

THE IMPLEMENTATION OF A LARGE-SCALE PROGRAM OF SYSTEMATIC DESENSITIZATION FOR COMMUNICATION APPREHENSION

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THE Speech Communication profession has recognized for many years that normal classroom instruction does not provide sufficient assistance for many students to overcome their fear of communication transactions. Over the last decade an increasing body of research has indicated that a behavior therapy known as systematic desensitization (SD) is highly effective in helping people to overcome phobic and neurotic anxieties such as communication apprehension. While most of the research on systematic desensitization has focused on other anxieties, several have dealt specifically with communication apprehension.¹ The conclusion from this body of

research is that SD is a highly effective method for assisting students to overcome communication apprehension; at least it is highly effective when administered in a carefully controlled, laboratory setting. No research has been reported indicating whether these laboratory results can be generalized to conditions which normally obtain in the regular college or secondary school environment.

The purpose of this paper is two-fold: 1) to report the results of a field test of SD and 2) to indicate the procedure by which a program of SD may be established in other institutions.

This investigation was concerned with one major question and three secondary questions. Of primary importance was the question whether SD would be as effective when applied on a mass scale as it has been previously under laboratory conditions. Of secondary interest were the following questions: 1) Is SD as effective when administered in the student's regular classroom as it is when administered in laboratory surroundings? 2) Is SD as effective when administered by male trainers as when administered by female trainers? 3) Is SD equally effective for males and females?

The first secondary question resulted from suggestions of both trainers and

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¹ Gordon L. Paul, *Insight vs. Desensitization in Psychotherapy: An Experiment in Anxiety Reduction* (Stanford: Stanford University Press, 1966); Gordon L. Paul, "Two-year Follow-up of Systematic Desensitization in Therapy Groups," *Journal of Abnormal Psychology*, 73 (1968), 119-130; O. Kondas, "Reduction of Examination Anxiety and 'Stage-Fright' by Group Desensitization and Relaxation," *Behavior Research and Therapy*, 5 (1967), 275-281; James C. McCroskey, David C. Ralph, and James E. Barrick, "The Effect of Systematic Desensitization on Speech Anxiety," *Speech Teacher*, 19 (1970), 32-36; Jack G. Nichols, "An Investigation of the Effects of Varied Rates of Training on Systematic Desensitization for Interpersonal Communication Apprehension" (unpubl. Ph.D. diss., Michigan State University, 1969); Charles D. Ertle, "A Study of the Effect of Homogeneous Grouping on Systematic Desensitization for the Reduction of Interpersonal Communication Apprehension" (unpubl. Ph.D. diss., Michigan State University,

1969); Judith Wells, "A Study of the Effects of Systematic Desensitization on the Communicative Anxiety of Individuals in Small Groups" (unpubl. M.A. thesis, San Jose State College, 1970).

students in pilot administrations of SD in regular classrooms at Illinois State University. Both complained of distractions as a result of noise from hallways and adjoining classrooms. The second question arose from the comments of some students that their female trainers' voices were too high pitched and caused them to become tense when they were supposed to relax. The final question was deemed important for study because females had been found regularly to score higher than males on measures of communication apprehension.

PROCEDURE

Students in the basic course in communication at Illinois State University were screened by means of the Personal Report of Communication Apprehension (PRCA), College form.² Students with PRCA scores above the previously determined population mean (60) were considered eligible for treatment. A maximum of seven students in each section were selected for this investigation, the seven students with the highest PRCA scores. In some sections fewer than seven students were eligible for treatment. A total of 37 graduate assistants who were section instructors in the course served as trainers. The trainers and 541 eligible students were divided into four experimental conditions:

1. Male trainers who administered SD in the regular classroom $n = 81$ males, 165 females).
2. Female trainers who administered SD in the regular classroom ($n = 38$ males, 95 females).
3. Male trainers who administered SD in a special room designed for SD in the ISU Communication Research Laboratory ($n = 24$ males, 32 females).
4. Control—no SD administered ($n = 35$ males, 71 females).

² James C. McCroskey, "Measures of Communication-Bound Anxiety," *Speech Monographs*, 37 (1970), 269-277.

Because of the shortage of female trainers available, no female-trainer-in-lab condition was employed.

Treatment began the second week of the term and ran six weeks. A post-test measure (PRCA) was taken immediately after the completion of the final session and again the last week of the semester (16th week). The delayed posttest was administered during the last class period in the course. Some subjects were lost from the experiment because of absence from class on that day. Each treatment session was one hour in length and was the second hour of a two-hour class period. Students not receiving SD were dismissed during this hour. The procedure for administration of SD that was followed is the one discussed in a later section of this paper.

STATISTICAL ANALYSIS

PRCA change scores (pre-post and pre-delayed post) were analyzed in a 4 (treatment) \times 2 (sex of student) analysis of variance with adjustments for unequal and disproportionate cell size. Since significant *F*-ratios were obtained for the treatment effects, *t*-tests were employed to determine the nature of the differences between treatments. The .05 criterion was set for significance of all tests.

RESULTS

Analysis of variance of pre-post PRCA change scores produced significant *F*-ratios for sex of subject and treatment (See Table 1). The male students improved more ($\bar{D} = 16.13$) than did the female students ($\bar{D} = 12.86$). The students with male trainers in the classroom ($\bar{D} = 14.90$), the students with female trainers in the classroom ($\bar{D} = 14.81$), and the students with male trainers in the laboratory ($\bar{D} = 13.79$) all

TABLE 1
RESULTS OF PRETEST-IMMEDIATE POSTTEST CHANGE SCORES
Analysis of Variance Summary Table

Source	Sums of Squares	d.f.	Mean Square	F	P
Treatment	16862.18	3	5620.73	44.50	.05
Sex of Subject	595.02	1	595.02	4.71	.05
Interaction	218.08	3	72.69	.58	NSD
Error	67320.13	533	126.30		

Cell Means					
	Male Trainer- Classroom	Female Trainer	Male Trainer- Lab	Control	Total
Male Ss	15.79	16.82	15.79	— .83	16.13
Female Ss	11.78	12.98	13.82	— 1.10	12.86
Total	13.79	14.81	14.90	— .97	

improved significantly more than did the control group ($\bar{D} = .97$). The three experimental groups did not differ from each other.

Analysis of variance of the pre-delayed post PRCA change scores indicated that, although there was some loss of effectiveness for SD over the nine-week delay period, the effectiveness of the treatments was still significant when compared with the control group (See Table 2). The students with male trainers in the classroom ($\bar{D} = 12.97$), the students with female trainers in the classroom ($\bar{D} = 10.50$), and the students with male trainers in the lab ($\bar{D} = 13.38$) all improved significantly more than the control group ($\bar{D} = 2.09$). Although the male students ($\bar{D} = 13.74$) appeared to have been more affected by SD than the female students ($\bar{D} = 10.82$), the differ-

ence was not significant at the .05 level ($F = 3.51$). However, a supplementary analysis indicated that when the control group was omitted, the difference was significant ($t = 2.36$, $p < .05$, 354 d.f.).

DISCUSSION

The most important conclusion we may draw from the investigation is that the results of previous laboratory investigations of SD may be generalized beyond the laboratory to more normal academic settings with SD retaining its previously demonstrated effectiveness even when administered on a very large scale.

There is no reason to believe from the results of this study that the sex of the trainer or the environment in which SD is administered (laboratory or classroom) will have a major impact on the effectiveness of SD. However, it does ap-

TABLE 2
RESULTS ON PRETEST-DELAYED POSTTEST CHANGE SCORES
Analysis of Variance Summary Table

Source	Sums of Squares	d.f.	Mean Square	F	P
Treatment	6613.11	3	2204.37	18.84	.05
Sex of Subject	411.15	1	411.15	3.51	.10
Interaction	234.64	3	78.21	.67	NSD
Error	51957.47	444	117.02		

Cell Means					
	Male Trainer- Classroom	Female Trainer	Male Trainer- Lab	Control	Total
Male Ss	15.44	11.69	14.10	2.23	13.74
Female Ss	10.49	9.30	12.66	1.94	10.82
Total	12.97	10.50	13.38	2.09	

money. Neither of these barriers is a really serious problem. Trainers do not need to be professional psychologists, they may be almost anyone. Training of trainers can be accomplished in a single day at a very low cost. In terms of the money barrier, the implementation of the program for systematic desensitization is so inexpensive, compared to other programs for assisting handicapped individuals, that its cost can best be described as a pittance. After the small initial investment for equipment and training of trainers, the total cost for desensitization per individual can be less than ten dollars. In short, there is no significant barrier to the implementation of a program of systematic desensitization for communication apprehension.

MOTIVATING PEOPLE TO IMPLEMENT PROGRAMS

The first step in establishing a program of systematic desensitization for communication in either a school or business is to gain approval from the individuals in authority. We are not here attempting to set forth some kind of devious strategy for gaining such approval. Rather, we believe that most people in authority in schools and businesses, when presented with the facts concerning communication apprehension and its treatment, will be very favorably disposed toward implementing such a program. Throughout the educational and business world homage is paid to the importance and value of communication. Leaders in education point to developing communication skills in students as one of the primary goals of education. On a more crass level, the dollar talks in the business world. The uncommunicative employee is not producing at the level at which he is capable. If that problem can be overcome,

he is more valuable to the business concerned.

The essence of the argument that needs to be presented to people in authority when requesting the authorization and funds for implementing a program of systematic desensitization goes like this: Communication apprehension is accompanied by a tendency on the part of people to withdraw from communication transactions. An individual who withdraws from communication transactions does not make his full contribution to his society or to his business or profession. Systematic desensitization can reduce communication apprehension and help overcome withdrawal behavior. It is economically feasible for almost any school or business to implement a program of systematic desensitization for their students or employees.

This is a relatively simple, straight forward argument. When accompanied with the data available from previous research on systematic desensitization, we believe it is reasonable to assume that most people in authority will agree with the conclusion that a program should be adopted. Presuming that such agreement is obtained, let us consider procedures which should be employed in the actual implementation and operation of the program.

DEFINING THE NEED

Before putting a program into full operation, it is essential that information be obtained concerning how many people will need treatment. The number of people needing treatment at any given point in time will determine, to a large extent, the cost of the program. It is difficult to estimate how many people suffer from communication apprehension that is severe enough to require treatment in any given population without testing. For example, at Michi-

gan State University it was found on the basis of scores obtained from the Personal Report of Communication Apprehension—College that between 10 and 20 percent of the students sampled suffered from extreme communication apprehension and a total of 40 percent were found to have a sufficient degree of apprehension to require treatment. These percentages may vary sharply from one environment to another. If a program is being contemplated in an inner-city school, for example, it would be reasonable to assume that a larger proportion of the students would suffer from communication apprehension than might be the case if the school were in a wealthy suburb. A similar distinction in terms of the percentage of the people needing treatment might be present in two different business environments, one in which most of the employees were direct-contact sales personnel and the other where the bulk of the employees were engineers. The latter group would probably have a much higher incidence of communication apprehension.

The procedure for determining the size of the population needing treatment is very simple. Each student or employee should be asked to complete the Personal Report of Communication Apprehension.³ The scores thus obtained may then be graphed to see what kind of distribution of anxiety is present within the group. Pretesting of a large number of college students indicates that this instrument yields a normal, bell-shaped distribution, but that may not be the distribution in any given business or school. The possible range of scores on the PRCA is from 20 to 100. Experience with college students indicates that anyone with a score above 70 should definitely be considered for treatment, but some students falling below 70 (down to

60) need treatment. Obviously, there is a certain amount of error involved in measuring anything in the psychological world. Thus, other things being equal, anyone with a score of 61 or higher should have treatment made available.

A second step in defining the need for the program is to determine whether the program will be a short-term or a long-term program. In the schools, of course, all programs should be long-term in nature as the clientele of the school is constantly changing. In business the answer is not quite as simple. In some businesses there is a considerable turnover of employees while in other businesses there is a relatively small turnover. Businesses with small turnovers may find it economically advantageous to simply hire someone from the outside to set up and operate their program on a short-term basis rather than establishing their own program. The essential question to be answered at this point in the implementation of the program of systematic desensitization is "How many people need treatment *now* and how many will be needing treatment *periodically*?"

"TOOLING-UP" FOR THE PROGRAM

The operation of a program of systematic desensitization for communication apprehension requires a certain amount of hardware, software, and trainers.

Hardware. Administration of systematic desensitization requires a room, comfortable chairs, a tape recorder, a relaxation tape, and if the program is to involve a large number of people, an electrical signaling system. The size of the room required will be determined by the number of the people to be given simultaneous treatment. In most of the work with systematic desensitization small groups of 5-7 individuals have been desensitized simultaneously. This requires a room no larger than 10 ft. by

³ McCroskey, "Measures of . . ."

15 ft. This does not have to be a separate room which is only used for systematic desensitization, it may be used the rest of the day as a lounge or it may even be a regular classroom. The main features of an appropriate room are subdued lighting and quiet. In short, it must have a relaxing atmosphere. The dollar outlay for such a room will normally be minimal because systematic desensitization may be administered after hours or whenever the room is free. Very large programs, of course, would require a separate room (or rooms) and the cost of such rooms must be considered.

The most essential ingredient in the administration of systematic desensitization is comfortable seating. Individuals are asked to relax, and these are individuals for whom relaxation initially is not easy. Thus, the more comfortable the seating, the easier it will be to relax the people. Reclining chairs are most suitable for this purpose and can be obtained at a fairly minimal cost. For example, five chairs of this type were obtained in the Lansing, Michigan area for a total of \$250.00. If purchase of such chairs is financially prohibitive, chaise lounges with aluminum frames such as are used on the patio or beach can serve nearly as well. In most areas five of these may be obtained for about \$35.00. Since a tape recorder is normally available in a school or business environment, this item should not produce a financial handicap. Any tape recorder will do, but a tape recorder with a tone control which permits screening out treble tones is to be preferred. A tape recording of deep relaxation instructions must either be obtained or made.⁴

⁴ A copy of a relaxation tape may be secured by writing to the national office of the Speech Communication Association, Statler Hilton Hotel, New York, New York 10001. This tape is based on relaxation instructions provided by Joseph Wolpe and Arnold A. Lazarus, *Behavior*

If the program is to involve a large number of people receiving simultaneous desensitization, it will be necessary to develop an electrical signaling system for communication between the trainees and the trainer. Such a system would involve a simple button switch attached to each chair that would connect with a light panel which the trainer could observe. We have received an estimate of \$100 for the installation of such a system for twenty-five chairs, but this price may vary according to local conditions.

As was noted previously, the financial outlay necessary for the implementation of the program of systematic desensitization should prove to be no barrier except under highly unusual circumstances. If a room and comfortable chairs were available, if a relaxation tape is obtained, if a tape recorder is available, and only a small number of people are to receive treatment at any one time, the actual dollar outlay can be zero. One such program has been adopted in a high school at no cost by borrowing five lounge chairs from teachers in the system, and employing the regular facilities and equipment available at the school. More commonly, some outlay will be necessary for comfortable chairs.

Software. Two items of software are essential for implementing the program of systematic desensitization. A measure of communication apprehension appropriate to the population from whom individuals are going to be selected for treatment, and hierarchies of anxiety stimuli appropriate to that population. Measures and hierarchies that have been developed for seventh grade, tenth grade, and college populations are available.⁵ In special circumstances, such as

Therapy Techniques (New York: Pergamon Press, 1966), 177-180.

⁵ Communication apprehension instruments are available in McCroskey, "Measures of . . ." Copies of communication apprehension hierarchies are available from the SCA national office.

working with the population made up of the "culturally deprived," the already developed instruments might be inappropriate.

Trainers. A trainer must be employed to administer systematic desensitization. As has been noted, such trainers do not need to be skilled clinical psychologists. They may be any reasonably sensitive person who does not have a visual or vocal handicap. With proper instruction any reasonably mature student or low-level employee in business should be able to administer the treatment successfully. But the trainer must be trained before he can administer treatment. One way of obtaining such instruction is through a local counseling clinic. Contact with the professional staff of the clinic is desirable for two reasons. First, these individuals will most likely be familiar with systematic desensitization and in a position to give competent instruction to trainers. Secondly, it is good to have close contact with a counselor because during the operation of a program it is not uncommon to discover individuals who need additional psychological counseling that lay trainers are in no position to give. If a good working relationship is established with the counseling clinic, it will be possible to refer these individuals for appropriate treatment.

If there is no local counselor or if none is willing to serve as an instructor of trainers, an alternative approach is to send the person who is to receive training as a trainer to where a program has already been established or to bring in the director of an established program on a short-term consultant basis. In any case, the training of a trainer should not require more than one day's effort. Thus the cost of such instruction should be minimal. In addition, once there is one trainer available he can instruct other people in the essential character-

istics of administration of systematic desensitization.

OPERATING THE PROGRAM

Once facilities, equipment, and trainers are available, the program of systematic desensitization for communication apprehension may be put into operation. The population of students or employees needs to be screened and the people selected for treatment. These people are then assigned in groups to treatments. Treatments may be administered in any reasonable time sequence. Systematic desensitization has been successful when administered on either daily, twice a week, or weekly bases. The procedures for administration of treatment are described below.

Subjects should be seated in comfortable chairs and told to lean back and relax. Then the communication system between trainee and trainer needs to be explained. Trainees should be informed that whenever they feel tension, once the relaxation tape has been played, they should indicate that tension by merely raising the index finger of their right hand. If a very large group is being administered treatment simultaneously, of course, the instruction would be to touch the button on their chair because the trainer would be unable to observe all the finger indications in a large group.

After the trainer is certain that this instruction is clear, the trainees should be instructed to lean back in their chairs and follow the instructions on the deep relaxation tape. The tape is then played. When it is completed, the tape recorder should be turned off and the trainer should continue with relaxation instructions similar to those on the tape for a few moments.

The trainer should check to make sure all trainees are awake, because in a state

of deep relaxation trainees tend to fall asleep. The procedure for determining whether trainees are awake is to tell the trainees that when their name is called, if they hear it, they should indicate by raising the index finger on their right hand. Then each trainee's first name is called. If a trainee does not respond when his name is called, it should be repeated. If there continues to be no response, the trainee should be tapped on the leg or foot and awakened. Then for another minute or so relaxation instructions should be given by the trainer.

At this point, all trainees should be in a state of deep relaxation. It is now time to begin administration of the communication apprehension hierarchy. The first item on the hierarchy should be presented to the subjects by the trainer and then he should remain silent for a period of 15 seconds. If any trainee indicates anxiety during that 15 seconds, the trainer should ask all of the trainees to put the image of the anxiety stimulus out of their minds and concentrate on relaxation. He should continue to give relaxation instructions for a period of 15 to 30 seconds. After that time, he should again ask the subjects to visualize the anxiety stimulus. If the 15 second period elapses with no indication of anxiety from any trainee, the trainees should be asked to put the image out of their minds and go back to relaxing. The trainer again gives additional relaxation instructions for about 15 to 30 seconds. After that time the anxiety stimulus should again be administered with a pause of 30 seconds. If any trainee indicates anxiety during the 30 second period, the trainees should be asked to put the image out of their minds and go back to relaxing and receive more relaxation instructions. This procedure is continued until it is possible for *all* trainees in the group to visualize the anxiety stimulus for 15 seconds

without indication of anxiety and for 30 seconds without indication of anxiety. When sequential 15 and 30 second intervals have been completed with no indication of anxiety, the trainer may then go on to the second anxiety stimulus in the communication apprehension hierarchy. This procedure is continued until the end of time for treatment at a given setting or until the hierarchy is completed.

Sessions should last no more than from 50 minutes to an hour, including the time used in listening to the relaxation tape. As the time for completion nears, the trainer should go down the hierarchy to the last stimulus which the trainees successfully completed with no anxiety indication. This stimulus should be presented with a 60 second pause by the trainer. If no trainee indicates anxiety during this period, treatment may be terminated with the assurance that all subjects will leave the treatment session in a low state of arousal. If any trainee indicates anxiety during this period, the trainer should move back to a still less anxiety provoking stimulus that has been successfully completed and administer it for a 60 second period.

Treatments should be continued for a preset number of sessions, such as 5 to 7. This will normally permit the completion of the anxiety hierarchy by all trainees. At this point the trainees should be asked again to complete the PRCA. Those individuals with scores 60 or below should be considered cured and should be removed from treatment. Those individuals who still report moderate to high levels of communication apprehension should be formed in new groups and treatments should continue for another 5 to 7 sessions. At that time, the individual again should be asked to complete the PRCA. By this point, almost all trainees will have overcome their communication apprehension.

However, some individuals do not respond to systematic desensitization. This small number (probably less than 5%) should be encouraged to seek professional assistance from a psychologist.

Although the research indicates that the effects of systematic desensitization are maintained for extended periods of time, if the program is an on-going one, it would be useful to reinforce the effects of systematic desensitization on communication apprehension for those individuals who have been identified as cured by giving them single session treatments at three to six month intervals for the following year or two.

DETERMINING THE EFFECTS OF THE PROGRAM

Any program that involves the outlay of time or money by a school or business should be subjected to a systematic program evaluation. A program of systematic desensitization for communication apprehension should be no exception. Although there is no reason to believe that a program implemented in the manner discussed above would not be extremely successful, it still should be put to the test.

There are at least three ways of evaluating a program of systematic desensitization for communication apprehension that seem to be appropriate. The first method is analogous to the procedures which have been employed in the research on systematic desensitization.

This procedure involves administration of the PRCA to people who have been treated and to people who have not been treated but who, on earlier tests, indicated that they were in need of treatment. Not everyone who is offered treatment accepts it. Thus, in any school or business there will be people who have not volunteered for treatment who are in other ways comparable. If the scores on the PRCA are not substantially lower for those who receive treatment than those who have not, this would indicate that the treatment has been unsuccessful.

But systematic desensitization for communication apprehension is not merely designed to lower anxiety scores on the PRCA. Presumably, if communication apprehension is reduced, there should be other behavioral manifestations. In the school environment observations by the students' instructors could be usefully employed as an evaluation tool. In short, their instructors can simply be asked whether or not they have observed any difference in the behaviors of these people. In the business atmosphere, ratings by superiors or more direct measures of productivity can serve as a useful evaluation tool.

Whatever method is employed to evaluate the success of the program, all indications are that a properly administered program of systematic desensitization for communication apprehension will provide significant benefits to those involved.