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STRESS COPING ABILITIES OF INDIVIDUALS  
HIGH AND LOW IN SOCIAL ANXIETY

BY

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A THESIS  
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RUNNING HEAD: COPING ABILITIES

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BY  
RITA MARIE WITTMER

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Abstract

The purpose of this study was to investigate the nature of socially anxious persons' tendencies to cope with social stress and to examine the differences in the coping abilities of individuals high and low in social anxiety. The differential coping potential of the cognitive coping technique reversal of affect was tested.

Sixty four (32 control, 32 treatment) college students participated in the pretest and posttest of the experiment in which they self-disclosed information in a stressful situation. Self-report, physiological and behavioral measures of anxiety were recorded. Subjects in the treatment group received the coping skills training to deal with the stressor. It was hypothesized that the treatment groups would show a decrease in anxiety measured during disclosure, while control groups would show no change in coping responses. Additionally, it was hypothesized that subjects low in social anxiety would cope better with the social stress than would subjects high in social anxiety. A sex factor was included to assess differences between males and females in their ability to cope.

Results indicate that the reversal of affect technique was effective in reducing self-reported anxiety in social situations, but reductions in anxiety were not found using physiological or behavioral measures. A differential coping ability of individuals

high and low in social anxiety was not found. No sex differences were found. It was concluded that the cognitive coping strategy used is effective in reducing self-reported anxiety. This conclusion is discussed in terms of the efficacy of coping skills training in clinical treatment and in terms of direction of future research.

Stress Coping Abilities of Individuals  
High and Low in Social Anxiety

Heterosexual social anxiety is a prevalent problem among college students (Klaus, Hersen, and Bellack, 1977). This problem is manifested in a variety of ways including difficulties in heterosexual relationships, dating anxiety, loneliness, and shyness. In past research, efforts have been made to identify personality characteristics, social and communication skills, and specific behaviors that differentiate socially anxious individuals from non-socially anxious ones. The present investigation proposes to extend this base of information by studying differences in the coping abilities of high and low socially anxious people.

The literature on the topic of differences in social anxiety has revealed some interesting results. The personality characteristics most frequently associated with social anxiety are a lack of assertiveness, lack of self esteem, and social avoidance and incompetence. Mitchell and Orr (1976), found that socially anxious individuals report a higher level of anxiety and have a significantly higher tendency to avoid opposite-sex situations than do individuals who experience little social anxiety. Curran, Little and Gilbert (1978) found that males high in social anxiety fail to initiate approach behavior to positive approach cues offered by females. Glass, Merluzzi, and Cacioppo (1979) found that

high socially anxious male subjects showed more state anxiety in social situations than did men low in social anxiety. The individuals high in social anxiety rated themselves as less active in social situations. When asked to anticipate a social interaction, the socially anxious subjects rated the impending interaction more negatively than did a low anxious group. These researchers also found a significant correlation between state anxiety, the ratings of the subject's self evaluation, and the number of the subject's negative self statements.

Heterosexual social anxiety is not exclusive to males. However, there is not as much research on women with social anxiety problems. Greenwald (1978) in assessing behaviors of high and low dating college women, found that women who felt somewhat anxious or very anxious in contacts with men report low self confidence and less assertiveness than did high frequency daters. Jaremko, Myers, and Daner (1979) replicated these findings with women and also found that socially anxious women showed less appropriate voice and affective behaviors during social interaction. It appears, however, that more research is needed with women as subjects. The present study will include a separate analysis of women.

Social anxiety also seems to be related to a negative self image. Mitchell and Orr (1976) suggested that a self-rated negative physical image is related to higher levels of heterosexual difficulties. Persons who rated themselves as physically unat-



tractive reported that others would judge them to be less socially skilled than individuals who rated themselves as physically attractive. The self-rated unattractive persons also had a higher level of anxiety and a tendency to avoid opposite-sex situations more than self-rated attractive persons.

It thus appears that there are a number of personality and behavioral differences between high and low socially anxious people. This area of research is not, however, without problems. Some important methodological issues have been raised. A number of procedures have been used to assess the characteristics of high socially anxious individuals. Farrell, Mariotti, Conger, Curran and Wallender (1979) examined several frequently used screening and assessment instruments to determine their reliability, their interrelationships, and the potential influence of factors such as judges, situations and methods of observations on results. They found the relationship between anxiety and social skills varied among different methodologies and that self-report and judges' ratings of anxiety and social skill were only moderately generalizable. They found that significant portions of the variance were influenced by modes of measurement. The authors concluded that multi-method assessment is required in social anxiety research. These and other problems (Arkowitz, 1977) have led researchers in this area to look in other places for treatment-relevant questions. For example, researchers have sought to reveal the nature and extent of coping abilities of various

groups of people (Houston, 1977; Jaremko and Lindsey, 1979). The present study proposes to investigate the coping abilities of high and low socially anxious people.

That coping abilities are an important aspect in anxiety control is shown by considering the social anxiety treatment literature. Systematic desensitization appears to be only minimally effective in treating social anxiety (Orr, Mitchell, and Hall, 1975; Curran and Gilbert, 1975). Skills training approaches have also been less than comprehensive (Jaremko, in press). However, treatment programs that include a component of anxiety coping skills training seems to be quite promising (Jaremko, Myers, and Jaremko, 1979; Kanter and Goldfried, 1979). Since methods of improving coping skills seems to be a direction for future treatment, it seems appropriate to assess the differences in coping abilities between high and low socially anxious people.

The purpose of this experiment was to investigate the nature of socially anxious persons' tendencies to cope with social stress. In this experiment, coping was operationally defined as a reduction in anxiety level, inferred from introspective, physiological, and behavioral measures taken in the presence of a stressful situation. Self-disclosure served as the social stressor. Rubin (1973) found that individuals are apt to experience anxiety when engaging in intimate self-disclosure. It was reasoned that disclosing intimate aspects of the self to a member of the opposite sex produced stress with which the person could attempt to cope.

It may be that socially anxious people cope differently with such social stress. The present study tested the differential coping potential of a technique called "reversal of affect" (Jaremko, 1978; Jaremko and Lindsey, 1979). This technique calls for the person to view the positive aspects of a stressor and has been shown to be an effective cognitive coping technique for coping with pain (Jaremko, 1978), test anxiety (Houston, 1977), and other stressors.

A number of investigators have used the Social Avoidance and Distance Scale (SAD) (Watson and Friend, 1969) to differentiate high and low socially anxious people (Borkevec, Fleishman, and Caputo, 1973; Glass, Merluzzi and Cacioppo, 1979). Since the SAD has been used before with success, it was used in the present study to differentiate people high and low in social anxiety.

It was hypothesized that groups which received the reversal of affect training would show a decrease in anxiety measured during disclosure, while control groups would show no change in coping responses. Additionally, it was hypothesized that non-socially anxious subjects (low in social anxiety) would cope better with the social stress of self-disclosure than would socially anxious subjects (high in social anxiety). A sex factor was included to assess any differences between males and females in their ability to cope with the stressor.

### Method

Subjects. One hundred twenty seven psychology undergraduate students participated in the experiment. All but six subjects received one hour of research credit for participation. Due to a lack of socially anxious females from the undergraduate pool, these six subjects were recruited from a known population of socially anxious females. The SAD was used as the criterion for determining social anxiety. The cutoffs for males were three for low anxiety and nine for high anxiety. For females the cutoffs were three for low and six for high. The means and standard deviations (in parentheses) for the high and low sample groups respectively were: males 13.24 (4.71), 2.11 (.81); females 10.71 (5.16), 2.06 (.83); total 11.97 (5.10), 2.08 (.82). These cutoffs were established by testing the entire sample and then determining the upper and lower one-third of the distributions. It should be noted that these cutoffs were lower than those used in previous research (e.g., Borkevec, et al. (1973) used the highest 25% for high and lowest 25% for low). Sixty-eight students met the cutoffs criteria. They were divided into eight groups with eight subjects in each group. In groups consisting of more than eight subjects, that is, where more than eight subjects reached the cutoffs for any particular group, subjects within the group were randomly chosen to remain and data for the extra subjects was eliminated from the analyses. The data are based on sixty

four subjects. The experimental groups were comprised of eight males and eight females high in social anxiety and eight males and eight females low in social anxiety. An additional eight males and eight females high in social anxiety and eight males and eight females low in social anxiety served as a control group. Subjects were assigned to experimental or control groups using an alternating method, that is, every other subject was assigned to the experimental group based on order of participation. Subjects were unaware of the experimental condition to which they had been assigned.

Apparatus. After completing an informed consent agreement (Appendix A), the SAD was administered to discriminate high and low socially anxious subjects (Appendix B). During the pretest, each subject was given the 25-Item Self-Disclosure Questionnaire (Jourard, 1971) (Appendix C). A tape recorder was used to record the subjects' self-disclosure. During the disclosure a Cyborg J42 Feedback Thermometer was used to measure changes in skin temperature, and a stop watch was used to time appropriate intervals. An intercom system was set up between two rooms, one used by the subject and the other used by the experimenter. In this manner, subjects and experimenter could verbally communicate when appropriate. Following the self-disclosure, subjects were given the State Form of the State Trait Anxiety Inventory (Spielberger, et al., 1970) (Appendix D). A brief description of the reversal of affect coping technique (Appendix E) was given to sub-

jects in the experimental condition prior to the posttest.

Procedure. In individual sessions, each subject was first given a consent/release form to sign, providing name, sex, psychology professor, phone number and information pertaining to the requirements of participation in the experiment (Appendix A). The SAD (Appendix B) was administered to differentiate persons with high and low social anxiety. The SAD scores for subjects were not tabulated until the experimental procedure was completed, so that the experimenter would be blind to the anxiety classification of subjects. The subjects were then given the 25-Item Self-Disclosure Questionnaire (SDQ) (Jourard, 1971) (Appendix C). Subjects were instructed to indicate, by use of a check mark, the six items on the SDQ that were most intimate to them. They were then asked to rank order the six items, with 1 being the most intimate and 6 being the least intimate.

Pretest: Subjects were asked to self-disclose personal information about the items that they ranked as numbers 1, 3 and 5 in that order, while an audiotape of their disclosure was being made. The experimenter was not present during the disclosure, however, it was explained to each subject that a student of the opposite sex was sitting in the room next door with the experimenter and would be listening to the disclosure and evaluating the subject on the basis of the disclosure. Actually, there was no one in the room next door, but the subject was told so in order to increase the stress value of the self-disclosure task. Debrief-

ing followed the experimental participation of each subject and the need for this deception was explained and procedures were established to ameliorate any untoward effects caused by either the deception or the disclosures (Appendix F).

Following these instructions, the sensors for the skin temperature thermometer were attached to the subject's right index finger. The subject was told to sit quietly for a few seconds and to begin disclosure when the experimenter signaled through the intercom. Finally the subject was instructed to turn off the microphone when he/she was finished the disclosure and was asked to say aloud that he/she was finished so that the experimenter knew that the subject had not merely paused. The experimenter then left the room and began recording the subject's skin temperature every ten seconds. After four baseline recordings, the experimenter instructed the subject to begin disclosure. Skin temperatures were recorded every ten seconds until the subject indicated the end of disclosure. After the disclosure, the subjects completed the State part of the State Trait Anxiety Inventory (Spielberger, et al., 1970).

Posttest: Following the pretest, the subjects engaged in a posttest to assess the effects of the cognitive coping skill, reversal of affect. Subjects in the experimental groups were trained to use the coping technique of reversal of affect. The subjects were given a written description of this technique to read while the experimenter read the description aloud (Appendix E).

After reading the description, a brief discussion followed in which the experimenter gave some examples of the use of this technique. The experimenter applied the reversal of affect technique to social stress and discussed Socratically with the subject the advantages of using the technique in social situations. Finally it was explained that this technique could be applied to self-disclosure. The advantages of self-disclosure were discussed and specific examples of self-statements reflecting the strategy were developed. The training process took two minutes. Subjects in the control groups sat quietly for two minutes in between the pretest and posttest. These groups were included to control for the effects of merely repeating the self-disclosure task. All subjects were then instructed to disclose information about the items that they ranked as numbers 2, 4, and 6 on the SDQ. The same measurement procedures used in the pretest were then repeated. Appendix G is a Flow Chart Diagram of the Procedure.

Data Analysis: Data were exposed to a four-way analysis of variance with repeated measures on one factor. The factors in this  $2 \times 2 \times 2 \times 2$  design were sex  $\times$  social anxiety level  $\times$  treatment groups  $\times$  trials. Each dependent variable was subjected to this analysis. In all there were three dependent variables: State Trait Anxiety Inventory A State scores (STAI) after disclosure, skin temperature data (a difference score representing



the result of subtracting the mean of the four baseline readings (subtractor) from the mean of the readings during the disclosure (subtrahend); a constant of 1.96 was added to each difference score to eliminate negative scores. The constant was the highest negative score obtained.), and a rating of the intimacy of the self-disclosure information. The ratings of the self-disclosure intimacy were done by two independent judges, one male and one female, who were blind to the subjects' placement on any factor with the exception of sex which was obvious from the voice of the subject on the disclosure. Raters were trained by the experimenter in one session using practice disclosure tapes. The ratings proceeded along the lines of a modified version of the Haymes rating scale used by Jourard (1971). Fifteen second segments of tape were rated on a scale of 0 to 5 with 0 being less intimate and 5 the most intimate. The sum of four 15 second segments was the intimacy score of each rater. An intimacy score for each subject was obtained by averaging the scores assigned by each rater. Inter-rater reliability was computed by a correlation between the two rater's scores for each subject ( $r = .69$ ). Appendix L is a description of the rating procedure.

### Results

Pearson product-moment correlations were performed on the subjects' scores on the STAI, skin temperature and intimacy ratings. These correlations are summarized in Table 1. In-

spection of this table reveals that none of the dependent measures were significantly correlated with each other.

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Insert Table 1 about here

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Each dependent variable was subjected to the four-way analysis of variance with repeated measures on trials. The means and standard deviations for these measures are shown in Table 2. The summary tables of the analyses of variance are presented in Appendices H - J.

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Insert Table 2 about here

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The F max test for each dependent measure was not significant and the variances were assumed to be homogeneous.

The pretest scores of each treatment group, collapsed across sex and SAD level, were analyzed and found to be not significantly different from each other on any of the three measures (STAI:  $t(61) = 1.24, p > .05$ ; ST:  $t = 1.36, p > .05$ ; Intimacy:  $t(61) = .36, p > .05$ ). Thus, the groups appear to be randomly assigned and equal at pretest. The pretest scores of the SAD groups, collapsed across sex and treatment, were analyzed and found to be different on the STAI data ( $t(56) = 4.81, p < .0001$ ) but not on the ST ( $t = .13, p > .05$ ) or on the intimacy ( $t = 1.25, p > .05$ ). High SAD subjects scored higher on

the STAI at pretest, an expected result; but SAD groups did not differ on the other measures, an unexpected finding and perhaps indicative of either the failure to obtain contrasted groups on the SAD factor or the inability of the skin temperature and intimacy measures to discriminate adequately. The pretest scores of the sex groups, collapsed across SAD level and treatment were not different from each other (STAI:  $t(56) = .29, p > .05$ ; ST:  $t = .43, p > .05$ ; intimacy  $t = 1.18, p > .05$ ).

The analysis of State Trait Anxiety Inventory A State scores revealed a significant trials  $\times$  treatment interaction ( $F(1, 56) = 5.85, p < .01$ ). T-tests were conducted to test the simple effects of this interaction. Both the control group and treatment group significantly decreased in STAI scores from the pretest to the posttest (Control:  $t(31) = 3.55, p < .001$ ; treatment:  $t(31) = 6.39, p < .0001$ ). These results are illustrated in Figure 1. It should be noted that the control group mean at pretest was higher (although not significantly) than the treatment group. This fact may account for the control group's change from pretest to posttest as a regression to the mean phenomenon.

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Insert Figure 1 about here

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The analysis of the skin temperature scores also revealed

a significant trials x treatment interaction ( $F(1, 56) = 8.78, p = .004$ ). Recall that the skin temperature data are difference scores from the baseline to the average temperature reading during disclosure. Thus, a lower score signifies less of an increase in arousal during disclosure. Examination of the mean scores for the control and treatment groups shows that the control group decreased in physiological arousal while the treatment group remained the same. T-tests were conducted to test the mean differences between control group and treatment group scores from pretest to posttest, collapsing data across sex and anxiety level. There was a significant difference in the control group ( $t(31) = 3.49, p < .001$ ) but no significant difference in the treatment group ( $t(31) = 0.58, p = .56$ ). The results of the skin temperature analysis are illustrated in Figure 2.

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Insert Figure 2 about here

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The analysis of the intimacy of disclosure ratings revealed no significant differences for sex, anxiety level, trial or treatment.

Appendix K contains the raw data for each individual in the experiment.

### Discussion

The Pearson product-moment correlations reveal that the three dependent measures were not correlated with each other

and appear to be measuring different response systems. This finding is consistent with known data. For example, Lacey (1967) found that physiological arousal and behavior responses are often not correlated.

The results from the analyses of the STAI scores indicate that both the control and treatment groups report a significantly lower level of anxiety on posttest. The significant decrease in control group scores might be interpreted as a regression toward the mean, since the population mean of the State Trait Anxiety Inventory A State is 40. Inspection of the control group measures (Figure 1) shows that they change from 43.24 at the pretest to 39.44 at posttest. The treatment group means, on the other hand, change from 39.81 to 31.97. This shows that the level of anxiety generated by the self-disclosure was not greater than that expected in the general population. The control group started out on pretest somewhat higher than the population mean and regressed to it at posttest. The treatment group started out at the mean of the population and decreased to a level significantly below that level. This result provides support for the efficacy of the reversal of affect strategy in reducing self-reported anxiety in social situations. However, there was no differential coping ability of individuals high and low in SAD level. This is so because the four-way analysis of variance failed to reveal a SAD x trials effect in the STAI data.

From this study, it appears that individuals high and low in social anxiety do not show differences in ability to cope with self-disclosure. This result may be due to the relatively non-stressful nature of the self-disclosure, or it could be due to the failure to achieve contrasted enough groups on the SAD, or it could be that there are, in fact, no differences between high and low groups in coping ability. Unfortunately, the present study cannot rule out these rival hypotheses.

The results from the analysis of skin temperatures do not support the original hypothesis, that subjects trained in the coping technique would cope better with the stress of self-disclosure. Contrary to expectations, it was found that subjects trained in a cognitive coping technique remained the same in arousal level, while the no-treatment group decreased in arousal. It is important to note, however, that it was arousal level and not anxiety per say, that changed. Anxiety level is often inferred from physiological arousal measures but one cannot be certain what type of arousal is being detected. It can be concluded only that arousal level increased, despite a decrease in self-reported anxiety level. These seemingly contradictory findings reflect on a prevalent problem with physiological measures. Lacey (1967), in discussing implications for the study of stress, states that arousal theory needs a drastic revision. Researchers have found that an individual in any

sort of difficulty, experiencing emotion or coping with a problem will exhibit a wide variety of somatic changes, which may be measured by a variety of systems. According to Lacey (1967), encephalographic, autonomic, motor and other behavioral systems are imperfectly coupled, complex interacting systems. Evidence (Lacey, 1967) shows that electrocortical arousal, autonomic arousal and behavioral arousal may be considered to be different forms of arousal, each complex in itself. This evidence also shows that one cannot easily use one form of arousal as a highly valid index of another. Clearly, more research is needed concerning measures of physiological arousal before results such as those in this experiment can be clearly understood. But it appears that using a cognitive coping strategy results in a continuation of physiological arousal. It may be that the strategy-using subject was "aroused" in a coping sense. Such physiological arousal may be needed to use the strategy effectively.

Once again, no differences were obtained on the SAD factor in the skin temperature data. The possible hypotheses accounting for this lack of difference are 1) The SAD groups were not contrasted enough, 2) The self-disclosure task was not stressful enough, 3) The skin temperature measures taken here were not discriminating enough, 4) There are, in fact, no skin temperature differences between the two levels, 5) Coping, as defined by

reduction in anxiety-related responses, was not an accurate notion of what happens physiologically. In other words, it may be that coping was manifested by maintenance in physiological arousal. Future research is needed in order to rule out these hypotheses.

Results from the intimacy of disclosure ratings do not support the original hypothesis. There was no significant difference between groups receiving treatment and those that did not. This behavioral measure of anxiety may be somewhat unreliable. Interrater reliability was .69. Efforts in future research should attempt to improve means of assessing behavioral measures of self disclosure (Highlen & Voight, 1978).

There were no significant sex differences in any of the analyses. Obviously sex does not appear to be a factor in the self-disclosure or coping procedures used in this study.

In summary, it can be concluded that training in the cognitive coping technique of reversal of affect effectively reduces self-reported anxiety level caused by self-disclosure. This conclusion lends support to the efficacy of coping skills training in clinical treatments. Future research is needed to determine if social anxiety level influences coping ability. Threats to the present study prevent conclusion in this regard. Further research is also necessary to elucidate the role of physiological responding stress coping. It may be that



physiological arousal is maintained while an individual is coping with stress. Future studies in this area are urged to sufficiently contrast social anxiety groups, design more stressful self-disclosure analogues, and insure that pretest group differences do not exist.

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Table 1  
Correlation Matrix for Dependent Measures

	State Trait Anxiety Inventory	Skin Temperature	Intimacy of Disclosure
State Trait Anxiety In- ventory A State	1.000	0.032	-0.003
Skin Tem- perature		1.000	-0.088
Intimacy of Disclosure			1.000

N = 128  
All p >.05

Table 2

Means and Standard Deviations of  
Dependent Measures for all Groups

Measures	<u>LOW SAD</u>				<u>HIGH SAD</u>			
	MALES		FEMALES		MALES		FEMALES	
	TX	Control	TX	Control	TX	Control	TX	Control
<b>STAI</b>								
PRE								
X	32.25	39.00	34.62	37.25	44.88	45.63	47.50	48.37
SD	4.80	6.59	8.26	10.75	11.10	10.12	8.02	14.25
POST								
X	27.38	36.13	27.25	33.50	35.13	48.38	38.13	45.25
SD	3.88	7.16	4.39	10.74	6.62	11.34	6.77	14.97
<b>ST</b>								
PRE								
X	2.14	2.77	2.02	2.20	2.06	2.27	2.34	2.36
SD	0.76	0.74	0.76	0.69	1.02	0.86	0.80	0.53
POST								
X	2.32	2.17	2.23	2.03	1.90	1.52	2.38	2.08
SD	0.41	0.50	0.77	0.64	0.87	0.79	0.73	0.73
<b>INTIMACY</b>								
PRE								
X	17.19	19.22	17.91	18.59	18.97	17.69	20.68	20.75
SD	5.03	5.64	3.49	4.97	3.40	2.62	2.67	4.66
POST								
X	16.18	19.00	18.53	19.69	18.22	18.72	21.88	20.44
SD	4.73	5.35	3.35	4.45	3.67	3.26	2.33	4.97

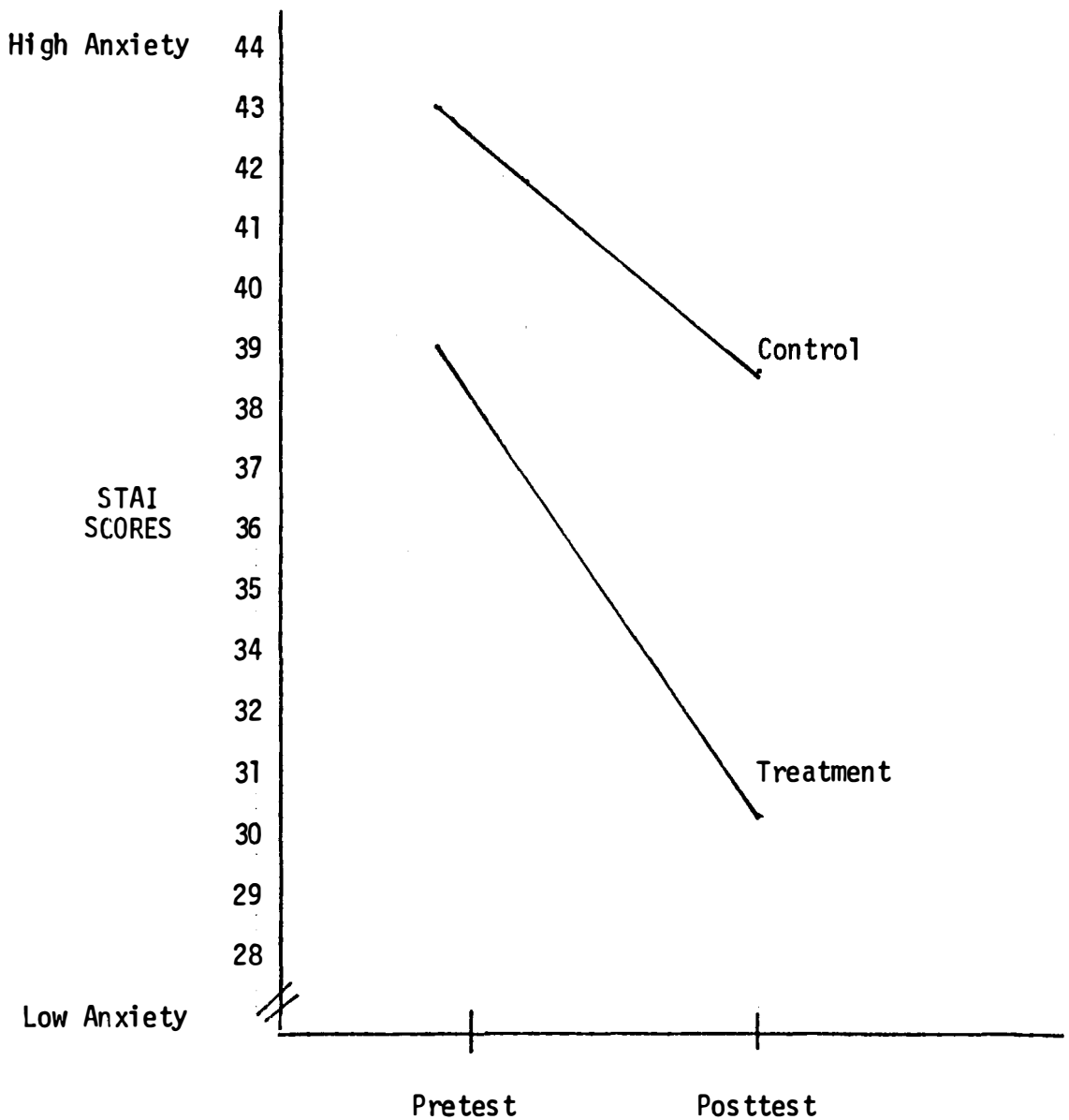


Figure 1: Means of STAI scores in a treatment x trials interaction (collapsed across SAD level and sex).



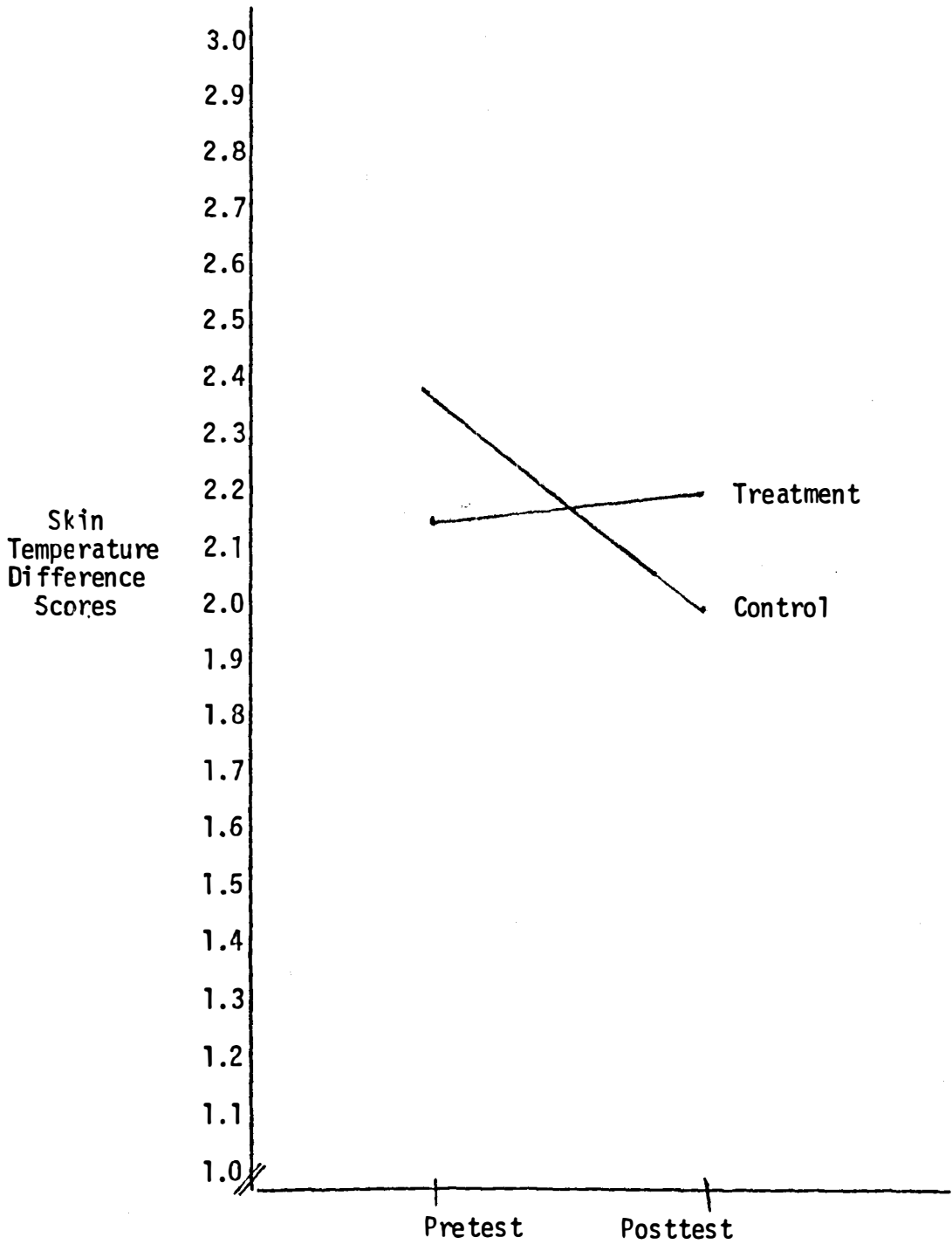


Figure 2: Mean Skin Temperature Scores in a treatment x trials interaction (collapsed across SAD level and sex).

Appendix A

Informed Consent Form

This is an experiment to investigate individual differences in coping abilities in dealing with a stressful situation.

You will be required to do the following:

1. Disclose information onto a cassette tape which may be of a personal nature.
2. Complete questionnaire concerning your feelings about revealing information about yourself.
3. Allow the experimenter to record changes in the skin temperature of your hands.

All of your responses will remain anonymous. You will not be identified by name on the cassette tape or on the questionnaire. The information will be available only to Rita Wittmer and Dr. Matt Jaremko. You may terminate your participation in this experiment at any time.

Debriefing will follow the experiment.

\*\*\*\*\*

I am aware of the requirements of this experiment, and I volunteer to participate.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Please Print:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Age

\_\_\_\_\_  
Sex

\_\_\_\_\_  
Professor

\_\_\_\_\_  
Phone Number

## Appendix B

## Social Avoidance and Distress Scale

Watson and Friend, 1969

Instructions: Below is a list of statements concerning information about yourself. You are to indicate whether each statement is true or false.

- T F 1. I feel relaxed even in unfamiliar situations.
- T F 2. I try to avoid situations which force me to be very sociable.
- T F 3. It is easy for me to relax when I am with strangers.
- T F 4. I have no particular desire to avoid people.
- T F 5. I often find social occasions upsetting.
- T F 6. I usually feel calm and comfortable at social occasions.
- T F 7. I am usually at ease when talking to someone of the opposite sex.
- T F 8. I try to avoid talking to people unless I know them well.
- T F 9. If a chance comes to meet new people, I often take it.
- T F 10. I often feel nervous or tense in casual get-togethers in which both sexes are present.
- T F 11. I am usually nervous with people unless I know them well.

- T F 12. I usually feel relaxed when I am with a group of people.
- I F 13. I often want to get away from people.
- I F 14. I usually feel uncomfortable when I am in a group of people I don't know.
- T F 15. I usually feel relaxed when I meet someone for the first time.
- I F 16. Being introduced to people makes me tense and nervous.
- T F 17. Even though a room is full of strangers, I may enter it anyway.
- I F 18. I would avoid walking up and joining a large group of people.
- I F 19. When my superiors want to talk with me, I talk willingly.
- I F 20. I often feel on edge when I am with a group of people.
- I F 21. I tend to withdraw from people.
- T F 22. I don't mind talking to people at parties or social gatherings.
- T F 23. I am seldom at ease in a large group of people.
- I F 24. I often think up excuses in order to avoid social engagements.
- T F 25. I sometimes take the responsibility for introducing people to each other.

## Coping Abilities

33

- I F 26. I try to avoid formal social occasions.
- T F 27. I usually go to whatever social engagements I have.
- T F 28. I find it easy to relax with other people.

Appendix C

The 25-Item Self-Disclosure Questionnaire

Jourard, 1971

1. What do you like to do most in your spare time at home, e.g., read, sports, go out, etc.
2. The kind of party or social that you enjoy most.
3. Your usual and favorite spare time reading material, e.g., novels, non-fiction, science fiction, poetry, etc.
4. The kinds of music that you enjoy listening to most, e.g., popular, classical, folk-music, opera.
5. The sports you engage in most, if any, e.g., golf, swimming, tennis, baseball, etc.
6. Whether or not you know and play any card games, e.g., bridge, poker, gin, rummy, etc.
7. Whether or not you will drink alcoholic beverages; if so, your favorite drinks, e.g., beer, wine, gin, brandy, whiskey, etc.
8. The foods you like best, and the way you like the foods prepared; e.g., rare steak, etc.
9. Whether or not you belong to any church; if so, which one and the usual frequency of attending.
10. Whether or not you belong to any clubs, fraternity, civic organizations; if so, the names of these organizations.

11. Any skills you have mastered, e.g., arts and crafts, painting, sculpture, wood-working, auto repair, knitting, weaving, etc.
12. Whether or not you have any favorite spectator sports; if so, what these are, e.g., boxing, wrestling, football, basketball, etc.
13. The places that you have travelled to, or lived in during your life; other countries, cities, states.
14. What your political sentiments are at present; your views on state and federal government policies of interest to you.
15. Whether or not you have been seriously in love during your life before this year; if so, with whom, what the details were, and the outcome.
16. The names of the people in your life whose care and happiness you feel in some way directly responsible for.
17. The personal deficiencies that you would most like to improve, or that you are struggling to do something about at present, e.g., appearance, lack of knowledge, loneliness, temper, etc.
18. Whether or not you presently owe money; if so, how much, and to whom.
19. The kind of future you are aiming toward, working for, planning for, both personally and vocationally, e.g., marriage and family, professional status, etc.
20. Whether or not you are now involved in any projects that you would not want to interrupt at present--either socially, personally, or in your work; what these projects are.

21. The details of your sex life up to the present time; including whether or not you have had, or are now having sexual relations, whether or not you masturbate, etc.
22. Your problems and worries about your personality, that is, what you dislike most about yourself, any guilts, inferiority feelings, etc.
23. How you feel about the appearance of your body--your looks, figure, weight--what you dislike and what you accept in your appearance, and how you wish you might change your looks to improve them.
24. Your thoughts about your health, including any problems, worries or concerns that you might have at the present time.
25. An exact idea of your regular income. (If a student, of your usual combined allowance and earnings, if any).



## Appendix D

State Trait Anxiety Inventory, A-State

Spielberger, Gorsuch and Lushene

1970

**DIRECTIONS:** A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	Not At All	Somewhat	Moderately	Very Much	So
1. I feel calm .....	1	2	3	4	4
2. I feel secure .....	1	2	3	4	4
3. I am tense .....	1	2	3	4	4
4. I am regretful .....	1	2	3	4	4
5. I feel at ease .....	1	2	3	4	4
6. I feel upset .....	1	2	3	4	4
7. I am presently worrying over possible misfortunes .....	1	2	3	4	4
8. I feel rested .....	1	2	3	4	4

Coping Abilities

38

	Not At All	Somewhat	Moderately So	Very Much So
9. I feel anxious .....	1	2	3	4
10. I feel comfortable .....	1	2	3	4
11. I feel self-confident .....	1	2	3	4
12. I feel nervous .....	1	2	3	4
13. I am jittery .....	1	2	3	4
14. I feel "high strung" .....	1	2	3	4
15. I am relaxed .....	1	2	3	4
16. I feel content .....	1	2	3	4
17. I am worried .....	1	2	3	4
18. I feel over-excited and "rattled" .....	1	2	3	4
19. I feel joyful .....	1	2	3	4
20. I feel pleasant .....	1	2	3	4

Appendix E

Coping Technique of Reversal of Affect

- I. Purpose: The purpose of using the reversal of affect technique in this experiment is to give the subjects a strategy for coping with self-disclosure.
- II. Definition: The reversal of affect technique entails being optimistic or looking at the bright side of things which may currently seem difficult for an individual.
- III. Exemplification: The experimenter will discuss examples of this technique with the subject to make sure the subject understands reversal of affect.
- IV. The experimenter will then ask the subject to provide examples in which he/she thinks the technique would be applicable, or in which he has used such a strategy in the past.
- V. Social Stress: The experimenter will apply the reversal of affect technique to social stress and discuss its advantages in such situations.
- VI. Self-disclosure: The reversal of affect technique will be applied to self-disclosure. The experimenter will explain that disclosure can be a good way of "getting things off your chest" and can be enjoyable.

## Appendix F

## Protection Procedures for Subjects

These procedures follow the American Psychological Association's code of ethics as reported in Ethical Principles in the Conduct of Research With Human Participants (1973).

## I. Confidentiality Procedures

The subject will be given a number upon completion of the informed consent agreement. He/she will use this number to identify himself/herself on all questionnaires and on the cassette tape. The number/names list will be kept in Dr. Jaremko's office. Only Dr. Jaremko and Ms. Wittmer will have access to any of this data.

## II. Potential Risks

1. Someone finds out something the subject doesn't want anyone to know.
2. Someone becomes extremely upset when the strategy "forces" them to disclose.
3. Someone becomes paranoid that others know about him/her.

## III. Protection from Risks

1. All subjects will be told the confidentiality procedures and made to realize that no one (other than Dr. Jaremko and Ms. Wittmer) will know about them
2. Any subject judged to be the slightest bit upset will be interviewed by Dr. Jaremko, an experienced clinical

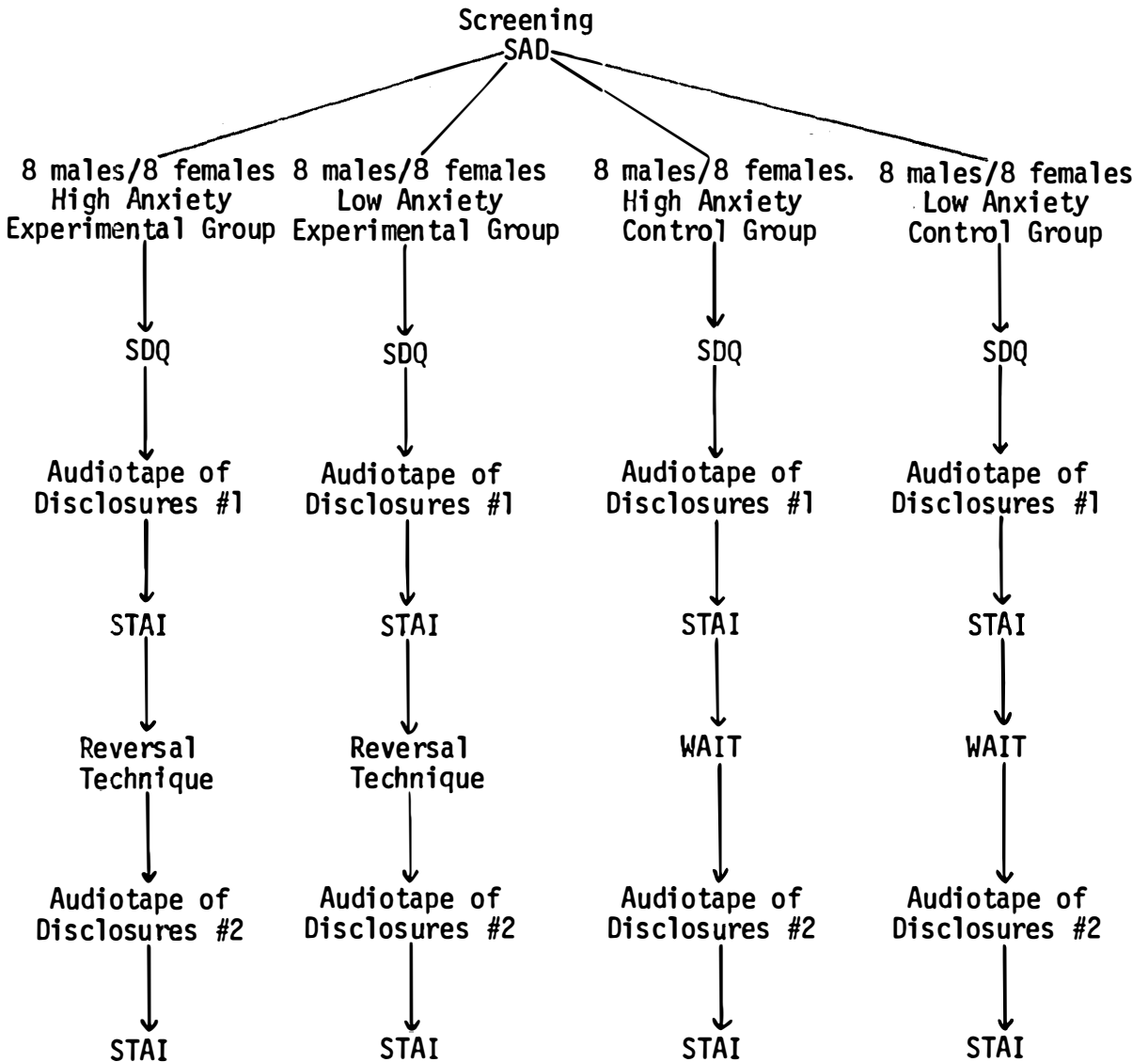
psychologist. All fears will be assuaged in this interview if possible. If not, a program of psychotherapy will be instigated.

#### IV. Debriefing Procedures

All subjects will be debriefed and explained the need for the deception. The experimenter will stress to the subject that she can be contacted if the subject is upset in any way by the experiment. The experimenter will give each subject her name and phone number for this purpose. Any subject who is judged to be upset by the deception and/or the experiment will be referred to Dr. Jaremko.

Appendix G

Flow Chart of Procedure



Appendix H  
Analysis of Variance

STAI

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<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Total	127			
Between Subjects	63			
Sex	1	17.26	0.12	.73
SAD	1	3454.88	23.39	.00001
TX	1	951.57	6.44	.01
Sex x SAD	1	51.26	0.34	.55
Sex x TX	1	48.76	0.33	.56
SAD x TX	1	13.13	0.09	.76
Sex x SAD x TX	1	5.69	0.04	.84
Error	56	147.68		
<u>Within Subjects</u>	64			
Trial	1	1086.96	48.94	.00001
Trial x Sex	1	0.19	0.01	.92
Trial x SAD	1	39.38	1.77	.18
Trial x TX	1	130.01	5.86	.01
Trial x Sex x SAD	1	18.75	0.84	.36
Trial x SAD x TX	1	11.88	0.53	.46
Trial x Sex x TX	1	6.57	0.29	.58
Trial x Sex x SAD x TX	1	0.07	0.003	.95
Error	56	22.20		

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Appendix I  
Analysis of Variance  
Skin Temperature Scores

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<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
<b>Total</b>	<b>127</b>			
<b>Between Subjects</b>	<b>63</b>			
Sex	1	0.11	0.13	.72
SAD	1	0.48	0.56	.45
TX	1	0.0002	0.0002	.98
Sex x SAD	1	2.69	3.15	.08
Sex x TX	1	0.20	0.24	.62
SAD x TX	1	0.41	0.49	.48
Sex x SAD x TX	1	0.07	0.09	.77
Error	56	0.85		
 <u>Within Subjects</u>				
Trial	1	1.16	4.78	.03
Trial x Sex	1	0.64	2.64	.11
Trial x SAD	1	0.30	1.26	.26
Trial x TX	1	2.14	8.78	.004
Trial x Sex x SAD	1	0.02	0.09	.76
Trial x SAD x TX	1	0.04	0.14	.70
Trial x Sex x TX	1	0.22	0.94	.33
Trial x Sex x SAD x TX	1	0.009	0.04	.84
Error	56	0.24		

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## Appendix J

## Analysis of Variance

## Intimacy Ratings

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<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Total	127			
Between Subject	63			
Sex	1	88.19	3.21	.07
SAD	1	60.84	2.21	.14
TX	1	10.26	0.37	.54
Sex x SAD	1	24.72	0.90	.34
Sex x TX	1	6.46	0.23	.62
SAD x TX	1	39.10	1.43	.24
Sex x SAD x TX	1	2.89	0.10	.74
Error	56	27.42		
<u>Within Subjects</u>	64			
Trial	1	1.37	0.19	.66
Trial x Sex	1	6.23	0.85	.36
Trial x SAD	1	0.21	0.13	.86
Trial x TX	1	1.17	0.16	.69
Trial x Sex x SAD	1	2.74	0.37	.54
Trial x SAD x TX	1	0.47	0.06	.80
Trial x Sex x TX	1	6.46	0.88	.35
Trial x Sex x SAD x TX	1	4.40	0.60	.44
Error	56	7.30		

---

## Appendix K

## Raw Data for Individuals in Experiment

Group	Subject	STAI		ST		INTIMACY	
		Pre	Post	Pre	Post	Pre	Post
FLC	1	26	23	3.38	2.96	22.25	19.00
	2	43	49	1.62	1.56	13.00	23.00
	3	34	30	2.22	1.22	24.50	23.50
	4	30	24	1.31	2.83	19.00	22.00
	5	22	22	2.04	1.61	2.100	22.50
	6	46	32	1.65	1.51	10.50	10.50
	7	45	44	2.80	2.26	16.00	16.00
	8	52	44	2.56	2.30	22.50	21.00
FLT	1	31	31	2.34	2.47	23.00	23.00
	2	45	30	1.69	1.87	16.25	20.50
	3	32	26	0.35	1.43	20.00	19.00
	4	35	28	2.50	2.69	17.00	15.50
	5	38	28	2.90	3.35	11.50	12.00
	6	49	33	2.01	2.77	20.00	19.00
	7	32	21	2.02	2.31	19.50	20.00
	8	25	21	2.35	0.97	16.00	19.25
FHC	1	44	35	2.27	1.75	23.00	22.00
	2	25	24	1.97	1.51	17.50	24.50
	3	38	35	2.12	1.66	25.00	24.50
	4	48	44	2.51	2.56	22.50	.6100
	5	70	75	2.59	3.57	22.00	22.00
	6	65	52	2.17	1.56	25.00	22.00
	7	50	49	3.47	2.45	11.00	10.00
	8	47	47	1.74	1.55	20.00	22.50
FHT	1	43	26	1.93	2.40	22.50	23.00
	2	36	36	0.77	0.86	21.00	22.00
	3	48	39	2.34	2.23	20.00	21.25
	4	39	40	2.40	2.13	22.00	25.00
	5	48	36	2.89	3.14	15.50	18.00
	6	55	36	3.55	3.19	19.00	19.25
	7	51	42	2.24	2.52	21.00	22.00
	8	60	50	2.61	2.56	22.50	24.00

Group	Subject	<u>STAI</u>		<u>ST</u>		<u>INTIMACY</u>	
		Pre	Post	Pre	Post	Pre	Post
MLC	1	41	44	3.02	1.74	19.50	12.50
	2	44	34	2.47	1.57	22.00	26.00
	3	33	32	4.09	2.68	20.00	20.50
	4	34.	28	2.00	2.69	21.50	21.50
	5	38	36	2.20	2.06	22.00	21.50
	6	29	27	2.34	1.55	20.75	21.00
	7	47	43	3.64	2.56	22.50	19.50
	8	46	45	2.43	2.53	5.50	9.50
MLT	1	39	33	2.19	2.47	19.50	18.50
	2	34	25	3.21	2.73	22.00	23.00
	3	31	30	2.32	2.15	22.00	20.75
	4	39	28	1.94	2.58	10.50	11.75
	5	38	25	0.56	2.14	15.00	18.00
	6	30	31	1.90	1.46	10.50	11.00
	7	24.	21	2.41	2.41	22.50	14.50
	8	33	26	2.56	2.63	15.50	11.00
MHC	1	62	41	2.93	2.32	12.00	22.00
	2	43	43	1.06	1.25	20.50	19.50
	3	64	47	1.71	1.58	17.00	18.50
	4	34	34	2.46	2.24	18.00	19.50
	5	55	56	2.08	0.00	17.00	21.50
	6	41	35	3.86	2.31	18.00	15.00
	7	51	53	1.66	1.38	19.50	12.75
	8	37	34	2.43	1.11	19.50	21.00
MHT	1	29	25	1.81	3.21	17.50	24.00
	2	43	39	3.42	2.47	21.00	14.50
	3	59	46	2.23	2.05	14.50	21.25
	4	45	27	2.57	1.52	22.50	17.50
	5	42	36	2.51	2.49	16.00	13.50
	6	40	37	0.27	1.03	24.00	18.50
	7	38	36	2.73	1.92	16.25	15.50
	8	63	35	0.94	0.48	20.00	21.00

M = Males  
 L = Low Anxiety  
 H = High Anxiety  
 C = Control  
 T = Treatment

Appendix L

Modified Version of the Haymes Technique for Measuring Intimacy  
of Self-Disclosure From Tape-Recorded Interviews  
Code and Scoring Manual for Self-Disclosure

Self-disclosure will include four major categories of response:

1. Expressions of emotion and emotional processes.
2. Expression of needs.
3. Expressions of fantasies, strivings, dreams, hopes.
4. Expressions of self-awareness.

Self-disclosure will specifically exclude opinions about objects other than self unless the person obviously intends the opinion to be saying something about himself. Since this experiment deals with the social anxiety of the subjects, it is only rarely that one comes across such inferential statements without their being followed up by a clarifying remark which is scorable under one of the categories below. Although much self-disclosure of the types described is stated in the first person singular, it is possible to make self-disclosing statements in the third person.

Scoring Procedures

Segment of tape will be rated on a scale of 0 to 5. A score of 5 points will be given to disclosures of the defined types when they are first person references.

A score of 2.5 points will be given to disclosures of the same types when they are reflexive third person references. These statements are in the third person in which the word "you" is an obvious substitution for saying "I."

Non-reflexive third person references, such as "people always...", in which the person is not revealing any information about himself will be scored zero.

For this experiment, ratings will be given for each 15 seconds of tape-recorded material. In any 15 second segment, only the score for the maximally disclosing statement will be used. In other words, if a person makes 1, 2 or 5-point disclosures in any 15 second segment, his/her score is 5 points. This avoids inaccurately scoring for speech pattern repetitions. Similarly, if a person makes a 5-point statement and a 0-point statement in the 15 second segment, his/her score is 5 points for the segment.