation as the relaxation process takes place. (After 30 seconds of relaxation:) Alright, again I'd like you to tense the muscles in the right hand and lower arm. Now, feel the muscles pull; notice how hard and tight they feel. (After 7 seconds:) Relax. Let all the tension go, focusing on these muscles as they just relax completely. Experience the sensations of deep, complete relaxation flowing into these muscles.

By the above-noted process, each muscle group is tensed and relaxed twice. After approximately one minute of relaxation following the second tension cycle, subjects are given instructions to tense the next muscle group.
The training in progressive relaxation is conducted during the first treatment session, beginning with the sequential tensing and releasing of 16 muscle groups. These muscle groups, their tensing instructions, and their order of presentation are described below:

(1) Right hand and forearm (make a tight fist).
(2) Right biceps (push elbow down against floor).
(3) Left hand and forearm (make a tight fist).
(4) Left biceps (push elbow down against floor).
(5) Forehead (lift eyebrows as high as possible).
(6) Upper cheeks and nose (squint and wrinkle nose).
(7) Lower cheeks and jaws (bite hard and pull back corners of mouth).
(8) Neck and throat (pull chin toward chest and keep it from touching chest).
(9) Chest, shoulders, and upper back (pull shoulder blades together; take a deep breath and hold it).
(10) Abdominal region (make stomach hard).
(11) Right thigh (lift leg off floor).
(12) Right calf (pull toes toward head).
(13) Right foot (point and curl toes, turning foot inward).
(14) Left thigh (lift leg off floor).
(15) Left calf (pull toes toward head).
(16) Left foot (point and curl toes, turning foot inward).
Following the training sequence noted above, the number of muscle groups is reduced to 7, as described below:

(1) Right hand and forearm; Right biceps.
(2) Left hand and forearm; Left biceps.
(3) Forehead; Upper cheeks and nose; Lower cheeks and jaws.
(4) Neck and throat.
(5) Chest, shoulders, and upper back; Abdominal region.
(6) Right thigh; Right calf; Right foot.
(7) Left thigh; Left calf; Left foot.

Presentation of neutral imagery and hierarchy scenes. Following the induction of relaxation in each session, subjects are instructed to visualize a neutral scene — that of opening the door to and entering their place of dwelling. They are asked to visualize the scene as though they are actually experiencing it in the now, rather than viewing it from a distance. This scene is presented six times for visualization: twice for 5 seconds, twice for 10 seconds, and twice for 20 seconds. The period of non-visualization following each presentation of the scene is 20 seconds.

At the conclusion of the initial treatment session, subjects are instructed to practice the relaxation technique (7 muscle group sequence) and neutral-scene visualization for at least 15 minutes each day during treatment.
During the second and third sessions, the neutral-scene visualizations are followed by presentation of hierarchy scenes (see Appendix K). Scenes 1 through 10 are presented during the second session and scenes 10 through 18 during the third. The presentation of hierarchy scenes follows the same steps and time-sequencing as described above for the neutral-scene visualization.

Arousal from relaxed state. Following a brief period of undisturbed relaxation, subjects are aroused back to "normal" by counting backwards from 4 to 1. They are given instructions to begin moving their legs and feet at the count of 4, their arms and hands at the count of 3, their head and neck at the count of 2, and to open their eyes at the count of 1.
APPENDIX J

Therapist Manual:
Hypno-Behavioral Treatment

The basic procedures and approximate time schedule for each session are presented below:

Session 1 (90 minutes)

(1) Explanation of rationale and course of treatment (10 min.).

(2) Description of procedures to be followed during session (5 min.)

(3) Hypnotic induction (15 min.).

(4) Deepening and cue-word association (15 min.).

(5) Competency instructions (10 min.).

(6) Group Directed Experience (25 min.).

(7) Undisturbed relaxation; arousal from hypnosis (5 min.).

(8) Administration of relaxation, visualization, and credibility/expectancy-for-improvement scales (5 min.).

Session 2 (90 minutes)

(1) Description of procedures to be followed during session (5 min.).

(2) Hypnotic induction (15 min.).

(3) Deepening and cue-word association (15 min.).

(4) Competency instructions (10 min.).

(5) Group Directed Experience (35 min.).

(6) Undisturbed relaxation; arousal from hypnosis (5 min.).

(7) Administration of relaxation and visualization scales (5 min.).
Session 3 (90 minutes)

(1) Description of procedures to be followed during session (5 min.).

(2) Hypnotic induction (15 min.).

(3) Deepening and cue-word association (15 min.).

(4) Competency instructions (10 min.).

(5) Group Directed Experience (30 min.).

(6) Undisturbed relaxation; arousal from hypnosis (5 min.).

(7) Administration of relaxation and visualization scales (5 min.).

(8) Concluding remarks (5 min.).

Specific Procedures

Explanation of rationale and course of treatment. The rationale presented to hypno-behavioral treatment subjects is a modified version of that presented to the systematic desensitization groups, as described below:

The emotional reactions which you experience are a result of your previous experiences with people and situations. These reactions oftentimes lead to feelings of anxiety or tenseness which are really inappropriate. Public speaking anxiety is a response which not only makes speaking before a group unpleasant, but also hinders your ability to speak well in these situations. Since perceptions of situations occur within ourselves, it is possible to work with your reactions right here in these sessions by having you imagine or visualize those situations.

We will be using a hypnotherapy treatment which utilizes two main procedures under the modality of hypnosis -- relaxation and counterconditioning -- to reduce your anxiety. First, we will induce hypnosis through a procedure similar to that which you experienced at the group meeting the other night. We will then deepen this state of hypnosis by the use of suggestive and imaginal techniques
which will allow you to become very deeply relaxed; probably more deeply relaxed than ever before. Of course, the real advantage of relaxation is that the muscle system in your body cannot be both tense and relaxed at the same time; therefore, once you have achieved this deeply relaxed state, it can be used to counter anxiety, tenseness, and feelings like those you experience in the speech situation.

Relaxation alone can be used to reduce anxiety and tension, and you will be asked to practice relaxation between our meetings. Often, however, relaxation is inconvenient to use and really doesn't permanently overcome anxiety. Therefore, we combine the relaxation technique with the psychological principle of counterconditioning to actually desensitize situations so that anxiety no longer occurs.

The way in which we will do this is by utilizing a sequence of scenes related to public speaking. First, however, you will be aided in entering hypnosis and in achieving a deep state of relaxation. You will see how this operates in a few minutes when we actually begin this process. After you have become proficient in achieving this state, we will then begin counterconditioning. This will be done by having you imagine public speaking situations while in a relaxed, hypnotic state. By having you visualize and experience, while deeply relaxed, those scenes that normally arouse anxiety, the situations will become desensitized so that they no longer make you anxious. Since you will be able to employ the relaxation technique which you will have learned, and given suggestions to help you maintain a relaxed state, a full-fledged anxiety reaction never occurs.

These treatment techniques, under the modality of hypnosis, have proven extremely effective in helping people to overcome their fears and anxieties.

The rationale described above is presented live by the therapist to both the live and automated groups. Subjects in the live condition are asked to remain silent during the treatment sessions so that tape-recordings of the treatment
procedures may be made which can later be used to provide treatment for other groups.

Subjects in the automated condition are presented with the following additional statements:

Several studies have demonstrated hypnotic procedures to be equally effective when administered by means of tape-recordings of the therapist’s instructions. Speech anxiety is a very common and widespread problem. By the use of tape recordings, larger groups of people may be provided with treatment. You will be receiving treatment by the use of such tape-recorded instructions. The tapes will provide all the information necessary to help to significantly reduce your public speaking anxiety.

**Hypnotic induction.** The standard induction procedure of the HGSHE:A is followed. This is a group induction procedure which involves eye fixation and closure, along with suggestions of relaxation and sleep. Subjects are instructed to assume a comfortable position in their chairs before this procedure begins.

**Deepening and cue-word association.** The deepening method entails the use of fractionation, imaginal, and relaxation techniques, following the specific procedures and wording of suggestions described by Watkins (Note 1). The instructions given for the fractionation procedure are presented below:

When I say an odd number, like one, let yourself relax more deeply. Go down into a more profound state. However, when I say an even number, like two, alert yourself slightly; let yourself come up a little. But then as soon as I say the next
odd number, three, go down even deeper than before. Go down and down and continue to relax more profoundly until I say the next even number, four. Continue this way. Go down on five. Then up a bit on six. Down again further on seven. And up, eight. Down, nine. Up ten. Down, eleven.

(At this point the word "down" will be emphasized strongly and each down suggestion will be followed by a few second pause. The word "up" will be spoken much more lightly and after each up suggestion, a down suggestion will follow almost immediately.)

Twelve-thirteen.  
Sixteen-seventeen.  
Twenty-twentynine.

Fourteen-fifteen.  
Eighteen-nineteen.

The imaginal deepening technique employed is a freedom from distraction scene -- Watkins' "The Summer Day":

Just imagine that it is a warm summer afternoon and you are lying on a green, grassy slope on a hillside miles away from where anybody or anything could disturb you. It is extremely peaceful. The grass is very soft and thick. There are a few trees in the distance but the landscape is like a meadow, covered with thick, green grass and a few wild flowers. It is quiet and the sky overhead is a deep, rich blue with only a few soft, fluffy clouds floating in it. The sun is beating down, and you feel so peaceful, so relaxed, so safe and so comfortable that you are allowing yourself to drowse more and more. It is as if the only thought you have is one which goes round and round in your head and says, "deeper relax, deeper relax, deeper relax."

This imaginal scene is directly followed by suggestions aimed at intensifying the relaxed state:

There is a warm, numb feeling beginning to form in your forehead just above the eyes. Now it starts to spread over the top of your head, into your face and all through your head. Your head feels warm and heavy. This is like a numb wave of warmth that is sweeping down through your body. It brings the most pleasant sensation of heaviness.
and relaxation. Now it moves down through your neck, and your neck becomes heavy. You make it heavy. Heavy, heavy, heavy. This warm, numb, heavy feeling now goes through your shoulders and down into your arms and hands. They feel like the limbs on the trunk of a tree.

And now this warm, heavy feeling moves into the trunk of your body, down through your chest and your abdomen, and the trunk of your body feels warm and heavy. This feeling now drifts down into your legs, your thighs, the calves of your legs and into your feet, and they, too, feel warm and numb and heavy.

This state of relaxation is then paired with a self-produced cue word ("calm"), following a procedure similar to that first described by Paul (1966). Subjects are instructed to focus their attention on their breathing and to silently repeat the word "calm" with each exhalation. The therapist repeats the cue word aloud three times in synchrony with his own exhalations; the subjects continue in this manner. The group members most often pattern their breathing after the lead established by the therapist, but it is not necessary that they do so (Russell, Miller & June, 1974). After approximately 17 pairings (as timed by the therapist's own exhalations), subjects are instructed to attend to general feelings of relaxation. Following approximately one minute of undisturbed relaxation, a second set of twenty cue-word pairings is carried out.

Competency instructions. This procedure entails the use of non-specific suggestions patterned closely after those described by Hartland (1976). A sample of the
suggestions given is presented below:

With each passing day, you will sense a greater feeling of personal well being ... a greater feeling of personal safety and security. You will become much calmer ... more composed ... more tranquil. You will be much less easily worried ... much less fearful and apprehensive ... much less easily upset.

As you become more relaxed and less anxious with each passing day, you will sense a greater feeling of confidence in yourself ... confidence in your ability to achieve your goals ... without fear of failure ... without unnecessary worry.

**Group Directed Experience.** This procedure is a modified version of the "Directed Experience Hypnotic Technique," developed by Gibbons et al. (1970). The suggestions given are patterned closely after those presented by Gibbons (1973) for use in the alleviation of public speaking anxiety. Subjects are projected into situations of standing in front of a college class, about to give a speech. A sample of the suggestions given are provided below:

Now, while you remain very deeply hypnotized, and feeling very peaceful and calm, I'm going to count to ten, and when I get to ten, you will be standing in front of a college class, ready to give a two-minute speech entitled "Why I Came to College."

The feelings of relaxation and tranquility will remain with you. You will still be able to hear my voice, and in a few moments I will return you to the present setting. But until I do so, you will mentally be standing in front of a college class, about to give a speech. You will silently give the speech when I ask you to, and then I will return you to the present setting.

One. The present scene is beginning to fade now. Two. By the time I get to the count of ten, you
will be standing in front of a college class, about to give a speech. Three. Soon you will be there, and the situation will be completely real to you. But you will be just as relaxed as before, and just as deeply hypnotized. Four. The present scene is dimming more and more now. Soon you will be able to visualize the college classroom, becoming clearer and more real to you with each passing second. Five. Now you can begin to see the classroom, and soon it will be completely real to you. But as you do, you will discover new potentials within yourself for relaxation; and you will relax even more. Six. Clearer and clearer now. You can picture the scene very clearly now. Seven. Soon you will be there, feeling just as relaxed as before. Eight. Almost there now. Nine. Almost there as the scene becomes completely real. Ten. Now you are there, about to give a two-minute speech entitled "why I Came to College." You're feeling relaxed and confident, and in a few moments you will silently give the speech and then I will return you to the former setting.

Before you begin your speech, you concentrate on your breathing and silently repeat the word "calm" with each exhalation. As you do so, you notice that you become more and more relaxed ... more and more at ease. Because you are relaxed, you feel more confident in your ability to handle the situation. And now, feeling totally relaxed and confident, you can silently give your two-minute speech. I'll tell you when the time is up.

(At the end of two minutes!) That's fine. Now I'll return you to the former setting by counting backwards, from ten to one; and by the time I get to the count of one you will be back in the former setting, still hypnotized and deeply relaxed.

Ten. Coming back, now. Nine. The classroom scene is fading, dimming out of sight. Eight. Coming back, coming back. Seven. By the time I get to the count of one, you will be back in the original setting, still deeply hypnotized. Six. Soon your location in time and space will be just what it was before. Five. Four. Three. Almost back, now. Two. Almost back. One. You are back in the original setting now, still deeply hypnotized and still deeply relaxed.
At the conclusion of the directed experience described above, subjects are instructed to attend to general feelings of relaxation before again being projected into a public speaking situation. In the latter directed experience, the described situation is somewhat altered, as is the topic of speech ("My Plans for the Future").

Arousal from hypnosis. Following a brief period of undisturbed relaxation, subjects are aroused from hypnosis by counting up to five. It is suggested that at the count of five subjects will open their eyes, feeling wide awake, alert and refreshed.
APPENDIX K

The Standardized Speech Anxiety Hierarchy

1. The instructor announces in class that oral presentations will be due in two weeks.

2. You are in your usual place of study and are reading material one week in advance of your speech.

3. You are in class and discussing the speeches which are three days away.

4. You are in your usual place of study and are writing a draft or outline of your speech, two days before it is due.

5. You are practicing your speech alone in your room the night before.

6. You are practicing your speech before a friend the night before your speech.

7. You are getting dressed the morning of the speech.

8. It is 30 minutes before your class in which your speech is due. You are sitting looking over your notes.

9. You are walking over to the room on the day of the speech.

10. You are entering the room the day of the speech.

11. You are waiting while another person gives his speech.

12. It is your turn; you are walking up before the audience.

13. You are in front of the audience; you put your notes down in front of you and look up at the audience.

14. You are in front of the audience. You begin the first sentence of your presentation.

15. You are giving your speech; you look out and see the faces in the audience.

16. You are giving your speech. You make a point, but it does not seem to have gone the way you planned.

17. You are giving a speech. You lose your place.

18. You are giving a speech. You look out at the audience. They appear uninterested.
APPENDIX L

NAME_____________________

RELAXATION RATING SCALE

Please rate the level of relaxation you achieved during the appropriate session by circling a number on the scale:

SESSION #1

1__2__3__4__5__6__7__8__9__10

Not at all Moderately Extremely
Relaxed

SESSION #2

1__2__3__4__5__6__7__8__9__10

Not at all Moderately Extremely
Relaxed

SESSION #3

1__2__3__4__5__6__7__8__9__10

Not at all Moderately Extremely
Relaxed
APPENDIX M

NAME_____________________

VISUALIZATION RATING SCALE

Please rate how clearly you were able to visualize the scenes described to you during the appropriate session by circling a number on the scale:

SESSION #1

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Not at all  Moderately  Extremely
Clearly  Clearly  Clearly

SESSION #2

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Not at all  Moderately  Extremely
Clearly  Clearly  Clearly

SESSION #3

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Not at all  Moderately  Extremely
Clearly  Clearly  Clearly
Relaxation and Visualization Instructions

At least 15 minutes each day should be devoted to practicing and developing your relaxation and visualization skills. The more proficient you become in these procedures, the more effective the treatment program will be.

Practice at a time when there is no time pressure. It is important that you are able to focus your full attention on the procedures. Find a place to practice where distractions and interruptions are unlikely.

The muscle groups and their tensing instructions are described on the next page. By alternately tensing and releasing these muscle groups, a deep state of relaxation should be achieved. Once relaxed, proceed to the visualization procedure.

Visualize, as vividly as possible, the scene described in the treatment session (opening the door to and entering your place of dwelling) or another non-anxiety provoking scene of your choosing. Try to visualize the scene as though you were actually experiencing it "in the now", rather than viewing it from a distance. Maintain the image for a few seconds, then return your attention to the feelings of relaxation in your body. Repeat the scene visualization several times.

After completing the procedures described above, arouse yourself by slowly counting backwards from 4 to 1. At the count of 4, begin to move your legs and feet; at 3, start moving your arms and hands; at 2, begin to move your head and neck; at 1, open your eyes.
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<thead>
<tr>
<th>MUSCLE GROUPS</th>
<th>TENSING INSTRUCTIONS</th>
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<tr>
<td>(1) Right hand &amp; forearm</td>
<td>Make a tight fist</td>
</tr>
<tr>
<td>Right biceps</td>
<td>Push elbow down against floor</td>
</tr>
<tr>
<td>(2) Left hand &amp; forearm</td>
<td>(Same as #1 above)</td>
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<tr>
<td>Left biceps</td>
<td>(Same as #1 above)</td>
</tr>
<tr>
<td>(3) Forehead</td>
<td>Lift eyebrows as high as possible</td>
</tr>
<tr>
<td>Upper cheeks &amp; nose</td>
<td>Squint &amp; wrinkle nose</td>
</tr>
<tr>
<td>Lower cheeks &amp; jaws</td>
<td>Bite hard &amp; pull back corners of mouth</td>
</tr>
<tr>
<td>(4) Neck &amp; throat</td>
<td>Pull chin toward chest &amp; keep it from touching chest</td>
</tr>
<tr>
<td>(5) Chest, shoulders &amp; upper back</td>
<td>Pull shoulder blades together; take a deep breath &amp; hold it</td>
</tr>
<tr>
<td>Abdominal region</td>
<td>Make stomach hard</td>
</tr>
<tr>
<td>(6) Right thigh</td>
<td>Lift leg off floor</td>
</tr>
<tr>
<td>Right calf</td>
<td>Pull toes toward head</td>
</tr>
<tr>
<td>Right foot</td>
<td>Point &amp; curl toes, turning foot inward</td>
</tr>
<tr>
<td>(7) Left thigh</td>
<td>(Same as #6 above)</td>
</tr>
<tr>
<td>Left calf</td>
<td>(Same as #6 above)</td>
</tr>
<tr>
<td>Left foot</td>
<td>(Same as #6 above)</td>
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APPENDIX 0

Relaxation and Visualization Instructions

At least 15 minutes each day should be devoted to practicing and developing your relaxation and visualization skills. The more proficient you become in these procedures, the more effective the treatment program will be.

Practice at a time when there is no time pressure. It is important that you are able to focus your full attention on the procedures. Find a place to practice where distractions and interruptions are unlikely.

Personally recreate the scene described to you in the treatment session (lying on the grass on a warm, sunny day) or a relaxing scene of your choosing. Try to visualize the scene as vividly as possible — as if you were actually experiencing it "in the now", rather than viewing it from a distance. By doing so, you should achieve a deeply relaxed state.

Once relaxed, and while maintaining the image, focus your attention on your breathing and silently repeat the word "calm" with each exhalation. Continue in this manner for approximately 17 cue-word pairings, then return your attention to the feelings of relaxation and the pleasant, imagined scene. After approximately one minute of undisturbed relaxation, repeat the cue word procedure.

After completing the process described above, arouse yourself by counting up to 5. At the count of 5, open your eyes.
APPENDIX P

NAME____________________

Please answer the following questions by circling a number on each scale:

(1) How logical did this treatment program seem to you?

2 1 2 3 4 5 6 7 8 9 10
Not at all Moderately Extremely
Logical Logical Logical

(2) How confident are you that this treatment has been successful in significantly reducing your fear of speaking before a group?

2 1 2 3 4 5 6 7 8 9 10
Not at all Moderately Extremely
Confident Confident Confident

(3) How confident would you be in recommending this treatment to a friend who was extremely anxious about making speeches?

2 1 2 3 4 5 6 7 8 9 10
Not at all Moderately Extremely
Confident Confident Confident

Please estimate the average amount of time per day you spent practicing the relaxation/visualization procedures outside of the treatment sessions:

___ minutes
### TABLE 1

Analysis of Variance

Summary Table

**PRCS**

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* Each factor's interaction with the blocking measure served as the error term for that factor.

*** p < .001
### TABLE 2

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Summary Table

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# Each factor's interaction with the blocking measure served as the error term for that factor.

* p < .05
**** p < .001
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# Each factor’s interaction with the blocking measure served as the error term for that factor.

*** $p < .005$
### TABLE 4

Analyses of Variance Summary Tables

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<td>97.13</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

# Each factor's interaction with the blocking measure served as the error term for that factor.
TABLE 5
Analyses of Variance Summary Tables

CREDIBILITY/EXPECTANCY-FOR-IMPROVEMENT: SCALE 1

<table>
<thead>
<tr>
<th>Sources of Variance</th>
<th>MS</th>
<th>df</th>
<th>F-Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>K (Blocking Measure)#</td>
<td>7.64</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>A (Treatment Method)</td>
<td>1.13</td>
<td>1</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>B (Presentation Mode)</td>
<td>4.50</td>
<td>1</td>
<td>1.15</td>
</tr>
<tr>
<td>A*B</td>
<td>10.13</td>
<td>1</td>
<td>2.85</td>
</tr>
<tr>
<td>A<em>B</em>K</td>
<td>3.55</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

CREDIBILITY/EXPECTANCY-FOR-IMPROVEMENT: SCALE 2

<table>
<thead>
<tr>
<th>Sources of Variance</th>
<th>MS</th>
<th>df</th>
<th>F-Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>K (Blocking Measure)#</td>
<td>3.50</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>A (Treatment Method)</td>
<td>0.78</td>
<td>1</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>B (Presentation Mode)</td>
<td>0.28</td>
<td>1</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>A*B</td>
<td>11.28</td>
<td>1</td>
<td>2.59</td>
</tr>
<tr>
<td>A<em>B</em>K</td>
<td>4.35</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

CREDIBILITY/EXPECTANCY-FOR-IMPROVEMENT: SCALE 3

<table>
<thead>
<tr>
<th>Sources of Variance</th>
<th>MS</th>
<th>df</th>
<th>F-Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>K (Blocking Measure)#</td>
<td>8.91</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>A (Treatment Method)</td>
<td>1.13</td>
<td>1</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>B (Presentation Mode)</td>
<td>8.00</td>
<td>1</td>
<td>2.38</td>
</tr>
<tr>
<td>A*B</td>
<td>12.50</td>
<td>1</td>
<td>5.84*</td>
</tr>
<tr>
<td>A<em>B</em>K</td>
<td>2.14</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

* Each factor's interaction with the blocking measure served as the error term for that factor.

* p < .05
### TABLE 6
Analyses of Variance Summary Tables

#### POST-TREATMENT QUESTIONNAIRE: SCALE 1

<table>
<thead>
<tr>
<th>Sources of Variance</th>
<th>MS</th>
<th>df</th>
<th>F-Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>K (Blocking Measure)</td>
<td>5.27</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>A (Treatment Method)</td>
<td>8.00</td>
<td>1</td>
<td>5.59*</td>
</tr>
<tr>
<td>AK</td>
<td>1.43</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>B (Presentation Mode)</td>
<td>0.13</td>
<td>1</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>BK</td>
<td>3.98</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>AB</td>
<td>0.50</td>
<td>1</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>ABK</td>
<td>2.21</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

* Each factor’s interaction with the blocking measure served as the error term for that factor.

* p < .05

**** p < .0001
<table>
<thead>
<tr>
<th>Sources of Variance</th>
<th>MS</th>
<th>df</th>
<th>F-Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \kappa ) (Blocking Measure)#</td>
<td>12.82</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>( B ) (Presentation Mode)</td>
<td>0.25</td>
<td>1</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>( \beta \kappa )</td>
<td>1.96</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

\# Each factor's interaction with the blocking measure served as the error term for that factor.
TABLE 9

† Values Resulting from †-Tests
Comparing the Overall Means of
the Control Group and Each Treatment Group

<table>
<thead>
<tr>
<th>Treatment</th>
<th>PRCS</th>
<th>AD</th>
<th>TBCL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Systematic Desensitization</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Live</td>
<td>-0.34</td>
<td>0.01</td>
<td>-1.36</td>
</tr>
<tr>
<td>2. Automated</td>
<td>-0.45</td>
<td>-1.36</td>
<td>-0.64</td>
</tr>
<tr>
<td><strong>II. Hypno-Behavioral Treatment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Live</td>
<td>-0.46</td>
<td>-0.83</td>
<td>-0.52</td>
</tr>
<tr>
<td>2. Automated</td>
<td>-0.72</td>
<td>-1.51</td>
<td>-1.03</td>
</tr>
</tbody>
</table>

# †-tests were based on pooled estimates of error.
### Table 9
Means and Standard Deviations for Each Group on Dependent Measures

<table>
<thead>
<tr>
<th>Treatment Testing</th>
<th>Mean</th>
<th>SD</th>
<th>Mean</th>
<th>SD</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PCS</td>
<td>AD</td>
<td>TBCL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>I. Systematic Desensitization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Live</td>
<td>24.38</td>
<td>4.90</td>
<td>87.25</td>
<td>10.82</td>
<td>2.29</td>
<td>0.83</td>
</tr>
<tr>
<td></td>
<td>14.63</td>
<td>6.65</td>
<td>76.50</td>
<td>7.87</td>
<td>1.63</td>
<td>0.38</td>
</tr>
<tr>
<td>2. Automated</td>
<td>23.88</td>
<td>3.27</td>
<td>85.13</td>
<td>7.00</td>
<td>2.66</td>
<td>1.09</td>
</tr>
<tr>
<td></td>
<td>13.88</td>
<td>7.12</td>
<td>65.75</td>
<td>8.40</td>
<td>1.82</td>
<td>0.78</td>
</tr>
<tr>
<td>II. Hypno-Behavioral Treatment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Live</td>
<td>23.50</td>
<td>3.63</td>
<td>81.38</td>
<td>11.15</td>
<td>2.70</td>
<td>0.70</td>
</tr>
<tr>
<td></td>
<td>13.63</td>
<td>4.47</td>
<td>74.50</td>
<td>11.35</td>
<td>1.97</td>
<td>0.68</td>
</tr>
<tr>
<td>2. Automated</td>
<td>23.63</td>
<td>3.74</td>
<td>85.63</td>
<td>11.82</td>
<td>2.50</td>
<td>0.93</td>
</tr>
<tr>
<td></td>
<td>9.50</td>
<td>4.50</td>
<td>63.88</td>
<td>8.97</td>
<td>1.68</td>
<td>0.71</td>
</tr>
<tr>
<td>III.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Control</td>
<td>23.38</td>
<td>4.81</td>
<td>87.50</td>
<td>8.26</td>
<td>2.74</td>
<td>0.74</td>
</tr>
<tr>
<td></td>
<td>20.75</td>
<td>5.75</td>
<td>76.13</td>
<td>9.69</td>
<td>2.23</td>
<td>0.66</td>
</tr>
<tr>
<td>2. Pooled Treatment Subjects</td>
<td>23.84</td>
<td>3.75</td>
<td>84.84</td>
<td>10.90</td>
<td>2.53</td>
<td>0.97</td>
</tr>
<tr>
<td></td>
<td>12.78</td>
<td>5.71</td>
<td>70.16</td>
<td>10.37</td>
<td>1.75</td>
<td>0.63</td>
</tr>
</tbody>
</table>
**TABLE 10**

F Values Resulting from Analyses of Variance between Control and Treatment Subjects

<table>
<thead>
<tr>
<th>Treatment</th>
<th>PRCS</th>
<th>AD</th>
<th>TBCL</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Systematic Desensitization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Live</td>
<td>9.19**</td>
<td>&lt; 1</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>2. Automated</td>
<td>11.23***</td>
<td>&lt; 1</td>
<td>1.33</td>
</tr>
<tr>
<td>II. Hypno-Behavioral Treatment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Live</td>
<td>9.52**</td>
<td>&lt; 1</td>
<td>1.27</td>
</tr>
<tr>
<td>2. Automated</td>
<td>23.95****</td>
<td>4.51</td>
<td>1.21</td>
</tr>
<tr>
<td>III. Pooled Treatment Subjects</td>
<td>6.32***</td>
<td>3.29*</td>
<td>&lt; 1</td>
</tr>
</tbody>
</table>

* p < .05  
** p < .01  
*** p < .005  
**** p < .001