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COPING WITH ACADEMIC STRESSORS: A Pilot Study .

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Technical Report

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Preface

This Technical Report describes training materials developed not only for the pilot study whose results are reported here, but for other investigations that are also part of the overall project, "Life Stress and Coping Skills in Relation to Performance and Organizational Effectiveness. A number of persons contributed to this work. We particularly want to thank Judith Siegel, Ronald E. Smith and Barbara R. Sarason who provided valuable help in preparing this report.

100

Coping with Academic Stressors: A Pilot Study

This report describes a pilot study conducted as part of a project aimed at developing training programs in stress coping skills for specific populations. Underlying the project is the belief that inability to deal adaptively with stressful situations has a deleterious impact not only on the performance of the individual with inadequate stress coping skills but also on organizational effectiveness. In addition, the sense of satisfaction and well-being of the individual and the group also diminish.

While the major focus of the project is on developing stress coping skills in the personnel of functioning organizations, it seemed desirable to approach this task in a stepwise fashion. An important first step is outlining the components of a stress coping skills program. Important basic questions are: Does such a program have meaning and face validity for subjects? What elements should it comprise? Largely because of convenience, it was decided to use students at a large urban university as subjects for pilot work. It was felt that answering some basic preliminary questions with this population would facilitate the more difficult task of conducting research in a complex organization such as a police department. (Research with a police department is currently underway.)

Because it was felt important to do pilot work on stress coping skills with persons who were experiencing some degree of stress, the subjects for the pilot study reported here were students in academic difficulty. Much pilot work was conducted in developing the materials used in the study reported here. This work involved developing materials, testing them, obtaining subjects' reactions to them, and criticizing them ourselves.

Because a body of research literature already exists on test and school anxieties, the topic of anxiety over evaluation seemed an especially appropriate one for this preliminary effort. Sarason (1975 a) has described the role of stress-related preoccupations in evaluation anxiety. He has indicated the way in which self-defeating thoughts can seriously interfere with information processing and cause poor performance. It has been demonstrated that certain individuals in evaluative situations are prone to emit a variety of self-interfering thoughts. In fact, it has been suggested that "the highly test anxious individual is one who is prone to emit self-centered interfering responses when confronted with evaluative conditions" (Sarason, 1975 b).

These responses take the form of self-statements such as "I just don't know enough to pass this test," "I'll never get finished in time," "Maybe I'm just not smart enough to be taking this course," etc. This type of self dialogue can have several effects. The self statements are likely to increase further the individuals' general level of arousal. They are also likely to have a detrimental effect on attention and task performance. To the extent that one is self-preoccupied, attention cannot be directed toward task-relevant cues. It seems likely that preoccupations interfere with attention and performance, not only in test-taking situations but in other stressful situations as well. To the extent that interfering thoughts are aroused under stress it would appear necessary to employ procedures as part of a training program to deal with this cognitive component.

Attempts to deal with stress-related cognitions have been made by several investigators. Wine (1970), for instance, has provided results

suggesting that highly test anxious individuals benefit from attentional training procedures which involve an emphasis on making task-related self-statements. A number of studies by Meichenbaum (1972; 1973; 1975), have also suggested the usefulness of cognitive approaches in dealing with anxiety, and have demonstrated that self statements are modifiable. That is, individuals can be trained to inhibit self-interfering responses and emit more adaptive self-instructions. Since it seems reasonable to assume that anxiety has both physiological and cognitive components which may affect performance, it would seem reasonable to deal with both components in a stress coping skills program.

The present report describes a pilot investigation of a training program designed along these lines which was developed to deal with the physiological and cognitive effects of academically related stressors. Three questions for which answers were sought include these: What are the subjective reactions to the program? Does anxiety over academic stressors decrease as a function of the stress coping skills program? Do students' evaluations of their academic effectiveness become more positive after participating in the program?

Method

Subjects

The subjects were 19 undergraduate university students (12 males, 7 females) ranging in age from 21 to 33 years. The mean age was 24 years. The subjects were either on academic probation or recognized serious academic difficulties in themselves. Subjects were solicited in two ways; (1) through an advertisement in the university newspaper which

described a program designed for students with serious academic problems, and (2) by phone calls to students on academic probation asking them if they wished to participate in such a program. The study was conducted at the University of Washington during the 1976 Summer School.

Training Program

The training program consisted of seven sessions over a three and one-half week period. These sessions were conducted for groups of four to five subjects each. The content of the program sought to make students aware of the physiological and cognitive aspects of stress and help them learn to cope with both aspects, particularly as they related to academic stressors. The program consisted of several components which will now be described.

Information About Stress

In the first portion of the program, the students were given a general overview of the entire program and given a handout entitled "Introduction to The Student Stress Management Program" (see Appendix A). This material described the purpose of the program, provided information concerning the cognitive and physiological effects of stress as well as some preliminary information as to how one can learn to cope with stress. This same information was also presented to subjects within the context of a general discussion concerning the effects of stress. Subjects also observed a videotaped interview with a college student who described in very personal terms the nature of the stressors confronting students in the academic environment. Subjects were encouraged to think of similar academically

related stressful experiences which they had encountered and how they had dealt with them.

After this first session subjects were asked to complete a homework assignment in which they monitored and recorded stressful situations which they encountered between sessions and their physiological and cognitive responses to these situations. These records were used as a basis for discussion in the following session and served to make subjects more aware of the role of interfering thoughts and physiological responses in stressful situations.

Cognitive Modeling. The second unit of the program focused specifically on the role of cognitive factors in stress. Videotaped modeling sequences were employed to show how self-preoccupations can interfere with performance in stressful and school related situations. These videotapes, which required considerable script-writing and trial runs, also illustrated coping with self-interfering responses and modeled the use of adaptive facilitative self-statements. A coping model format was used in these videotapes. That is, the models were not presented (and did not seem to be) paragons. They were rather typical students facing various types of stressful experiences. The material was presented by means of a cognitive modeling procedure in which subjects viewed models dealing with various stressful situations. These modeling tapes were developed using a "talk out loud" procedure so that subjects could hear the types of self statements that went through the minds of the models. The videotapes depicted both maladaptive and adaptive cognitive thoughts by seemingly allowing the subjects to tune into the models' thought processes. The two

stressful situations employed were a test taking situation and a situation in which a student is in a classroom lecture, does not understand what is being explained by the lecturer, and is afraid to ask questions for fear of looking stupid. (The scripts for these modeling scenes are presented in Appendix B.)

After observing these modeling scenes, subjects were involved in a discussion centering around self-statements and the role they play in influencing behavior. Emphasis was placed on how interfering thoughts can result in decreased attention to task relevant cues and how they can serve to further increase or incubate one's anxiety level. It was emphasized that individuals can learn to inhibit such thoughts and emit self instructions which facilitate performance.

At the conclusion of this module, the students were given the homework assignment of entering a mildly stressful situation and observing their reactions. They were instructed to attend only to task relevant cues and to inhibit interfering responses. This homework assignment was discussed in the following session.

Relaxation Training. The students received two sessions of cue-controlled or conditioned relaxation training (Russel and Sipich, 1973). Relaxation training was accomplished using an abbreviated set of muscle exercises similar to those employed by Paul (1966). After achieving relaxation, subjects were instructed to focus their attention on breathing and to pair the word "relax" with exhalation for a total of 20 trials. On ten of these trials, subjects themselves produced the cue word subvocally. The rationale behind this conditioned relaxation procedure is that if a

specific cue word is paired contiguously with deep relaxation this cue may later serve to facilitate relaxation responses in anxiety arousing situations. It was felt that this procedure complemented the self-instructional approach to stress management that characterized the coping skills training program.

Relaxation training was presented to each group as the learning of a general self control procedure which might be applied in a variety of stressful situations. Subjects were also given instructions in the use of relaxation. Homework for this section of the program involved practicing relaxation twice per day. Subjects were given a handout "How to Learn Deep Muscular Relaxation" presenting relaxation exercises that could be used in carrying out of this homework assignment. This is presented in Appendix C.

Attentional Training. This phase of the program was designed to aid subjects in learning to focus their attention fully on task relevant cues and to inhibit self-interfering thoughts. It was again emphasized that individuals do talk to themselves and what they say either enhances or interferes with performance on academic tasks. The students were encouraged to talk to themselves while performing certain tasks and to employ self statements which would facilitate attention. The procedure employed was similar to that used by Wine (1970).

Attentional training involved working on a variety of arithmetic problems. It was made clear that the purpose was not to teach mathematical techniques, but rather to provide training in attending. Subjects were told that they would be asked to solve a number of these problems and that

they should talk to themselves about what they were doing. It was pointed out that to the extent one talks to oneself about the task at hand (rather than personal worries) self-preoccupying thoughts will be inhibited.

This procedure was first modeled by the experimenter who worked one problem verbalizing all of the arithmetical operations. After this modeled illustration, each subject was asked to complete a practice problem while verbalizing out loud the appropriate mathematical operations. After each subject had completed one practice problem, difficulties and problems in carrying out this procedure were discussed by the group. The subjects were asked to continue practicing this technique by working five additional problems while talking silently to themselves. They were instructed to talk to themselves only about the task and to inhibit any interfering thoughts. Afterwards any difficulties with the task were discussed. Subjects were instructed to practice this technique while doing homework, taking tests and engaging in other tasks which demand attention (the instructions for this portion of the training program are presented in Appendix D).

Practice in Coping. The final portion of the program was designed to teach students how to utilize the various coping skills they had been taught when dealing with stressful situations. To illustrate how one might employ these coping skills, subjects were first shown a videotape of a model who anticipated, confronted, and effectively dealt with a specific stressor, the threat of electric shock. This cognitive modeling videotape depicted anticipating and dealing with a stressor as well as the type of interfering thoughts and physiological reactions which often

must be dealt with. Also depicted was the way in which one can effectively use a combination of coping skills in handling the stressor. The model coped effectively by sizing up the situation, inhibiting self-defeating thoughts, employing adaptive self-statements that facilitate attention to task related cues, and employing relaxation to deal with the physiological component of anxiety. Self reinforcement for coping was also modeled (see Appendix E for the modeling script used in this phase of the study).

As part of this unit of the training program, participants were given practice in using coping skills. They were placed in what was for them a relatively stressful situation. They were instructed to use the skills they had learned about from the training program and that they had observed the model use. The specific task employed was a difficult anagram task. Subjects were told that performance on this task was related to academic ability and intelligence and that their performance would be compared to the performance of others at the end of the session. They were then asked to respond to this task one at a time and to solve as many of the anagrams as possible while being observed by others in the group. They were reminded to talk to themselves while performing the task, to attend only to the task and to inhibit task-irrelevant interfering thoughts. They were also encouraged to utilize the relaxation skills which they had acquired. Prior to performance, subjects were given several minutes notice before their turn to perform in front of the group so that they would also experience the stress related to anticipating a stressor.

After participating in the program subjects were given an opportunity to discuss any problems encountered in applying program elements. The students were reminded that stress coping skills can be used in dealing

with a wide variety of anxiety arousing situations. They were encouraged to apply these coping skills in dealing with academic, on a regular basis, stressors. Table 1 reviews the content of the seven sessions of the Coping Skills Training Program.

Dependent Variables

A variety of measures were obtained as a preliminary basis for drawing inferences about the effects of the coping skills program on the subjects. Certain of these measures were used to assess changes in subjects' ability to deal with academically related stressors. Others were employed to assess more general changes that might occur. The instruments employed were the Test Anxiety Scale (Sarason, 1972), the State-Trait Anxiety Inventory (Spielherger, Gorsuch, and Lushene, 1970), the Locus of Control

Table 1
Content of Sessions in the Coping Skills Training Program

Session Number	Session Content
One	Pretesting Overview of Coping Skills Program Discussion of effects of stress (physiological and cognitive components) Videotaped Interview: Stress and the university student Handout: "Introduction to Student Stress Management Program."
Two	Homework: Self monitoring of stressful experiences Discussion of homework assignment and handout material Cognitive modeling: Test taking and question asking Discussion of role of self statements Homework: Enter into stressful situation, inhibit preoccupations and attend to task-relevant cues.
Three	Discussion of homework assignment Introduction to progressive relaxation Relaxation training exercises Homework: Practice exercises twice per day
Four	Discussion of any difficulties with relaxation Relaxation training exercises Discussion of role of relaxation in coping Homework: Continue practicing relaxation exercises
Five	Attentional training Cognitive modeling (emphasis on how to combine coping skills in dealing with stressors). Discussion of modeling tape
Six	Practice in coping with stress (group exercise) Discussion of any problems in coping and how to use coping skills
Seven	Overview of coping skills Discussion: Coping with academic stressors Post testing

Scale (Rotter, 1966), and a specially designed Coping Skills Rating Scale. This latter measure required subjects to indicate on a 7 point scale the degree to which they felt capable of coping with a variety of stressful situations (e.g. stressful situations in general, test taking situations, public speaking situations, social situations involving same and opposite sex, and university life in general). (Sarason & Johnson, 1976) Summer school grade point averages were also obtained whenever possible.

Procedure

Subjects were assigned either to the coping skills group, described above, or to a no treatment control group. Training in the coping skills group ($N = 9$) was conducted by a doctoral student in psychology who had been specifically trained in the procedures employed and who had participated in the programs' development. The coping skills training program was carried out in groups of 4 to 5 subjects each.

Pre and post treatment measures were obtained on subjects in the coping skills group employing the measures described above. The same measures were also obtained on subjects in the no treatment control group ($N = 10$). An attempt was made to obtain grade point averages for the summer term and for the last preceding quarter that subjects attended the University. Unfortunately for administrative reasons, it was possible to obtain summer grades for only six experimental and seven control subjects. Because many of the subjects had not been enrolled at the University of Washington during the Spring, a pre-post comparison for grades was not possible.

Analysis of the data was accomplished by employing analyses of covariance with pre-treatment scores on the various measures used as the covariate in each case.

Results

A test anxiety analysis of covariance using pre treatment Test Anxiety Scale scores as the covariate indicated a significant difference between treatment and control groups. An F of 8.28 was obtained, which with 1/16 degrees of freedom was significant beyond the .02 level of significance. Whereas the experimental group showed a decrement in Test Anxiety Scale scores of 6.55, the control group showed an increase of 1.10.

No significant differences were found between the two groups in terms of State-Trait Anxiety scores or the Locus of Control Scale.

With regard to ratings of coping abilities, subjects in the experimental group, as compared to controls, described themselves as being better able to cope with "stressful situations in general." ($F = 5.18$, df , 1/16, $P < .04$). Likewise, coping skills subjects reported being better able to cope with "test taking situations" ($F = 5.36$, df 1/16, $P < .04$). Subjects in the treatment group also reported being able to cope with "public speaking situations" at the end of the training program ($F = 6.0$, df 1/16, $P < .03$).

No differences were found between the two groups in their rated abilities in coping with social situations involving the same or opposite sex or in terms of their ratings of ability to cope with "university life in general". The mean summer quarter grade point average for a group of subjects who participated in the coping skills program was 3.2 and the comparable mean for control subjects was 2.5. With N 's of 6 and 7 respectively, the difference between these means was not significant.

Table 2 presents the pre- and post-means for the experimental and control groups for all dependent measures.

Table 2

Pre and Post Means on Dependent Measures for Treatment and Control Groups

Measure	Coping Skills		Control Group	
	Pre	Post	Pre	Post
Test anxiety	20.83	14.33	15.20	16.30
State anxiety	35.77	32.88	37.50	32.90
Trait anxiety	41.44	36.87	36.40	32.70
Locus of Control	8.00	8.55	8.70	6.20
Coping ability general	4.77	5.66	5.00	5.30
Coping ability tests	3.55	5.33	4.40	5.00
Coping ability public speaking	3.55	4.66	3.80	3.80
Coping ability opposite sex	5.66	6.00	5.50	6.10
Coping ability same sex	4.66	5.66	5.60	5.60
Coping ability University life	3.88	5.11	5.30	5.60

Discussion

The results of this pilot investigation suggest that the Coping Skills Training program brought about a number of significant changes in the participants. The experimental subjects showed a significant reduction in test anxiety and rated themselves as being better able to cope with test taking, public speaking, and stressful situations in general. The measures on which subjects in the treatment group displayed the greatest change were those measures most closely related to the specific content of the coping skills program. This result together with earlier pilot work and interviews with subjects suggests the importance of gearing coping skills programs to problems and topics which have face validity for persons. This means that training programs where possible should begin with problems that are real and pressing for participants and not consist solely of what is judged by others (even experts) as being in their best interests.

In this connection, it is important to remember that the subjects in this study were students who were concerned about their academic work and status. The students either were on academic probation or felt personally that they were academically deficient in certain respects. (There were no significant or near-significant differences on the dependent measures between the students who were on probation and those who participated in the program simply because of their own academic concerns.)

The present experimental program emphasized dealing with test taking situations. Cognitive modeling procedures were also included in order to depict appropriate coping thoughts and behavior in situations requiring verbal assertiveness under stressful circumstances. (for example, asking questions.) The fact that the observed changes on the part of subjects in

the experimental group were found for measures of test anxiety and ability to cope with public speaking situations and not for measures of general anxiety, locus of control, and ability to deal with social situations supports the need mentioned earlier for training programs to have face validity and relevance for participants.

Although in the predicted direction, the difference between the treatment and control groups in grade point average was not significant. In addition to the small N, the value of this dependent measure was seriously limited because the coping skills program was conducted during the summer quarter, in which students typically register for only one or two courses and tend to receive higher grades than those given during the regular academic year. The grade point average would probably be more sensitive during the regular school year when most subjects take several courses and are registered as regular students.

Information was obtained from students in the coping skills program concerning their subjective evaluation of the program. Subjects were asked a variety of questions regarding whether they would recommend the program to others displaying problems dealing with stress, what they felt should be added or deleted from the program, and the way in which they changed their coping strategies as a result of participating in the program. Responses were uniformly positive. All respondents indicated they would recommend the program to others. Most indicated that they had found relaxation training to be useful and that they were also finding the self-instructional cognitive approach to coping to be quite useful in focusing attention on tasks and in controlling self-defeating thoughts. No subjects suggested that any of the components be deleted from the program.

but a number of respondents did indicate that more sessions and a more intense involvement in the program would be helpful.

Results of this study suggest that the coping skills program was viewed as a valuable experience by participants and also suggest that the program resulted in significant changes in subjects' abilities to deal with specific academically related situations. Further studies are needed to refine this program and to determine the applicability of such a program with other groups and in dealing with other types of stressors. Further studies are also needed to determine whether such programs are in fact specific in their effects, the degree of generalization from them, and long term effects.

Stress management programs of this nature, dealing with both the physiological and cognitive components of anxiety, may be useful in training not only individuals currently under stress but also persons who are about to enter new and novel situations which may involve stress. As an extension of this research an additional study is presently underway which evaluates the effectiveness of a stress management program similar to the one described here, using as subjects beginning freshmen in the University of Washington's Educational Opportunities Program, whose students come from economically deprived backgrounds and who often have major academic deficiencies. A large proportion are minority students. Because of such factors it is felt that this group is likely to find entry into the academic community a noticeably stressful experience. The program underway is designed to enable these subjects to be better able to cope with this experience. Presentation of the results of this study is planned in a subsequent report.

As was indicated at the beginning of this report, the study reported was a pilot investigation. It would have been desirable to have larger number of subjects and a group that received an attention control condition. Yet the investigation that was conducted accomplished its main goal of permitting a test of the coping skills format. It was found that several relevant dependent variables seemed to be influenced by the program and interviews provided valuable information about the subjective reactions of participants to the program's content.

On the basis of the pilot work conducted the experiment with economically disadvantaged is now nearing completion. That study with a larger number of subjects goes beyond a two group experiment and includes a group that receives attention by means of a specially devised format. Having tested the coping skills idea with college students, the overall project can now be directed to the study of the stresses in complex organization and the exploration of a coping skills approach to stress reduction. Work has recently begun on this study using as subjects the personnel of a large urban police department. There are two dimensions to the police study. One involves introduction of a stress coping skills program into a Police Academy in which trainees acquire the knowledge that is basic to police work. The other is a study of all the sergeants in the police force. This group is especially interesting because the sergeants play such a key role in the functioning of the police organization.

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Appendix A

Introduction to the Student Stress Management Program

A number of individuals in the Psychology Department are presently in the process of developing a program in stress management. The program is designed to help college students develop coping skills which will enable them to deal more effectively with the stresses of university life and to generally function more efficiently. The program itself will involve participation in seven one-hour sessions plus some assignments related to various aspects of the program. It will also involve responding to some questionnaires and providing information that will enable us to evaluate the effectiveness of the program.

Prior to the beginning of the program, however, it would seem helpful to provide some preliminary information concerning the nature of stress in general, its effects on individuals, and some of the factors one needs to consider when attempting to cope with stressful situations. The sections to follow are designed to provide such information in an abbreviated form.

On the Nature of Stress

Many persons upon beginning college find that entering the academic community results in a significant amount of change in their lives to which they must adapt. Some must cope with being away from home for the first time. Most have to go through the process of making new friends and acquaintances. The rather impersonal nature of a large university may also be something that must be coped with. These factors as well as many others often make entering the academic community a rather stressful experience.

Changes in one's life related to school attendance or other events (e.g., loss of a loved one, marriage, divorce, etc.) require a certain degree of adaptation and social readjustment on the part of the person involved and must be coped with. To some extent all of us are continually being faced with new situations which change our lives to some degree and with which we must cope. (Attached is a brief case example of one person's experience in coping with new situations.)

As suggested above, change, whether it be related to college or other areas of one's life, may be stressful to a greater or lesser degree. The degree of stress may be particularly great if many changes occur within a limited period of time. This stress may in turn have a detrimental effect on the person's ability to deal effectively with new stressful situations which demand attention, and which must be coped with (e.g., taking exams, passing difficult courses, adjusting to a new job, etc.).

Stress seems to have a variety of effects on the individual. Some of these effects are primarily physiological while others are more cognitive in nature. It would appear that both physiological and cognitive factors are important to consider when one is examining the nature of stress as both seem to be involved in determining the nature of a person's emotional response to stressors. For example, there is research evidence to suggest that even

the exact emotion a person reports experiencing depends on how he cognitively labels his physiological arousal.

The physiological effects of stress may be reflected in increased heart rate, rapid breathing, sweating palms, increased muscular tension, and a general feeling of discomfort. As mentioned above, other effects of stress are primarily cognitive. Persons experiencing a great deal of stress are often quite preoccupied with themselves. They tend to engage in a great deal of self-oriented self-defeating thought which serves to further increase their level of arousal and to interfere with their performance. For example, in a testing situation where performance is being evaluated, the high stress person may be bothered by such thoughts as "If I fail this test I will probably fail the course," "People will really think I'm stupid if I don't do well," "I must not be as smart as the rest of the people in the class," etc. The person under a great deal of stress may be bothered by such self-defeating thoughts much of the time in a variety of situations. He may often worry about what will happen to him in the future, obsess over events which have happened in the past, and be greatly preoccupied with himself. Such self-oriented "worry responses" may seriously interfere with performance or one's ability to cope with new situations, as focusing on such thoughts results in a failure to fully attend to the task one is attempting to perform or to the details of the situation one is attempting to cope with. The more one engages in such self-oriented thought the less efficient his performance is likely to be in a variety of situations whether they be academic, social, or otherwise.

The previous statements suggest that cognitive factors may be quite important as they relate to stress. Not only may self-defeating thoughts interfere with performance but what people say (think) to themselves in the form of self-instructions, beliefs, and evaluations of situations also has a large effect on the way they respond to situations. Most emotional responses are the result, not of external events alone, but what we covertly tell ourselves about the events. For example, a student who responds to a low grade by telling himself it is a catastrophe and that it proves that he is worthless and stupid will clearly have a different emotional reaction and will display different behaviors than will another person who experiences the same event but tells himself, "So what, I'll do better next time." What we say to ourselves does make a difference. From this information concerning stress and its effects it would appear that to learn to deal effectively with stressful situations one must deal with both the physiological and cognitive aspects.

It might be pointed out that anxiety itself should not be viewed in an entirely negative light. While it may, at higher levels, interfere with performance and can be quite distressing to the individual it is possible for persons to learn to effectively cope with anxiety. Through training, anxiety may come to be facilitative as physiological reactions and self-statements can come to serve as cues for the individual to engage in appropriate coping behavior which will enhance performance.

Coping with Stress

There is evidence from a number of sources that individuals can learn to cope with stressful situations. From a review of the literature on the factors related to stress, it would appear that an optimal stress management program would involve learning a number of coping behaviors.

One behavior which seems important in coping involves learning to identify when one needs help with, or information about, a stressful situation. For example, obtaining knowledge about effective study habits may make taking tests much less stressful as such knowledge provides information concerning ways of preparing for a stressor. While this may appear somewhat obvious, many people experience much anxiety over situations when obtaining help or gaining information could alleviate much of the anxiety. For an even more obvious example, one might consider the situation of a student who observes some physical change in his/her body which causes concern and anxiety. The person may obsess and worry excessively over the condition, perhaps fearing that the bodily change is symptomatic of some dreaded disease. This extensive self-preoccupation may result in a much lower level of performance for the person as well as probably a considerable amount of anxiety. Perhaps months of worrying, anxiety, and lowered efficiency could be avoided by seeking help and information about the condition from a physician. Thus, appropriate help seeking and the gaining of information may enable persons to reduce stress and perhaps avoid unnecessary anxiety.

While learning to seek help when needed and to gain information about stressors may be helpful it would appear that to effectively cope with stress, one must learn skills necessary for dealing with the physiological and cognitive aspects of anxiety (e.g., self-oriented and self-defeating thought). One useful skill is that of relaxation. A special set of muscle exercises can be employed to enable the individual to learn to achieve deep states of relaxation. After learning this skill the person can learn to recognize those cues indicating increased anxiety and use this feedback as a cue to engage in relaxation responses. Evidence is also available to indicate that persons can be successfully taught to inhibit self-oriented and interfering thoughts and to attend to tasks they are attempting to deal with, and this improves performance.

As entering the university for the first time is likely to be somewhat stressful, it is felt that a program to help new students learn to cope with stress would be helpful and should have a positive effect on performance of subjects in the program. The present program is designed to teach students such coping skills in a systematic manner in order to enable students to achieve more self-control and a greater ability to cope with the stresses of university life and of life in general.

A CASE STUDY

Hartley Hale, Physician and Scientist. In his mid-thirties, Hartley Hale is chief resident of orthopedics in a major New York hospital--well on the road to establishing his medical career--is the father of three, dabbles in photography and copes with what life offers. The work "zestful" best describes his orientation. From rare experiences of dejection his spirits tend to bounce back quickly. He adapts. He is resilient.

What are the reasons for Hale's success? He attributes to luck the fact that he was able to do well in medicine, but luck is certainly an insufficient answer. Perhaps he did have unusual dexterity; this did show up in his childhood interest in mechanical things. But skill in medicine is not simply a manual skill. It involves qualities of boldness, confidence, self-reliance, willingness to assume responsibility in situations where life may be a stake. Hale did not sense that he possessed such qualities in any unusual measure. Like many people he took for granted many attributes that are responsible for success. But his successful behavior as a physician was not created suddenly as a response to the demands of his profession: his traits go far back in his life history. The profession of medicine influenced him in a favorable direction, bringing forth his steadier, more constructive qualities, permitting his disorganized rebelliousness to recede.

The roots for Hale's competent coping lie in his earlier developmental years. He grew up in the Midwest, in a conservative family--straight-laced, he recalls. Although the house was strictly run, there were no punishments which threatened possible loss of his parents' love. He viewed his father as a disciplinarian, but a reasonable one. In fact, Hale's confidence is based on early parental interest and discipline that did not threaten him with loss of parental love. Throughout childhood, Hale was helped to develop independence through parental encouragement--more from his father than from his mother--encouragement from kindergarten years when he built carts from blocks, through junior high school years when he built model planes, to college when he did cellular research.

While this period of growing up may sound smooth and uneventful, it had its intervals of ups and downs, it periods of equilibrium and disequilibrium. It did involve major stressful situations with which Hale coped competently. For example, he mastered the socially painful handicap of stuttering. He attributed this stuttering to the general insecurity in his home. His parents went through a difficult time with their marriage and at one point nearly separated. Hale recalled several years later: "I never felt that things were too safe and happy . . . the whole thing seemed to make my own future so uncertain." Hale remembered thinking that if he were "good," then his parents wouldn't fight. He then realized that he had to live his own life. Because of this stressful situation he developed more independence--actually, as a form of defiance. To cope with the fear of parental split-up, he sought strong support from friends; relationships with them helped to fortify his feelings of security and confidence

at a time when these feelings were very uncertain. He learned to rely heavily upon himself--to depend a great deal upon his power of action and mastery, his ability to attack and solve problems.

Throughout his growing up and early adulthood years, Hale faced life's stresses competently--maintaining his level of self-esteem. Yet when last interviewed, in his mid-thirties, he still had a certain feeling of inadequacy: "I never am quite as good as they think I am," he said. What Hale needed was proof that he could repeat his old triumphs over difficulties, that he could still rule his personality. Summing it up, Hale concluded: "I like the world as it is. For as it is it offers competition and insecurity, and it's the battle to overcome each of these that makes life worthwhile."

How Hartley Hale coped with many of the opportunities and problems that he encountered in his life is an instructive case history of the development of coping behavior. But Hale's life is barely half over; there are many more new coping situations in which he will find himself. He has to adjust to the physiological changes of his middle age, and to the aging of his parents; he has further career adjustments to make--leaving the hospital, teaching, opening a private practice. He has to assist his teen-age children to become responsible, well-adjusted adults; and he has to take fresh stock of his life. In later years, Hale will have to adjust to his own aging--decreased physical strength and health, retirement and possible isolation. Successful aging for Hale might be maintaining, as far and as long as possible, the activities and attitudes of middle age--making rounds at the hospital, continuing his bone-cell research. For another person, successful aging might take the form of disengagement from some of the more active roles of middle age, engagement in some other older age roles. And, inevitably, to all comes the need to cope with death--of a spouse, a friend, one's self.

Coping competently with life's stressful situations develops self-confidence and resiliency. Much of the zest for life is stimulated by the need to cope: to take responsibility, to seize opportunity, to meet challenge.

(from Coping with Stress, Roche Reports, 1975)

Appendix B
Videotaped Modeling Scene - Stress and Coping Skills Program
Question Asking

Scene: (Classroom) Student in lecture, not understanding point made by the instructor. Afraid to ask question for fear of looking foolish. Copes with self defeating thoughts, asks question to clarify point, gets answer and is reinforced.

Instructor (Lecturing)

As I indicated last time, today we will continue talking about ways of changing behaviors. We have already spoken about positive reinforcement and have indicated that one way to modify a behavior is to follow that behavior with a reward. If we reward or reinforce a behavior the behavior will tend to occur more frequently in the future.

A second way of changing behavior is by the use of punishment. If follow some behavior with an aversive stimulus (shock for example) it will tend to reduce the frequency of occurrence of that behavior.

Negative reinforcement is a third way the frequency of occurrence of a behavior can be modified. Negative reinforcement involves a change in behavior due to the removal of an aversive stimulus. It is clear that this is a very different procedure than punishment.

Continue with lecture but shift focus to model in classroom who is beginning to look restless.

Instructor (continuing)

An additional way of altering behavior is through extinction. To extinguish a behavior we simply remove the reinforcement that typically follows that behavior. If we remove the reward we find that the behavior tends to decrease.

Focus on model's self statements

Model:

Lets see - positive reinforcement, punishment, negative reinforcement all ways of changing behavior.

I think I understand what positive reinforcement is but I'm not so sure about the distinction between negative reinforcement and punishment.

That didn't seem clear to me at all.

I think I know what punishment is, but the way he described it, it sounded like negative reinforcement was the same thing.

I'd better ask him about the difference between the two - The test over this material is day after tomorrow and I know he's going to expect us to know these terms. Pause,

He's already talking about something else now.

I'd better not ask him to explain it again. He'd probably just think I was stupid or that I wasn't listening.

Everyone else must have understood what he was saying - they didn't ask him about it. If I ask they will probably think I'm dumb too.

If I can't understand a simple psychology lecture I wonder if I really should be in college. I must be the only one here who doesn't understand what's going on. There seems to be quite a few things I have trouble with.

What am I doing? I've been sitting here obsessing about myself for ten minutes and haven't heard anything he's been saying. These darned thoughts

make it that much more difficult for me to understand what's happening.
If I listened to the lecture instead of myself I might have understood him even though he wasn't too clear.

I'd better ask him what he meant and put an end to this nonsense.
There's probably at least a few others who didn't understand him either, and who are hesitant to ask.

Well, here goes - lets wait for a pause when it will be appropriate to ask.

Good, Nows the time.

MODEL: raises hand

"A few minutes ago you were talking about punishment and negative reinforcement. I'm not sure I really understand the difference between the two. Could you go over that again?"

Instructor:

Sure, I'm glad you asked that. I guess the difference between the two is rather difficult to understand. Lots of people have trouble distinguishing between those two terms.

I guess maybe I wasn't too clear in my distinction between the two either.

Anytime I'm that ambiguous in the future somebody needs to ask me to explain what I'm talking about.

OK, let me go to the board and illustrate the difference between the two - a little bit clearer this time I hope.

Shift to model

Model:(self statements)

Gee, I'm Glad I asked. That was definitely the thing to do. Probably nobody else understood it either. I guess I'm the only one with enough nerve to ask.

Well I guess I had better listen carefully to this explanation and attend to what he is saying so I can understand it this time.

Focus on Instructor getting ready to explain and fade out.

Modeling Scene - Stress and Coping Skills
Exam Taking

Scene: Model taking exam in classroom setting. Becomes anxious over nature of questions, displays physical indicators of anxiety and self defeating thoughts which become more and more frequent. Inhibits self defeating thoughts, attends to task, self reinforcement.

Focus on small class with instructor in front of class. Shift to model who is obviously anxious over exam. (Moving around in seat, wiping palms etc.)

Model (self statements)

Lets see the answer to this one must be A - or is it B. Gee I'm not really sure. Both of them can't be right. This is the third question in a row that I haven't been sure of.

I know I studied enough for the exam but I just can't seem to settle on the right answer. Boy I'm really beginning to freeze up.

Well; lets see about this next one-

"Does a tree falling in an uninhabited forest make a noise?"

- A. Yes
- B. No
- C. The answer depends on the operational definition of noise.
- D. There's no way to tell

Boy thats a stupid question if I've ever seen one. I can't believe I'm going to end up failing a test because of questions like this one. I don't know why they can't ask questions that are at least somewhat meaningful. Damn this is a stupid question.

Who cares whether anyone can hear a tree falling in a forest or not. That doesn't have anything to do with anything.

Focus on another student leaving and handing in paper

Model: (Self statements)

Don't tell me he's finished already - we've only been here 30 minutes. Thirty minutes and I'm not even half finished. I'll never get through in time. I'm going to flunk this test for sure.

If I really knew the material I'd be finished by now too. I must really not belong here anyway.

I don't know what will happen if I flunk this test. If this happens very often I'm sure to end up on probation. Then people really will think I'm stupid. I don't know how I could explain that to my folks - that I let them down like that.

Pause: Hey I've got to pull myself together - thinking these kinds of thoughts isn't getting the job done.

I'm sure not to get finished if I keep on doing what I'm doing now.

Now just take a deep breath (model inhale and exhale). Now relax. Cut out all those stupid thoughts and pay close attention to what I'm doing. Just read the question. Don't think about anything but the question and choose the best answer I can.

OK back to the questions

Does a tree falling in an uninhabited forest make a noise?

That is a stupid question - but I can get mad about it later. Getting mad doesn't help my grade now it just gets me upset.

Well what's the answer?

Lets see, I don't think A or B are right.

C. The answer depends on the operational definition of noise.

I remember talking about operational definitions in class. I guess it makes sense. Whether a falling tree makes a noise or not would depend on how one chooses to define noise. It must be C.

Appendix B
Page 6

Not too fast - how about D. At least read it - - no C must be the answer.

Got that one out of the way. Just take one at a time.

OK next question. Just attend to what I am doing - no negative thoughts - just answer the question.

Lets see now "Gordon Allport could best be described as a:

- A. Freudian
- B. Gestalt Psychologist
- C. Behaviorist
- D. None of the above

Lets see, Allport did a lot of writing about traits of personality, how about A.

No, Freud believed in psychoanalytic principles. Freudians aren't big on the idea of traits.

B. Gestalt Psychologist - Gestalt psychologists certainly weren't interested in traits. Forget B.

C. Behaviorist - Now I know they place a big emphasis on learning and situational determinants of behavior. If he was a strong behaviorist he wouldn't be writing books about trait psychology.

So D. Must be the one.

That was better - I may pass this silly test after all.

Just one question at a time and just pay attention to the Question I am answering and nothing else. Thats the way to do it.

End script.

Appendix C
How to Learn Deep Muscular Relaxation

Ronald E. Smith
University of Washington

The ability to relax deeply and quickly is an extremely useful coping response in dealing with stress and other maladaptive emotions. The following procedure should allow you to learn this important self-control behavior within a week or less. Once mastered, the relaxation response can be used to cope with stress or tension as soon as you feel it beginning to occur.

It is recommended that the relaxation exercises be practiced at least twice a day until they are mastered. The exercises will initially require about thirty minutes of practice, but as you master the technique, the time required will become progressively shorter. Practice should be carried out in a comfortable chair, sofa, or bed, and in a relatively quiet atmosphere.

1. Get as comfortable as possible. Tight clothing should be loosened and your legs should not be crossed. Take a deep breath, let it out slowly, and become as relaxed as possible.
2. Raise your arms and extend them out in front of you. Now make a fist with both hands as hard as you can. Notice the uncomfortable tension in your hands and fingers. Hold the tension for five seconds, then let the tension out half way and hold for an additional five seconds. Notice the decrease in tension but also concentrate on the tension that is still present. Then let your hands relax completely. Notice how the tension and discomfort drain from your hands and are replaced by sensations of comfort and relaxation. Focus on the contrast between the tension you felt and the relaxation you now feel. Concentrate on relaxing your hands completely for 10-15 seconds.
3. Tense your upper arms hard for five seconds. Focus on the feeling of tension. Then let the tension out half way for an additional five seconds. Again, focus on the tension that is still present. Now relax your upper arms completely for 10-15 seconds and focus carefully on the developing relaxation. Let your arms rest limply at your sides.
4. With your toes supported and your legs relaxed, dig the toes of your feet in the bottom of your shoes. After five seconds, relax the toes half way and hold the reduced tension for an additional five seconds. Then relax your toes completely and focus on the relaxation spreading into the toes. Continue relaxing your toes for 10-15 seconds.
5. Point your toes downward so that the feet and calves are tensed. Hold the tension hard for five seconds, let it out half way for an additional five seconds, and then relax your feet and calves completely for 10-15 seconds.

6. Extend your legs and raise them approximately six inches above the floor and tense your thigh muscles. Hold the tension for five seconds, let it out half way for an additional five seconds, and then relax your thighs completely. Concentrate on totally relaxing your feet, calves, and thighs for about 30 seconds.
7. Tense your buttock muscles hard for five seconds, then let the tension out half way for another five seconds. Finally, relax your buttocks completely and focus on the sensations of heaviness and relaxation. Concentrate on also relaxing the other muscle groups that you have already dealt with.
8. Tense your stomach muscles as hard as possible for five seconds and concentrate on the tension. Then let the tension out half way for an additional five seconds before relaxing your stomach muscles completely. Focus on the spreading relaxation until your stomach muscles are completely relaxed.
9. Press the palms of your hands together and push so as to tense the chest and shoulder muscles. Hold the tension for five seconds, then let the tension out half way for an additional five seconds. Now relax the muscles completely and concentrate on the relaxation until they are completely loose and relaxed. Concentrate also on the muscle groups that have been previously relaxed.
10. Push your shoulders back as far as possible so as to tense your back muscles. Let the tension out half way after five seconds, hold the reduced tension and focus on it carefully for an additional five seconds, and then relax your back and shoulder muscles completely. Focus on the spreading relaxation until they are completely relaxed.
11. While keeping the muscles of your torso, arms, and legs relaxed, tense your neck muscles by bringing your head forward until your chin digs into your chest. Hold for five seconds, release the tension half way for another five seconds, and then relax your neck completely. Allow your head to hang comfortably while you focus on the relaxation developing in your neck muscles.
12. Clench your teeth and notice the tension in the muscles of your jaws. After five seconds, let the tension out half way for five seconds, and then relax completely. Let your mouth relax completely with your lips slightly parted and concentrate on totally relaxing these muscles for 10-15 seconds.
13. Tense your tongue by pushing it into the roof of your mouth as hard as possible. Hold for five seconds, then let the tension out half way and hold for an additional five seconds, and then relax your tongue completely. Focus now on completely relaxing the muscles of your neck, jaw, and tongue.

14. With your eyes closed, squint and rotate your eyeballs upward as if you were looking up. Hold the tension for five seconds, then release it half way for an additional five seconds. Then relax your eyes completely. Focus on the relaxation developing in your eyes and also concentrate on relaxing your other facial muscles.
15. Wrinkle your forehead and scalp as hard as possible. Hold the tension for five seconds, then release half way for another five seconds, and then relax your scalp and forehead completely, as always focusing on the developing feeling of relaxation and contrasting it with the tension which existed earlier. Concentrate now for about a minute on relaxing all of the muscles of your body.
16. Controlled breathing is one of the most important elements of the relaxation response, since one can bring forth a feeling of relaxation by correct breathing. Take a series of short inhalations, about one per second, until the chest is filled. Hold for about five seconds, then exhale slowly for about ten seconds while thinking silently to yourself the word "relax" or "calm." Think or picture the word to yourself as you slowly let out your breath. Repeat the process at least five times, each time striving to deepen the state of relaxation which you're experiencing.

The deep controlled breathing is very important and should be practiced as frequently as possible. Research has shown that this type of breathing can quickly lower bodily arousal and tension. It is suggested that in subsequent relaxation practice sessions, the deep breathing exercise be employed between each muscle group exercise so as to deepen the state of relaxation and allow you to practice muscle relaxation in conjunction with the deep breathing.

Appendix D

Attentional Training

Stress and Coping Skills Program

General Information

This phase of the program is designed to aid subjects in learning to fully focus their attention on relevant tasks and to inhibit interfering thoughts. Again, it should be stressed that persons do talk to themselves and that what they say may either enhance or interfere with performance on academic tasks or other tasks as well. Subjects should be encouraged to talk to themselves while engaging in tasks and be encouraged to inhibit self-preoccupying thoughts.

Instructions to Subjects

Up to this point we have on numerous occasions emphasized the role of self statements as they relate to performance. You have heard about them in the lecture on stress in session one. You have read about them in the handout on the effects of stress, and you have seen on the videotapes how such self-preoccupying thoughts and statements can interfere with best performance and performance in other academic situations.

So far you have been given training in relaxation and how to use it, and you should be well on your way to learning how to effectively deal with the physiological aspects of stress. Today we want to begin focusing on the cognitive aspects of coping to a greater degree by giving you some initial training in attending and in inhibiting interfering responses. This is designed to help you learn to focus your attention only on tasks at hand rather than on self oriented thoughts. As there is insufficient time to complete all of the attentional training within these training sessions, it will be necessary for you to practice employing these skills on your own, as often as possible, when working on academic tasks. You will find that such attentional focusing will greatly enhance your performance if employed regularly.

Today we will begin by having you work on some arithmetic problems. The approach that you will be instructed in is designed to help you focus full attention on the arithmetic operation in each problem. The important thing for you to understand about the approach is that you are to Talk to yourself Constantly about what you are doing. The approach is probably similar in many respects to the one you ordinarily use. The emphasis here, however, is on the Constant use of the approach. You are to talk to yourself only about the problems and you are to do so continuously. We are not attempting to teach new mathematical techniques for doing the problems, but rather to stress that you should be focusing your full attention on the problem at hand.

To give you an idea of what we mean, I will take you through the first problem in the problem booklet while talking aloud about each of the arithmetical operations. Write down the numbers in the appropriate places when I say them.

21 goes into 36 one time. One times 21 is 21. 21 from 36 is 15. Bring down 2. 21 into 152 goes 7 times. 7 times 21 is 147. 147 from 152 is 5. Decimal point after 7. Bring down zero. 21 into 50 goes 2 times. 2 times 21 is 42. 42 from 50 is 8. 8 is less than half of 21. The answer to one correct decimal place is 17.2.

To be certain that you have got the idea of talking to yourself about the problems, I would like each of you to do one of the practice problems while talking aloud in the same way that I did. Again, it is stressed that we are not teaching new mathematical techniques. If the technique you use differs slightly from that which I just used, continue to use the method you are familiar with. The important point is that you are to talk aloud about what you are doing. All of the thoughts which come to mind while working the problem should be verbalized. O.K. Let's begin. Each of you should do one problem

Have each subject talk through one problem from the practice problem set. Note the occurrence of any non-task-related responses and encourage subjects to attend fully to the task and to inhibit interfering thoughts.

O.K. Now I would like for each of you to practice by talking to yourself silently while working an additional five problems in the test booklet. Remember, talk to yourself constantly concerning the operations involved in the problem. Attend to the task completely and inhibit any interfering thoughts which may occur.

After all Ss finish, check for any problems.

Good. Now that you have the idea, you should practice this every chance you get while working on homework, while taking exams, and while engaging in other tasks which demand attention. Remember, talk to yourself while performing the task, but only about the task itself. Shut out those interfering responses. With a little practice, I think you will find that this will become easier and easier.

Appendix E

Modeling Scene - Stress and Coping Skills

SCENE Student participating in psychology experiment involving test taking with threat of shock. Anticipates, confronts, and copes with stress-reinforces self for coping.

Subject enters room where experimenter is waiting in front of apparatus which seems capable of shocking someone.

Subject: Hi. I'm Thomas Adams and I am here to participate in a psychology experiment.

Experimenter: Thomas Adams (looks at paper) mmmh you seem to be on the list. You're right on time. Come on in and have a seat.

Subject sits down in front of apparatus.

Subject: What's this study all about?

Experimenter: Well, we are interested in assessing the performance of subjects under stressful situations. We will be having you sit here in front of this machine with electrodes placed on one of your legs. We will then want you to take this basic arithmetic test which we have here. It involves problems of division, addition, multiplication, and subtraction, which vary with regard to their difficulty level.

There are some things I should tell you about the study before you begin. One is that you may receive an electric shock to your leg on one or more occasions during the second five minutes of the ten minute session. The second thing is that to encourage you to perform as rapidly and as accurately as possible, you will receive a dollar for each two correct responses. By the way, with regard to the shock, there will be no suggestion as to when the shock will occur. However, the more time that elapses prior to the shock, the more intense the shock when it does come.

Do you think this is an experiment you want to participate in? You know that participation is strictly voluntary.

Subject: How much money is it possible to earn?

Experimenter: Let's see. There are 20 problems all together. It would be possible to earn \$10 if you were able to get all of them right in the ten minute time period.

Subject: Well, this really isn't the type of study that I had hoped for. I'm really sort of afraid of shocks but I do need the money. I--I guess I'll try it. I can stop any time I want to though, isn't that right?

Experimenter: That's right.

Experimenter: O.K. Let's put the electrodes on (appear to put electrode on leg of subject). Now here is the test booklet--good luck--I'll be back in about 10 minutes to see how you've done.

Subject: O.K.

Subject sitting in front of machine with test in front of him looking obviously anxious (moving about in seat, wiping palms, etc.)

Subject: (self statements)

Well, I guess I had better get started.

Looks at paper, then stares off into space and pauses for a moment.
(Self statements)

I wonder how strong the shock will be. I remember once before when I got shocked it really hurt--bad. Wish I knew how many times you get shocked. I'm not sure I could handle a lot of real strong shocks. I shouldn't have ever signed up for this study..

I can't believe it. My heart is already beating like mad and my palms are just as wet as they can be. I sure am getting anxious. I'm getting a lot of those interfering thoughts again, too. I'm sitting here worrying about the shock and getting all up tight not getting the problems done.

I know the shock is coming but I can't let worrying about it mess up my performance.

I've got to pull myself together--just take a deep breath--now just relax.

No negative self statements--just think rationally. Worry won't help anything.

O.K., now what is it that I have to do? Just attend to the problems and no negative thoughts.

This one's not bad at all. $3 \times 55 = ?$ O.K. 3 times 5 is 15. Bring down the 5 and carry the 1. 3×5 equals 15 plus one = 16. O.K. 165 must be the answer. Now just one at a time.

Film subject continuing to work on problem but becoming progressively more anxious.

That's nine out of the way. The problems aren't all that bad but I'm getting all anxious again. My palms are sweating.

I can hardly swallow, and I've got that tight feeling in the pit of my stomach again (becomes obviously upset). I'm not sure I can handle this--that shock is going to be coming any minute. I'm not sure I need the money that bad. It's this waiting for the shock that's really getting to me. It's driving me crazy.

Hey, I'm starting to get overwhelmed about this whole thing and it's not really that big of a deal. This time tomorrow I won't know or care whether I got shocked or not.

I'm just not going to give into these feelings. I know I can cope with them if I just put my mind to it. I've coped with tougher situations than this before.

Don't try to eliminate the anxiety completely. Just keep it manageable. All this will be over in a few minutes.

The shock probably won't even turn out to be as bad as I've made it out to be.

If I think only about the problems I can't think about the shock.

Take another good deep breath. Just relax and attend to the problems.

Here goes-- $99 + 37 + ?$ Good, another easy one.

9 plus 7 is 16. Bring down the 6 and carry the 1.

Ouch! There is the shock. It's not exactly fun but not all that bad. Forget it--now back to the test.

Where was I? $9 \text{ plus } 3 = 12 \text{ plus } 1 = 13$. $99 \text{ plus } 37 = 136$.

Now I'm on my way.

Now what's the next one? Just take one at a time. Relax and pay attention only to the problems.

Film subject working on problems

(Self statements)

Gee, that's number 20--I actually got finished. (Have subject appear to finish and look up from test.)

ENTER EXPERIMENTER

Experimenter: Ah, you finished them all (looks at test as if checking answers). You got all but four of them right--looks like you have got some money coming. You can come by here any time after 12 tomorrow and pick up your check. Thanks again.

Subject (self statements as he walks out of door)

I really made too big a deal about all of this. That wasn't nearly as bad as I expected.

I think I am really getting to the point where I can handle myself pretty well when the going gets tough. I am really able to control myself now.

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