INFORMATION TO USERS

This reproduction was made from a copy of a document sent to us for microfilming. While the most advanced technology has been used to photograph and reproduce this document, the quality of the reproduction is heavily dependent upon the quality of the material submitted.

The following explanation of techniques is provided to help clarify markings or notations which may appear on this reproduction.

1. The sign or "target" for pages apparently lacking from the document photographed is "Missing Page(s)". If it was possible to obtain the missing page(s) or section, they are spliced into the film along with adjacent pages. This may have necessitated cutting through an image and duplicating adjacent pages to assure complete continuity.

2. When an image on the film is obliterated with a round black mark, it is an indication of either blurred copy because of movement during exposure, duplicate copy, or copyrighted materials that should not have been filmed. For blurred pages, a good image of the page can be found in the adjacent frame. If copyrighted materials were deleted, a target note will appear listing the pages in the adjacent frame.

3. When a map, drawing or chart, etc., is part of the material being photographed, a definite method of "sectioning" the material has been followed. It is customary to begin filming at the upper left hand corner of a large sheet and to continue from left to right in equal sections with small overlaps. If necessary, sectioning is continued again—beginning below the first row and continuing on until complete.

4. For illustrations that cannot be satisfactorily reproduced by xerographic means, photographic prints can be purchased at additional cost and inserted into your xerographic copy. These prints are available upon request from the Dissertations Customer Services Department.

5. Some pages in any document may have indistinct print. In all cases the best available copy has been filmed.

8225504

Hobson, Gale Llewellyn

ANXIETY IN WOMEN ASSOCIATED WITH A NON-TRADITIONAL OR TRADITIONAL CAREER CHOICE

The University of Oklahoma   PH.D.   1982

**University
    Microfilms
International** 300 N. Zeeb Road, Ann Arbor, MI 48106

.

The University of Oklahoma

Graduate College

Anxiety In Women Associated with a Non-Traditional
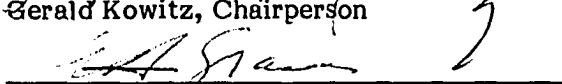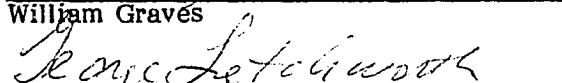or Traditional Career Choice

A Dissertation

Submitted to the Graduate Faculty
in partial fulfillment of the requirements for the
Degree of
Doctor of Philosophy
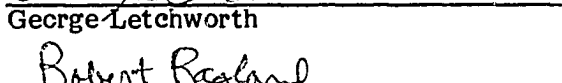
By
Gale Llewellyn Hobson
Norman, Oklahoma
1982
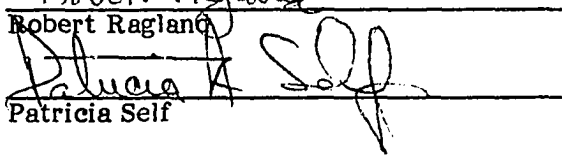
ANXIETY IN WOMEN ASSOCIATED WITH A NON-TRADITIONAL OR TRADITIONAL CAREER CHOICE

Gerald Kowitz, Chairperson

William Graves

George Letchworth

Robert Ragland

Patricia Self

Say not, "I have found the truth, but rather, "I have found a truth."
Say not, "I have found the path of the soul." Say rather, "I have met the soul
walking upon my path."

<div align="center">

The Prophet,

Kahlil Gibran

</div>

Table of Contents

List of Tables

List of Figures

Anxiety in Women Associated with a Non-Traditional
or Traditional Career Choice

Chapter I

Introduction

The past century has witnessed an effort on the part of various feminist
groups to improve the status of American women in contemporary society. Two
or three decades of women's liberation and an increased sense of autonomy and
opportunity for women has raised some interesting questions. An important one
concerns a woman's own ability to deal with this increase in freedom. Horner,
(1968), showed that the expectancy of success in achievement-related situations
was followed by negative consequences arousing a tendency to lower the level of
success in otherwise achievement motivated women. The phenomenon then
inhibited a woman's performance by lowering her level of aspiration. Fear of
success phenomenon was measured with a revised projective technique based on
McClelland's adaptation of the Thematic Apperception Test (1953). These
studies were criticized for the usual problems associated with a projective
technique. (Selltiz, Wrightsman, & Cook, 1976). The degree of inference
involved in the projective tests caused concern about its validity. A great
variety of inferences may be drawn and a reliance on the interpretive skills of
the individual analyst are problems that exist with the use of projective

1

techniques (Bellak, 1971). The procedures for scoring most projective techniques are not specified in detail or leave many of the scoring decisions to the examiner. Projective tests tend to sacrifice precision and reliability, and hence validity in an effort to achieve depth.

Early investigators (Komarousky, 1946; Wallin, 1950) identified a tendency for the female to avoid appearing as competent as the male. The ability to engage in such tactics as "playing dumb" would presumably bring positive responses from the male and female alike. Further investigations have documented the problems of achievement striving for females in a society which maintains a gender-role distinction between masculine achievement and mastery, and feminine non-competitiveness and lack of aggressiveness (Heilbrun, Piccola, & Kleemeier, 1974).

Achievement motivation is defined as an individual's need to be successful in competition with some standard of excellence (McClelland, Atkinson, Clark, & Lowell, 1953). However, the literature on female motivation is both sparse and inconsistent in comparison to studies involving male subjects (Alper, 1973). Alper suggested that women appear different from men when measured on achievement motivation because women do not want to achieve as men do. Both the theory and the techniques for testing the theory are male specific. Horner (1968) asserted that women suffer from a fear of success in competitive achievement situations. High achievement is consistent with masculinity, but has a price. Women also pay a price when they succeed, especially in fields traditionally regarded as more appropriate for men. Success by women in competition with males may be taken as evidence of a lack of femininity and may lead to social rejection and disapproval. This would

be particularly disturbing for women because, according to Bardwick (1971), women depend upon the approval and esteem of family and friends and are very concerned with interpersonal relationships.

Horner (1968) postulated the motive to avoid success (M_{-s}) as a stable personality disposition inhibiting achievement motivation in women. (M_{-s}) was conceptualized in an attempt to explain the major unresolved gender differences found in previous research (McClelland, et al., 1953; Atkinson, 1958). As a result of her studies, Horner proposed that women who experience career success, will risk social rejection and anxiety over loss of femininity, which will be aroused concerning a lack of role identification. She suggested that women learn to expect negative consequences from success due to incongruence with gender-role standards, and therefore experience anxiety in competitive situations. She proposed that the motive to avoid success is most apparent in high achieving women in competitive situations with men. Horner tested women in competitive situations with men and found that subjects who did not fear success performed significantly better under competitive circumstances. The reverse was true for women with higher anxiety levels. She concluded that this explains previously incongruous results in the investigation of achievement motivation in women.

Atkinson & Feather (1966) stated that avoidance motives inhibit actions expected to have unattractive consequences, but this does not mean that the female seeks failure. The latter is a function of characteristics of the individual. The presence of a motive to avoid success is caused by the anxiety aroused in anticipation of negative consequences. Horner (1972) believed that most women did not want to fail, nor did they have a "motive to approach failure". According to her ideas, the presence of a "will to fail" would mean they

were actively seeking failure because they expected positive consequences from failing.

Horner used the word anxiety throughout much of her work to describe the reaction she received from women when they were faced with a conflict between career success and their own identity. She suggested that anxiety was aroused when a person expected that the consequences of an action would bring negative reactions. She further stated that anxiety then functioned to inhibit the actions expected to have negative consequences. For purposes of this study, anxiety was defined as an emotional reaction consisting of uncomfortable feelings of tension and apprehension which were associated with arousal of the autonomic nervous system and resulting behavioral reactions, such as heart palpitations, disturbances in respiration, sweating, restlessness, tremor, and shuddering.

The present study proposed that through the use of mental imagery, anxiety due to fear of success could be aroused in subjects. Mental Imagery is defined as a sequence progressing toward resolution that uses associative information to produce an anxiety reaction (Horowitz, 1970). He submitted that imagery also exhibits properties that relate to basic information processing operations. Mental imagery has been used as a psychotherapeutic technique and in research to produce anxiety. Imagery is based on the notion that people react to imagined scenes in much the same way they react to real-life events. Imagery has been used within therapeutic frameworks ranging from symbolic techniques characteristic of the psychiatric approach (Hammer, 1967) to behavior modification strategies (Cautela, 1967).

An operational definition suggested by Paivio (1970) describes imagery as an intervening variable coordinated to measure nonverbal behavior. Paivio

(1981) proposed that the imagery system could represent the abstract or affective properties of things but not the language that described them. Images may be incomplete pictures that convey essential types of information . Those from the psychoanalytic tradition (e.g., Horowitz, 1970) accept the position that minimal subjective awareness is required to consummate basic image construction because nonverbal processes are habitually used to complete common processing tasks (Anderson, 1978).

In this study it was hypothesized that by suggesting a situation where females would be in a highly competitive situation with a male counterpart, anxiety would be produced and fear of success motivation would function.

Method

A locale where women were entering a non-traditional career field was selected for this study. The University of Oklahoma Dental School offered such a situation since dentistry is predominantly a male career. Dental hygienists are usually female and therefore the dental hygiene enrollment is female.

Instrumentation

The State-Trait Anxiety Inventory (STAI) was chosen for this study to measure anxiety. (See Appendix D, p. 66) Construction of the STAI was begun in 1964 with the intent of developing a single scale that would provide objective self-report measures of both state and trait anxiety. The STAI is comprised of two separate self-report scales for measuring anxiety concepts. The A-Trait scale consists of twenty statements that ask people to describe how they generally feel. Trait anxiety (STAI-T) refers to relatively stable individual differences in anxiety proneness (Spielberger, Gorsuch, & Lushene, 1970). The STAI A-State scale consists of twenty statements with instructions for the

subject to indicate what feelings are present at that particular moment in time. State anxiety (STAI-S) unlike trait anxiety, refers to an anxiety reaction taking place at a particular moment in time and at a given level of intensity. State anxiety has been conceptualized as a transitory emotional state or condition of the human organism which is characterized by subjective, consciously perceived feelings of tension and apprehension, and heightened autonomic nervous system activity (Spielberger, et al., 1970). Normative data for the STAI are available for large samples of college freshmen, undergraduate college students, and high school students. This information is also reported for male psychiatric patients, general medical and surgical patients, and young prisoners. The test-retest reliability of the STAI-T is relatively high, ranging from .73 to .86. But stability coefficients for the STAI-S scale tend to be low, ranging from .16 to .54, as would be expected for a measure designed to be influenced by situational factors (Spielberger, et al., 1970). Both the STAI-S and STAI-T scales have a high degree of internal consistency.

Females who have chosen non-traditional careers should score higher on the STAI-S than women in traditional careers. Men in the study should not demonstrate the same high scores on the STAI-S because success for them does not threaten their masculinity.

Costello's Scale I was administered to measure a persons desire to do a job well. Healthy dependence means a sensitivity to the needs of persons who are important in one's life. Often, women depend almost entirely upon other people's reactions for their feelings of self-esteem (Bardwick, 1971). Women experience a need to affiliate in order to feel adequate and not vulnerable.

Women commonly display feelings of inadequacy and self-criticism. Costello's Scale II was administered to measure a persons desire to be a success.

Subjects

The subjects in this investigation were female members of a dental hygiene program, female dental students, and male dental students. In the freshmen class of 1980 nineteen women and fifty-six men were admitted to the program. By the end of their sophmore year in 1982, thirty-six percent of the women dental students had dropped out where only fourteen percent of the males had terminated the program.

The dental hygienists were enrolled in a two year dental school program which follows two years of college. The dental hygienists comprised the group of subjects representing the traditional career field.

Female dental students comprised the group of subjects in the non-traditional career field. Practicing female dentists are few in comparison to male dentists. However, more females are being admitted to dental school programs now than in the past. A group of male dental students were subjects. Six groups of subjects were used with fifteen subjects in each group.

1) Male dental students were randomly assigned to the experimental group; (DSM - 1)

2) Male dental students were randomly assigned to the control group; (DSM - 2)

3) Female dental students were randomly assigned to the experimental group; (DSF - 1)

4) Female dental students were randomly assigned to the control group; (DSF - 2)

5) Female dental hygienists were randomly assigned to the experimental group; (DHF - 1)

6) Female dental hygienists were randomly assigned to a control group; (DHF - 2)

Procedure

All subjects filled out a demographic information sheet. (See Appendix D, p. 66). The resulting information was used to describe the subjects examined in the study. The information included: Date of birth, ethnic background, families economic status, mothers and fathers age at the time of the subject's birth, mothers and fathers educational level and occupation and students future plans. Costello's Scale (1967) was administered to obtain a measure of each subjects desire to be a success. The scale produces a score which indicates if the subject is a high or low achiever. Costello's Scale I (1967) was administered to determine desire to do a job well. It was proposed that the women subjects would score higher on Scale I than male subjects reflecting their affiliation needs. It was further suggested that the female dental students and male dental students would score higher on Scale II reflecting a desire to be a success. Following this all subjects were administered the STAI-T measure of anxiety.

The technique of imagery was used to produce anxiety in three of the groups. A tape was played to the subjects that suggested they are involved in a highly competitive situation with a male peer. The scenario suggested that a female with top grades will be competing with a male who also has equally high grades for a prestigious scholarship. A male professor in their course of study will interview each of them and make the final selection. The scholarship will not only mean money to them now, but also the receipt of it means significant

career advancements later. The other three groups are the control groups; rather than an anxiety-producing tape, these groups will listen to a relaxation tape.

Each subject was administered the STAI-S to establish a baseline of existing anxiety. Then following the imagery procedure, each subject was administered the STAI-S to measure a change in anxiety due to the experimental procedure.

The comparison groups (each n = 15) will be subject to the following parameters:

Group 1   The male dental students were exposed to the imagery intended to produce career anxiety.

Group 2   The male dental students were exposed to the relaxation imagery and served as a control group.

Group 3   The female dental students were exposed to the imagery intended to produce anxiety about their career.

Group 4   This group consisted of female dental students who were exposed to relaxation imagery.

Group 5   In this condition, female dental hygiene students were asked to imagine a situation where they would experience anxiety in regards to their career.

Group 6   The group consisted of female dental hygiene students who were exposed to relaxation imagery.

Results

Demography

Prior to the experimental treatment, all the subjects participating in the study completed a demographic information form (see Appendix D, p. 66). The resulting information was tabulated by groups (See Appendix B, p. 56).

The DHF were four years younger on the average than the DSF and two years younger than the DSM. The male and female dental student groups were comprised of Freshmen, Sophmore, Junior, and Senior students in post-graduate dental school. The dental hygienists were either Junior or Senior undergraduates in the dental hygiene program. The groups consisted of middle to upper-middle class caucasian students with the exception of one Black, two Orientals, and one American Indian (See Appendix B, p. 56).

Table 1

Age of Students

Group	Age	
	M	SD
DSM - 1	25.60	3.74
DSM - 2	26.40	2.99
DSF - 1	27.07	2.84
DSF - 2	25.93	3.17
DHF - 1	21.82	1.21
DHF - 2	23.33	2.02

The female dental students mothers were slightly older than the male dental students or hygienists when their children were born although not significantly so, suggesting that they may have been career oriented longer before having a family. The data in the following table shows the age of the dental students parents at their birth.

Table 2

Mothers and Fathers Age at Students Birth

Groups	Mothers Age		Fathers Age	
	M	SD	M	SD
DSM - 1	25.85	5.25	27.86	5.28
DSM - 2	28.07	6.63	31.85	7.76
DSF - 1	29.27	8.78	29.62	6.19
DSF - 2	25.40	5.36	28.42	7.93
DHF - 1	27.80	6.09	31.13	6.24
DHF - 2	26.27	5.38	26.87	5.17

The six comparison groups had parents who were highly educated. Twelve mothers had graduate education and one-third of the student's fathers had post-graduate education.

Table 3

Education of Mothers and Fathers

Groups	Some High School		High School Graduate		College		Graduate	
	1	2	1	2	1	2	1	2
DSM - 1			8	5	5	7	2	3
DSM - 2			8	8	4	1	3	6
DSF - 1	1	1	4	4	7	7	3	3
DSF - 2	1	1	8	5	5	4	1	5
DHF - 1		1	5	2	7	5	3	7
DHF - 2	1		7	4	7	4		7

1 = Mother
2 = Father

Most of the students indicated they would be involved in private practice in dentistry or dental hygienists in private practice in ten years. Three DHF indicated they would be homemakers rather than pursuing their career in ten years. An additional three DHF indicated that they would be in teaching or administrators rather than private practice. It is possible the DHF did not perceive their present training program as a long term life committment as the DSM and DSF did.

Table 4

Future Plans of Students
(10 Years Later)

Groups	General Practice	Teaching Administration	Military	Homemaker
DSM - 1	13		2	
DSM - 2	15			
DSF - 1	14	1		
DSF - 2	15			
DHF - 1	12			3
DHF - 2	12	3		

Trait Anxiety in Experimental and Control Groups

Prior to evaluating the results of the experimental treatment, the results of the scores on trait anxiety were assessed. Using an analysis of variance the three experimental and three control groups were compared on trait anxiety. The thirty DSM, thirty DSF, and thirty DHS were collapsed across the

six comparison groups and did not differ from each other significantly on this scale, F = 1.67, $p < .05$ (See Table G, Appendix E, p. 74). The male and female dental students score was ($\overline{X}$ = 37.83) and female dental hygienists was ($\overline{X}$ = 34.40). The experimental ($\overline{X}$ = 37.98) and control ($\overline{X}$ = 35.38) groups did not differ significantly from each other. The female dental hygienists were somewhat less anxious on a general measure, trait anxiety, than male or female dental students but not significantly different.

Table 5

Means and Standard Deviations of the STAI-T Scores
for the Six Comparison Groups

Groups	M	SD
DSM - 1	40.53	9.98
DSM - 2	35.13	7.48
DSF - 1	37.33	8.16
DSF - 2	38.27	7.80
DHF - 1	36.07	8.51
DHF - 2	32.73	7.96

State Anxiety in Experimental and Control Groups

This phase of the study compared the experimental groups on the STAI-S anxiety scale which was given immediately prior to the experimental treatment and then immediately following the treatment. A difference score was obtained from the pre and post test and then processed by an analysis of variance (see Table H, Appendix E, p. 74). The dependent variable in the

treatment condition (STAI-S difference scores) was analyzed by a 2 (experimental and control) X 3 (DSM, DSF, and DHF) analysis of variance.

The analysis yielded non significant results between the three experimental groups. The main effect comparing the DSM ($\overline{X}$ = 0.27), DSF ($\overline{X}$ = -0.10), and DHF ($\overline{X}$ = -2.93) was not significant, $\underline{F}$ = 0.61, p< .05 reflecting results opposite to those hypothesized. The main effect comparing the experimental groups ($\overline{X}$ = 7.96) and control groups ($\overline{X}$ = -9.80) was significant, $\underline{F}$ = 47.21, $\underline{p}$ < .01 (refer to Table H, Appendix E, p. 74).

Table 6

Means and Standard Deviations of the STAI-S Scores
of Differences Between a Pre and Post Test

Groups	M	SD
DSM - 1	8.07	10.64
DSM - 2	-7.53	7.73
DSF - 1	10.53	11.38
DSF - 2	-10.73	8.83
DHF - 1	5.27	19.14
DHF - 2	-11.13	12.43

Costello Scale I

The 2 (experimental and control) X 3 (DSM, DSF, and DHF) analysis of variance was significance. The main effect comparing the DSM ($\overline{X}$ = 7.50), DSF ($\overline{X}$ = 8.70), and DHF ($\overline{X}$ = 7.63) revealed an F = 3.96, $\underline{p}$< .05 which was tested to be significant (refer to Table I, Appendix E, p. 75).

Table 7

Means and Standard Deviations of Costello Scale I Scores

Groups	M	SD
DSM - 1	7.53	1.68
DSM - 2	7.47	1.85
DSF - 1	9.60	0.63
DSF - 2	7.80	2.40
DHF - 1	6.80	2.37
DHF - 2	8.47	1.30

A significant interaction effect did occur among the six groups showing that women have the need to affiliate (refer to Figure 1).

Figure 1

Scale I - Interaction Between Experimental and Control Groups.

A test of simple main effects was calculated to determine which of the three groups differed significantly. The results indicated that the female dental students scored significantly higher than the female dental hygienists and the female dental students scored significantly higher than male dental students in the experimental groups. There were no significant differences among the control groups.

Table 8

Mean Differences Between Combined Comparison Groups

Group	M	Differences	Significance
DSF	9.60		
DHF	6.80	2.80	*
DSF	9.60		
DSM	7.53	2.07	*
DHF	6.80		
DSM	7.53	0.73	

* p < .05

Costello Scale II

The 2 (experimental and control) X 3 (DSM, DSF, and DHF) analysis of variance for Scale II was significant (refer to Figure 2, p. 17). The main effect comparing the DSM ($\overline{X}$ = 6.67), DSF ($\overline{X}$ = 7.87), and DHF ($\overline{X}$ = 8.93) yielded a significant difference, $\underline{F}$ = 5.41, $\underline{p}$<.05, as had been hypothesized (refer to Table J, Appendix E, p. 75). No significant difference occurred between the experimental and control groups and there was no significant interaction between the six groups (refer to Figure 2, p. 17). The DSM ($\overline{X}$ = 6.67), DSF ($\overline{X}$ = 7.86), and DHF ($\overline{X}$ = 8.93) were within a one point range. A Tukey test of differences was performed on Scale II to determine which means in the main effect varied significantly. The male dental students varied significantly from the dental hygienists on this scale at the $\underline{p}$< .05 level of significance.

Table 9

Means and Standard Deviations of Costello Scale II Scores

Groups	M	SD
DSM - 1	6.93	2.40
DSM - 2	6.40	3.02
DSF - 1	7.60	2.59
DSF - 2	8.13	2.61
DHF - 1	9.53	3.20
DHF - 2	8.33	2.02

Figure 2

Scale II – Main effect between DSM (experimental and control), DSF
(experimental and control, and DHF (experimental and control).
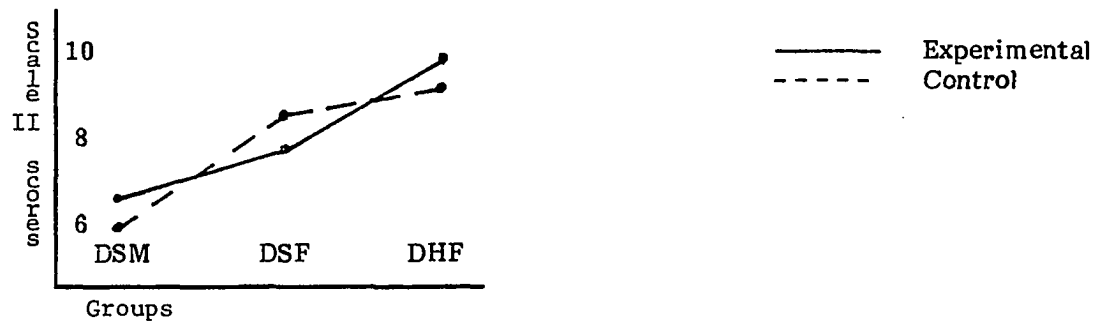
Discussion

The study extended Horner's (1968) study of women and a phenomenon she termed the motive to avoid success (M_{-s}) which was defined as a stable personality disposition inhibiting achievement motivation in women, and was conceptualized in an attempt to explain past unresolved gender differences in previous research (McClelland, et al., 1953); Atkinson, 1958). Horner proposed that women who strive for career success, will risk social rejection and loss of femininity which will arouse their anxiety.

The study found that the STAI-S presented to three groups (DSM, DSF, and DHF) did not support this claim. Although, female dental students were highest in anxiety in response to a competitive situation with a fellow male student, the difference was not significantly higher than male dental students or dental hygiene students. These results substantiated the findings of Murphy-Berman (1975, 1976) which attempted to test Horner's suggestion that women feel "unsexed" by success and experience anxiety in competition with men. The assumption was tested by questioning women after they had been engaged in competitive tasks. Fear of success subjects did not estimate that their male partners would want to be with them less after success than failure or that their partners viewed them as less feminine.

Condry and Dyer (1976) argue that fear of success should be considered as a situational rather than a motivational variable. In this way, fear of success is seen as a set of realistic negative expectancies when one deviates from a set of cultural norms for gender-appropriate behavior. The results of the present study indicate this to be accurate since male dental students responded with anxiety in competition at almost the same rate as female dental students. The

large amount of variance between the scores that existed within the three treatment groups further indicates that fear of success may be a general phenomenon rather than a gender based occurance. The results of this study indicate that women in a non-traditional career do not experience a higher level of anxiety than women in a traditional career or men in the same career field. Further investigation should consider this as being related to situational factors as Argote, Fisher, McDonald, & O'Neil (1976) suggest. They found that females who were rejected after success or accepted after failure in competition with men performed significantly worse on subsequent tasks than those who were accepted after success or rejected after failure.

Anxiety Measurement

The use of projective techniques is subject to criticisms of validity and reliability and continues to be one of the major criticisms of M_{-s}. Zuckerman and Wheeler (1975) maintained that projective techniques for the assessment of M_{-s} may be only tapping gender-role stereotypes rather than providing a valid motivational measurement. Veroff, Wilcox, and Atkinson (1953), and French & Lesser (1964) found that women subjects did not respond to the TAT figures with achievement imagery. In this study, an imagery technique was used to produce a situation where subjects were in competition with a fellow male student. Control groups were used where subjects were given a relaxation imagery and anxiety levels were measured, not by a projective method but by the STAI scales. The data obtained from the control and experimental groups showed a significant difference when compared. The experimental groups showed a significant rise in anxiety over the control groups which significantly dropped in anxiety. These results show that both the control and experimental treatments were effective.

An examination of the data showed that the subjects in this study began with high levels of anxiety, as measured by the STAI-T. Trait anxiety refers to relatively stable individual differences in anxiety proneness (Speilberger, Gorsuch, and Lushene, 1970). There is a tendency for high A-Trait individuals to be more self-deprecatory and to fear failure; therefore, it might be expected that they will manifest higher leveis of A-State anxiety in situations that involve psychological threats to self-esteem (Speilberger, 1971). The subjects in this study exhibited high levels of anxiety prior to the treatment. The inflated pre-treatment scores may have kept the treatment effects from producing significant results. The high scores could be the result of being in a high-pressure, highly competitive post-graduate professional school program. As reported in Table G, Appendix E, p. 74) there was no statistically significant difference among the six groups in trait anxiety.

Demography

As reported in the demographic summary, the dental hygiene students were on the average four years younger than the dental students. The literature suggested (Horner, 1968) that as women come closer to success and in more direct competition with males, a fear of success reaction becomes more intense. Since the hygienists were younger, possibly they did not experience anxiety as much because they were "not there yet".

Consideration should be given to further investigation with women who were actually in the work place. It may be acceptable for women to succeed as students, but not as competitive employees or private practitioners. Future consideration should be given to examining women actually working in non-traditional careers and women working in traditional careers.

Costello Scale I

As was hypothesized, women scored higher on a measure of concerning for doing a job well than men. The female dental students scored significantly higher than both the dental hygienists and males. In this study it was hypothesized that female dental students and female dental hygienists would obtain higher scores on the scale. This is due to a woman's need to affiliate and achieve positive regard and acceptance from others. The expected differences was found between DSF and DSM. However, the DHF were actually lower than DSM (See Table 9, p. 17. Women have a need to achieve approval and acceptance from others by their willingness to work hard and do a job well. These results would warrant further research into the possibility of women in other non-traditional careers such as medicine or engineering demonstrating the same characteristics.

Costello Scale II

Contrary to expectations, the female dental hygienists scored significantly higher than the male dental students on Costello's Scale II for Desire to be a Success. It was expected that female dental students and male dental students would score higher on this scale because of the amount of time and effort it takes to receive a degree in dentistry.

Results of the two scales indicate female dental hygienists are as highly competitive and interested in success in the all female environment as female dental students in the traditional male environment. These results support those of Karabenick, Marshall, & Karabenick (1976) who found that high fear of success women depress performance in competitive situations with males. Horner (1972) also asserted that women who evince M_{-s} perform worse in competition with men than with other women or working alone.

Summary

The study investigated the hypothesis that a woman who selects a non-traditional career exhibits a disposition to become anxious about achieving success because she expects negative consequences such as social rejection or feelings of being unfeminine. It was also hypothesized that a woman who chose a traditional career would experience less anxiety. The study also investigated the hypothesis that women who are in a non-traditional career field have a higher desire to seek success than women in a traditional career or than males in the same career. It was speculated that females in both a traditional and non-traditional career field would score higher on a measure of desire to do a job well suggesting their need to affiliate.

Subjects were female members of a dental hygiene program, female dental students, and male dental students. The dental hygienists were enrolled in a two year dental school program which follows two years of college. The male and female dental students were in a four year post-baccalaureate, dental school program. The subjects were randomly assigned in equal numbers to the treatment or control groups.

Prior to the experimental treatment, all the subjects completed a demographic information form. This information was used to describe the subject population. The STAI-S was administered prior to the treatment in order to obtain a pre-state anxiety score. In the experimental groups imagery was used to produce anxiety due to a competitive situation where one is competing with a fellow male student for a prestigious scholarship. Following this another STAI-S was obtained. This resulted in a 2 (experimental and control) X 3 (DSM, DSF, and DHF) design. Upon completion of this a measure of trait anxiety was

obtained and Costello Scale I (desire to do a job well) and Costello Scale II (desire to succeed) were administered.

The demographic data was tabulated and examined. An analysis of variance was utilized to compare the six groups on trait anxiety. An analysis of variance was used to compare the experimental groups on pre and post state anxiety difference scores. The Costello Scale I scores were evaluated by an analysis of variance and a post hoc main effects test was conducted. Costello Scale II was also investigated by the above method except a Tukey post hoc test was used to determine which group means varied signficantly.

Results of the study indicated that women in a non-traditional career did not experience a higher level of anxiety than women in a traditional career or men in the same career field. This conclusion was drawn from the data from the Pre and Post STAI-S Anxiety Scale, which revealed no significant change in anxiety following a competitive situation with a male. Women did reveal a desire to do a job well as was hypothesized indicating a need to affiliate. Contrary to the hypothesized results, the female dental hygienists scored significantly higher than male dental students on a measure of a desire to be a success.

REFERENCES

Alper, T. G. The Relationship Between Role Orientation and Achievement Motivation in College Woman. Journal of Personality, 1973, 41, 9-31.

Anderson, J.R. Arguments Concerning Representations for Mental Imagery. Psychological Review, 1978, 85, 249-277.

Atkinson, J. W. & Feather, N.T. A Theory of Achievement Motivation. New York: Wiley, 1966.

Atkinson, J.W. Motives in Fantasy, Action and Society. Princeton, New Jersey: Van Horstand, 1958.

Argote, L., Fisher, J., McDonald, P. & O'Neil, E. Competitiveness in Males and Females: Situational Determinants of Fear of Success Behavior. Sex Roles, 1976, 2, 295-303.

Bardwick, J.M. Psychology of Women. New York: Harper, 1971.

Bellak, L., The TAT and the CAT in clinical use. Grune and Stratton, New York: 1971.

Cautela, J. Covert Sensitization. Psychological Reports, 1967, 20, 459-468.

Condry, J., & Dyer, S. Attribution of Cause to the Victim. Journal of Social Isssues, 1976, 32, 63-83.

Costello, C.G. Two scales to measure achievement motivation. Journal of Psychology, 1967, 66, 231-235.

French, E., & Lesser, G. Some Characteristics of Achievement Motivation in Women. Journal of Abnormal and Social Psychology, 1964, 68, 119-128.

Hammer, M. The Directed Daydream Technique. Psychotherapy, 1967, 4, 173-181.

Heilbrun, A. B., Kleemeier, C., & Piccola, G. Developmental and Situational Correlates of Achievement Behavior in College Females. Journal of Personality, 1974, 42, 420-436.

Horner, M.S. Sex Differences in Achievement Motivation and Performance in Competitive and Non-competitive Situations. Unpublished doctoral dissertation, University of Michigan, 1968.

Horner, M.S. Toward an Understanding of Achievement-related Conflicts in Women. Journal of Social Issues, 1972, 28, 157-174.

Horowitz, M.J. Image Formation and Cognition. New York: Appleton, 1970.

Karabenick, S. A., Marshall, J. M. & Karabenick, J. D. Effects of Fear of Success, Fear of Failure, Type of Opponent and Feedback on Female Achievement Performance. Journal of Research in Personality, 1976, 10, 369-385.

Komarovsky, M. Cultural Contradictions and Sex Roles. American Journal of Sociology, 1946, 52, 184-189.

McClelland, D.C., Atkinson, J.W., Clark, R.A., & Lowell, E.L. The Achievement Motive, New York: Appleton-Crofts, 1953.

Murphy-Berman, V. Motive to Avoid Success: A Test of Basic Assumptions. Representative Research in Social Psychology, 1975, 6, 37-44.

Murphy-Berman, V. Effects of Success and Failure on Perception of Gender Identity. Sex Roles, 1976, 2, 367-374.

Paivio, A. On the Function of Imagery. Psychological Bulletin, 1970, 75, 385-392.

Paivio, A. Psychology of Language. New Jersey: Prentice-Hall, 1981.

Selltiz, C., Wrightsman, L. & Cook, S. Research Methods in Social Relations, Holt, Rinehart & Winston, 1976.

Spielberger, C.D., Lushene, R.E. & McAdoo, W.G. Theory and Measurement of Anxiety States. Chicago: Aldine, 1971.

Spielberger, C.D., Gorsuch, R.L. & Lushene, R.E. STAI Manual, California: Consulting Psychologists Press, 1970.

Veroff, F., Wilcox, S., & Atkinson, J. The Achievement Motive in High School and College Age Women. Journal of Abnormal and Social Psychology, 1953, 48, 108-119.

Wallin, P. Cultural Contradictions and Sex Roles: American Sociological Review, 1950, 15, 288-293.

Zuckerman, M., & Wheeler, L. To Dispel Fantasies About the Fantasy Based Measure of Fear of Success. Psychological Bulletin, 1975, 82, 932-946.

APPENDIX A

Prospectus

Anxiety in Women Associated with a Non-Traditional
or Traditional Career Choice

Chapter I

Introduction

The past century has witnessed an effort on the part of various feminist

groups to improve the status of American women in contemporary society. The

reality of women's liberation and an increased sense of autonomy and opportunity

for women has raised some interesting questions. An important one concerns a

woman's own ability to deal with this increase in freedom. Horner, (1968)

consistently showed that the expectancy of success in achievement-related

situations was followed by negative consequences arousing a tendency to lower

the level of success in otherwise achievement motivated women. The pheno-

menon then inhibited a woman's performance by lowering her level of aspiration.

Fear of success phenomenon was measured with a revised projective technique

based on the Thematic Apperception Test. The studies were criticized for the

usual problems associated with a projective technique. Many questions were

raised about the validity of projective test (Selltiz, Wrightsman, & Cook, 1976).

The degree of inference involved in the projective tests caused concern about its

validity. The great variety of aspects about which inferences may be drawn and

a reliance on the interpretive skills of the individual analyst are other problems

27

that existed with the use of projective techniques (Bellak, 1971). The procedures for scoring most projective techniques were not specified in detail and leave many of the scoring decisions to the examiner. Projective tests tend to sacrifice precision and reliability in an effort to achieve depth.

Do women who have chosen a non-traditional career field differ significantly from women who have chosen a traditional field on a measure of anxiety? Is this difference accentuated when women are involved in a competitive situation with a male counterpart? In order to adequately investigate these questions, the following topics will be explored: 1) A review of the literature pertaining to history of fear of success and mental imagery; 2) A review of measurements used in past studies to evaluate fear of success and the measurement proposed for use in this study; and 3) A review of anxiety and its relation to this study. Information concerning how and why women choose traditional or non-traditional career fields is included. The major purpose of the study is to measure objectively anxiety produced due to fear of success by women who are in non-traditional rather than traditional careers.

Review of the Literature

Early History

Early investigators (Komarousky, 1946; Wallin, 1950) identified a common tendency for the female to avoid appearing as intellectually competent as the male. The ability to engage in such tactics as "playing dumb" would presumably bring positive responses from the male and society in general. Further investigations have documented the problems of achievement striving for females in a society which maintains a gender-role distinction between

masculine achievement and mastery, and feminine non-competitiveness and lack of aggressiveness (Heilbrun, Piccola, & Kleemeier, 1974).

Achievement motivation has attracted a large number of investigators. Achievement motivation, (n-Ach), was defined as an individual's need to be successful in terms of competition with some standard of excellence (McClelland, Atkinson, Clark, & Lowell, 1953). However, the literature on female motivation was both sparse and inconsistent in comparison to studies involving male subjects (Alper, 1973). She suggested that women appear different from men when measured on achievement motivation because women do not want to achieve as men do. Both the theory and the techniques for testing the theory are male specific. Prior to Horner's work, information relevant to women and achievement was sparse. It included studies of: highly competitive women, bright, academically excellent high school girls (Lesser, Krawitz, & Packard, 1963), intellectually-oriented coeds (French & Lesser, 1964).

Horner (1968) provided a new focus in the study of achievement motivation in women. She asserted that women suffer from a fear of success in competitive achievement situations. For most men, success in competitive achievement activity is consistent with masculinity and self-esteem; however, women often pay a price when they succeed, especially in fields traditionally regarded as more appropriate for men. Success by women in competition with males may be taken as evidence of a lack of femininity and may lead to social rejection and disapproval. This would be particularly disturbing for women because, according to Bardwick (1971), women depend upon the approval and esteem of family and friends and are very concerned with interpersonal relationships.

Fear of Success

     Horner (1968) first postulated the motive to avoid success (M_{-s}) as a stable personality disposition inhibiting achievement motivation in women. This was conceptualized in an attempt to explain the major unresolved gender differences found in previous research (McClelland, et al., 1953; Atkinson, 1958). As a result of her studies, Horner proposed that women who experience career success, risk social rejection and loss of femininity, and their anxiety was aroused concerning a lack of role identification. She suggested that women learn to expect negative consequences from success due to incongruence with gender-role standards, and therefore experience anxiety in competitive situations. She proposed that the motive to avoid success was most apparent in high achieving women in competitive situations with similar men. Horner tested women in competitive situations with men and found that subjects who did not fear success performed significantly better under competitive circumstances. The reverse was true for women with higher fear levels. She concluded that this explained previously incongruous results in the investigation of achievement motivation in women.

     In her study assessing women and motivation, Horner (1968) used a projective procedure to determine the presence or absence of fear of success. This procedure was similar to the standard TAT procedure originally developed by Morgan and Murray in 1935 and revised by McClelland and his colleagues (1953), with the exception that Horner's stories were written to verbal leads rather than to pictures. For women, the verbal cue was "After first term finals, Anne finds herself at the top of her medical school class". The corresponding cue for men was, "After first term finals, John finds himself at the top of his

medical school class". In the 1968 study, Horner presented the female cues to female subjects only and the male cues to only the male subjects. Her subjects were predominantly freshmen and sophmores at the University of Michigan. The stories were scored only for presence (1) or absence (0) of fear of success. No finer distinctions were made. Horner found that approximately sixty-five percent of her female subjects wrote fear of success stories to the "Anne" cue, whereas less than ten percent of the male subjects wrote fear of success stories to the "John" cue.

In Horner's later studies (1972), she indicated that this pattern of gender differences in the production of fear of success had been maintained, except that in recent years there had been an increase in the amount of fear of success expressed by men. More recently, Alper (1973) reported data indicating that fifty percent of the women attending a college for women showed the fear of success syndrome. Both of these authors stated that the level of anxiety raised in these women when they expected that their actions would not receive approval. The anxiety then functioned to inhibit the action which was expected to bring negative consequences.

Atkinson & Feather (1966) stated that avoidance motives inhibit actions expected to have unattractive consequences, but this does not mean that the female seeks failure. The latter is a function of characteristics of the individual. The presence of a motive to avoid success is caused by the anxiety aroused in anticipation of negative consequences. Horner (1972) believed that most women did not want to fail, nor did they have a "motive to approach failure". According to her ideas, the presence of a "will to fail" would mean they were actively seeking failure because they expected positive consequences from failing.

An alternative explanation for achievement problems in women was offered by Heilbrun (1973). He found that women who perceived themselves to be more similar to their fathers than their mothers were more susceptible to both positive and negative vicarious reinforcement effects. Women who felt they identified with male parents were responsive to the success or failure of a male peer. In a situation where a female was competing directly with a male, she could experience major achievement-related conflicts. The fact that the female identified with a male role model could conceivably cause her gender-role confusion and conflict. A later study (Heilbrun, et al., 1974) concluded that distinct achievement patterns for the college female were more likely to be found among those who perceive themselves to be more similar to their fathers. They further stated that females more similar to their mothers formed a more homogeneous group for whom the social role and achievement variables did not align themselves into distinguisable patterns. The findings of a study reported by Oliver (1975) suggested that a girl's father was more important than her mother in determining the degree of her career commitment as a college undergraduate.

Definition of Anxiety

The activity involved in being anxious is a normal reaction that provides us with an ability to adjust to our world. Anxiety has been defined in a variety of ways. Sigmund Freud saw anxiety as a physiological and behavioral pheno-menon associated with reactions such as heart palpitations, disturbances in respiration, sweating, restlessness, tremor, and shuddering. Another definition stated that it consists of unpleasant, consciously perceived feelings of tension and apprehension, with associated activation or arousal of the autonomic nervous system (Basowitz, 1955). Cattell (1966) discussed transitory or state anxiety as a

complex, relatively unique emotional condition or reaction that may vary in intensity and fluctuate over time. An individual's evaluation of a particular situation will greatly influence his reaction to anxiety (Arnold, 1960). Transitory anxiety was typically inferred from: 1) Introspective verbal reports; 2) Physiological signs; 3) Body position or restlessness; and 4) Task performance and clinical intuition (Krause, 1961).

Spielberger (1970) distinguished between two separate types of anxiety: A-State and A-Trait. A-State (STAI-S) anxiety reflected a subject's level of anxiety at a particular moment in time, whereas A-Trait (STAI-T) anxiety was an indicator of how people generally feel. Therefore anxiety was defined differently depending on when it was experienced.

Horner used the word anxiety throughout much of her work to describe the reaction she received from women when they were faced with a conflict between career success and their own identity. She suggested that anxiety was aroused when a person expected that the consequences of an action would bring negative reactions. She further stated that anxiety then functioned to inhibit the actions expected to have negative consequences. For purposes of this study, anxiety is defined as an emotional reaction consisting of uncomfortable feelings of tension and apprehension which are associated with arousal of the autonomic nervous system and resulting behavioral reactions.

Instruments For Evaluating Achievement Motivation in Women

The purpose of the TAT as developed by Morgan & Murray in 1935 was to bring to light the strivings of the individual in imaginative stories suggested by stimulating pictures. McClelland's choice of the TAT for collecting data followed from his basic acceptance of the Freudian hypothesis that a good place

to look for the effects of motivation is in fantasy. McClelland justified the use of the TAT because it was popular as a tool in clinical work. Horner (1968) used McClelland's basic scoring procedures in the TAT but with some revision. A simple present-absent system was adopted for scoring the fear of success imagery. The specific criteria she used as an indication of the motive to avoid success were developed in accordance with Scott's (1958) results. His data showed what happened on a TAT response when a person was confronted with a cue or situation that represented a threat rather than a goal or simultaneously represented a goal and a threat. They gave a negative response.

The TAT has its drawbacks in evaluating achievement motivation in women. Vestewig & Paradise (1977) reported that even though this method has become the standard for research on the achievement motive, there has been much criticism, mainly because of the difficulties inherent in the scoring of projective tests. Enthistle (1972), in a review of the literature, concluded that misgivings held about the viability of n-Ach as a theoretical construct were due to psychometric failings, especially in reliability, of the imagery scoring method. Atkinson & Raynor (1974) felt that Enthistle used a narrow definition of reliability in identifying achievement motive. However they did agree that reliability is one of the greatest challenges the theory must face.

In spite of the difficulties with the TAT, there are not many alternatives to its use for evaluating achievement motivation. Some alternatives were found in limited use, although they are beset with similar problems. An example would be the use of the Wellesley Role-Orientation Scale (WROS) (Alper, 1973). The WROS, a twenty-four item paper and pencil scale, was designed to measure sex-role preference: 1) Traits college girls generally regard

as feminine; 2) Role activities college girls find acceptable for themselves as women; and 3) Career, or career-oriented activities, college girls consider appropriate only for men. Alper felt that the reliability, tested by means of the split-half method, was well within the limits of statistical significance. The value of Spearman's Rho was .58, the p<.01. She found her results to correlate highly with other methods of measuring achievement motivation. Another scale related to achievement motivation was designed by Heilbrun, et al., (1974). The achievement scale consisted of an adjective check list which provided an estimate of the extent to which the individual strives to achieve socially recognized goals. Higher scores indicated greater need achievement for college males and females. The scale has been found to successfully discriminate between college achievers and non-achievers.

Achievement motivation has most often been measured through the scoring of fantasy elicited in story form by TAT-like stimuli. A different measurement method used to study motivation was designed by Costello (1967). It is a non-projective instrument which claims to measure two aspects of the achievement motivation construct. Scale I measures the need to achieve on a task, and Scale II measures the need to be a success. The main advantage of this measurement being that it is non-projective as opposed to most other measures of achievement motivation. Both scales are scored by giving one point credit to questions that should be answered no and are answered no by the subject. One point credit is given to questions that should be answered yes and are answered yes by the subject. There are a total of ten possible points on Scale I and fourteen possible points on Scale II. A variety of occupations were represented in the original studies: college students, nurses, psychiatrists,

firemen, and theology students. The one hundred items of the inventory were correlated and factored. As a result, Scale I and Scale II were developed to measure achievement motivation. Scale I will be used to measure desire to do a job well. Scale II will be used in this study to determine if the subjects have a high or low desire to achieve success.

The State-Trait Anxiety Inventory

The State-Trait Anxiety Inventory (STAI) was chosen for this study to measure anxiety. Construction of the STAI was begun in 1964 with the intent of developing a single scale that would provide objective self-report measures of both state and trait anxiety. The STAI is comprised of two separate self-report scales for measuring anxiety concepts. The A-Trait (STAI-T) scale consists of twenty statements that ask people to describe how they generally feel. Trait anxiety refers to relatively stable individual differences in anxiety proneness (Spielberger, Gorsuch, & Lushene, 1970). The A-State (STAI-S) scale consists of twenty statements with instructions for the subject to indicate what feelings are present at that particular moment in time. State anxiety, unlike trait anxiety, refers to an anxiety reaction taking place at a particular moment in time and at a given level of intensity. State anxiety has been conceptualized as a transitory emotional state or condition of the human organism which is characterized by subjective, consciously perceived feelings of tension and apprehension, and heightened autonomic nervous system activity (Spielberger, et al., 1970). Normative data for the STAI are available for large samples of college freshmen, undergraduate college students, and high school students. This information is also reported for male psychiatric patients, general medical and surgical patients, and young prisoners.

The test-retest reliability of the STAI-T is relatively high, ranging from .73 to .86. But stability coefficients for the STAI-S scale tend to be low, ranging from .16 to .54, as would be expected for a measure designed to be influenced by situational factors (Spielberger, et ai., 1970). Both the STAI-S and STAI-T scales have a high degree of internal consistency. The low correlation for STAI-S is expected, because valid measures of state anxiety should reflect the influence of factors existing at the time of testing. Correlations with the Illinois Psychological Anxiety Test (IPAT), the Taylor Manifest Anxiety Scale (TMAS), and the Zuckerman Affect Adjective Checklist, are reported in the STAI Manual and are moderately high for both college students and patients. Also in the manual is evidence concerning the construct validity of the STAI scale for a sample of 977 undergraduate college students.

The STAI has drawbacks in evaluating anxiety. It has been reported that the items are ambigious and mean different things to different people (Spielberger, 1970). Other criticisms indicate that people do not know them selves well enough to give truthful answers and people are unwilling to admit negative things about themselves (Spielberger, Lushene, McAdoo, 1971). It is also considered necessary for a person to have at least a dull-normal intelligence level before the STAI test results are valid (Spielberger, et. al., 1971). Another concern with measured anxiety on the STAI is that high A-Trait individuals have been described as more self deprecatory and as persons who fear failure; therefore, it might be expected that they will manifest higher levels of A-State in situations that involve psychological threats to self-esteem (Spielberger, et. al., 1971).

Mental Imagery

Mental Imagery has been used as a psychotherapeutic technique and in research to produce anxiety. Imagery was based on the notion that people react to imagined scenes in much the same way they react to real-life events. Imagery has been used within therapeutic frameworks ranging from symbolic techniques characteristic of the psychiatric approach (Hammer, 1967) to behavior modification strategies (Cautela, 1967).

The first systematic research of imagery was conducted in the late nineteenth century by Galton. Using a questionnaire intended to arouse sensory images, Galton (1907) directed his attention toward the study of individual differences. Galton's study used the "breakfast table" questionnaire. He asked people to imagine what they had for breakfast that morning. His results indicated that ten percent of the subjects had no images, where ninety percent could produce images.

Clinical imagery was defined as a sequence progressing toward resolution that used associative information to produce an anxiety reaction (Horowitz, 1970). He submited that imagery also exhibited properties that relate to basic information-processing operations.

An operational definition suggested by Paivio (1970) described imagery as an intervening variable coordinated to measure nonverbal behavior. Paivio (1981) proposed that the imagery system could represent the abstract or affective properties of things but not the language that described them. Images may be incomplete pictures that convey essential types of information . Those from the psychoanalytic tradition (e.g., Horowitz, 1970) accepted the position that minimal subjective awareness is required to consummate basic image

construction because nonverbal processes are habitually used to complete common processing tasks (Anderson, 1978).

Imagery has been frequently used in systematic desensitization (Wolpe, 1958). Lazarus (1964) and Wolpe (1969) stated that an essential prerequisite for successful desensitization was the client's ability to vividly and realistically imagine scenes. It was assumed that individual differences exist in abilities to use imagery and some effort has been made to identify performance differences that can be linked to the presence of vivid as opposed to dim mental imagery. Griffitts (1927) coined the terms visualizers and verbalizers. Visualizers process incoming information with visual-concrete imagery; verbalizers make extensive use of verbal-auditory information processing strategies. Images were commonly referred to as "pictures in the mind's eye"; therefore, each person possessed a unique way to view a particular scene. Sheehan (1967) found individual differences in a general imagining ability across the entire range of sensory modes. Strosahl & Ascough (1981), argue that mental imagery has major theoretical deficits and expressed concern in regards to the functional and structural properties of clinical imagery. They stated that difficulties associated with imagery assessment present major problems. Some problems were relevance of questionnaires, state and trait aspects of imagery, imagery as a learned ability, and differences that occur as a function of emotional arousal.

This study proposes that through the use of mental imagery, anxiety due to fear of success can be aroused in subjects. By suggesting a situation where females would be in a highly competitive situation with a male counterpart, anxiety will be produced and fear of success motivation will function.

Proposed Study

A woman who selects a non-traditional career exhibits a disposition to become anxious about achieving success because she expects negative consequences such as social rejection or feelings of being unfeminine. It is proposed that a woman who chooses a traditional career will experience less anxiety. Research indicates that women who are high achievers also possess a motive to minimize success. Horner (1968) suggested that the motive to avoid success was more characteristic of high achievement-oriented, high ability women than women with opposite characteristics.

Females who have chosen non-traditional careers should score higher on the STAI-S than women in traditional careers. Men in the study should not demonstrate the same high scores on the STAI-S because success for them does not threaten their masculinity.

Research Problem

Do women who have chosen a non-traditional career field differ significantly on a measured scale of anxiety from women who have chosen a traditional career field? Do those women in a non-traditional career differ significantly on a measured scale of anxiety from men in the same field? Do women who are in a non-traditional career field have a higher desire to seek success than women who are in a traditional career or males in the same career?

Sample

The subjects in this investigation are female members of a dental hygiene program, female dental students, and male dental students. The dental hygienists are enrolled in a two year dental school program which follows two years of college. The dental hygienists will comprise the group of subjects

representing the traditional career field. Practicing dental hygienists are usually females and dental hygiene programs consist mostly of females. Female dental students will comprise the group of subjects in the non-traditional career field. Practicing female dentists are few in comparison to male dentists. However, more females are being admitted to dental school programs now than in the past. A group of male dental students will also be subjects. Six groups of subjects will be used:

1) Male dental students are randomly assigned to the experimental group;

2) Male dental students are randomly assigned to the control group;

3) Female dental students are randomly assigned to the experimental group;

4) Female dental students are randomly assigned to the control group;

5) Female dental hygienists are randomly assigned to the experimental group;

6) Female dental hygienists are randomly assigned to a control group;

Procedure

All subjects will be asked to fill out a demographic information sheet. (See Appendix D, p. 67). The resulting information will be used to describe the subjects examined in the study. The information will include: Date of birth, ethnic background, families economic status, mothers and fathers age at the time of the subject's birth, mother's and father's educational level and occupation. Costello's Scale II will be administered to obtain a measure of each subjects desire to be a success. The scale will produce a score which will indicate if the subject is a high or low achiever. Costello's Scale I will be

administered to determine desire to do a job well. It is proposed that the women subjects will score higher on Scale I than male subjects reflecting their affiliation needs. It is further suggested that the female dental students and male dental students will score higher on Scale II reflecting a desire to be a success. Following this all subjects will be administered the State-Trait Anxiety Inventory (STAI-T) measure of anxiety. If the subjects score very high or very low in STAI-T anxiety it will be indicated in the study in order to contribute to the homogeneity of the groups. Since trait anxiety refers to relatively stable individual differences in anxiety proneness, any subject who scores very high or very low in trait anxiety would be unusual. This will be accomplished by using the standards in the STAI manual (Spielberger, et al., 1970).

The subjects will then be assigned to one of six groups to be studied. The technique of imagery will be used to produce anxiety in three of the groups. A tape will be played to the subjects that suggest they are involved in a highly competitive situation with a male peer. The scenario suggests that a female with top grades will be competing with a male who also has equally high grades for a prestigious scholarship. A male professor in their course of study will interview each of them and make the final selection. The scholarship will not only mean money to them now, but also the receipt of it means significant career advancements later. The other three groups are the control groups; rather than an anxiety-producing tape, these groups will listen to a relaxation tape. Prior to the introduction of the imagery lead, each subject will be administered the STAI -S to establish a baseline of existing anxiety. Then following the imagery procedure, each subject is administered the STAI-S to measure a change in anxiety due to the experimental procedure.

The comparison groups (each n = 15) will be subject to the following parameters:

Group 1   Group one will serve as a control group. The group consists of female dental hygiene students who will be exposed to relaxation imagery.

Group 2   In this condition, dental hygiene students will be asked to imagine a situation where they would experience anxiety in regards to their career.

Group 3   Condition three serves as a control group. This group consists of female dental students who will be exposed to relaxation imagery.

Group 4   The female dental students will be exposed to the imagery intended to produce anxiety about their career.

Group 5   The male dental students will be exposed to the relaxation imagery and serve as a control group.

Group 6   The male dental students will be exposed to the imagery intended to produce career anxiety.

Following is a figure which exhibits the above information.

<div align="center">Figure 1</div>

	DSM	DSF	DHF
Anxiety	15	15	15
Relaxation	15	15	15

Research Hypothesis

Five major research hypotheses are proposed:

Hypothesis I

The three experimental groups will score higher on the STAI-T Anxiety Scale than the three control groups.

Ho_1 There is no significant difference between the three experimental groups and the three control groups on trait anxiety. (Refer to Figure 2, p. 50)

Hypothesis II

The three experimental groups will score higher on anxiety measured by the STAI-S than the three control groups. The main effect will test the procedure used in the study to produce the career anxiety in the three experimental groups. These scores will be compared with the three control groups to determine if a significant difference exist between control and experimental groups.

Ho_2 There is no significant difference between the three experimental groups and the three control groups. (Refer to Figure 3, p. 51).

Hypothesis III

The three experimental groups score on the STAI-S will be significantly different from each other. The interaction effect will make a comparison between the dental students (female), dental students (male), and dental hygienists.

Ho_3 There is no significant difference between the three experimental groups; dental students (female), dental students (male), dental hygienists. (refer to Figure 3, p. 51).

Hypothesis IV

Female dental students and female dental hygienists will obtain a higher score on a measure of desire to do a job well than male dental students. This will be measured by Costello's Scale I which measures desire to do a job well.

Ho_4 Female dental students and female dental hygienists will not obtain a higher score than male students on a measure of desire to do a job well. (Refer to Figure 5, p. 51).

Hypothesis V

Female dental students score higher on a measure of desire to seek success than female dental hygienists or male dental students. This hypothesis is addressed by a comparison of dental hygienists, dental students (male), and dental students (female) based on their scores on Costello's Scale II which measures desire to seek success.

Ho_5 Female dental students do not possess a higher desire to seek success than female dental hygienists or male dental students. (refer to Figure 6, p. 52).

Measure of the Dependent Variable

The dependent variable to be observed in this study is: the change in the measurement of anxiety following the administration of a tape using imagery which suggests a competitive situation with a fellow male student to produce anxiety.

Measure of the dependent variable is as follows: A difference score between a pre and post STAI-S anxiety scale.

The State-Trait Anxiety Inventory (STAI) will be used to assess state anxiety before administration of the treatment and following the treatment. The questionnaire will be administered in a group setting although it can be used individually. The STAI-S Scale consists of twenty statements with instructions for the subjects to indicate what feelings are present at that particular moment in time. The scores will be derived as the STAI Manual instructs. A score between twenty and eighty is possible.

Test data of the STAI-S indicate that stability coefficients for the STAI -S Scale tend to be low, ranging from .16 to .54, as would be expected for a measure designed to be influenced by situational factors. The STAI-S has a high degree of internal consistency. The low correlation for A-State is expected, because valid measures of A-State should reflect the influence of factors existing at the time of testing.

Design and Analysis

An experimental design utilizing an experimental and a control group will be used, with equal numbers of female dental students, male dental students, and dental hygienists.

This type of analysis will answer the stated hypotheses in the present study as follows. Program Number Cruncher. . . An Interactive Statistical Analysis System (Hintze, 1982) for use on the TRS-80 Microcomputer will be used to answer the five proposed research hypotheses. The data will be analyzed in the following ways:

Hypothesis I states that there is a significant difference between the three experimental groups and the three control groups on a measure of trait anxiety. (Refer to Figure 2, p. 50). An analysis of variance will be used to make this determination. If a difference does not exist then the data will be processed in the following way:

A 2 x 3 analyses of variance will be conducted between the three experimental groups (DSM, DSF, and DHF) and the experimental and control groups. (Refer to Figure 3, p. 51).

If a significant difference does exist between the three experimental and three control groups on a measure of trait anxiety, the data will be

processed by an analysis of covariance. The three experimental and control groups will be used with the trait scores added as a covariant. (Refer to Figure 4, p. 51). These analyses will establish any interaction that might be obtained and answer hypothesis II and III.

The following tables will demonstrate the results:

TABLE 1

Analysis of Variance for Three Combined Experimental and
Control Groups and Between the Experimental
and Control Groups.

Source	df	SS	MS	F-ratio
A	2			
B	1			
AB	2			

TABLE 2

Analysis of Covariance for the Three Experimental and
Control Groups Using Trait Anxiety as a Covariate.

Source	df	SS	MS	F-ratio
COV	1			
A	2			
B	1			
AB	2			

TABLE 3

Analysis of Variance Between the Three Experimental Groups and
Three Control Groups on Scale I.

Source	df	SS	MS	F-ratio
A	2			
B	1			
AB	2			

TABLE 4

Analysis of Variance Between Three Experimental Groups
and Three Control Groups on Scale II.

Source	df	SS	MS	F-ratio
A	2			
B	1			
AB	2			

Hypothesis IV states that female dental students and female dental hygienists will obtain a higher score on a measure of desire to do a job well than male dental students. This will be measured by Costello's Scale I which measures desire to do a job well. An analysis of variance will be utilized to establish if the difference occurred. (Refer to Figure 5, p. 51).

Female dental students possess a higher desire to seek success than female dental hygienists or male dental students. Hypothesis V is addressed by a comparison of dental hygienists, dental students (male), and dental students

(female) based on their scores on Costello's Scale II which measures desire to seek success. Again analysis of variance will be used to establish if a difference exist. (Refer to Figure 6, p. 52).

Sample size was determined to allow for the preferability of committing a Type I rather than a Type II error. The alpha level will be set at .05 for the main effects. Sample size was calculated and determined to be adequate at 15 per group.

Analyzing the hypotheses this way will answer the question in the study concerning whether women who choose a non-traditional career over a traditional career experience significantly more anxiety in a competitive career situation than women who have chosen a more traditional career. The important long range question is, do women who involve themselves in careers that are not traditional female careers work under stress caused by an internal anxiety that they will exchange their femininity for career success?

Anticipated Results

In this study female dental students will represent women who are pursuing a non-traditional career. It is anticipated that they will experience anxiety related to the fear of success phenomenon. Fear of success as defined by Horner (1968) proposed that women who experience career success, will risk social rejection and loss of femininity, and their anxiety will be aroused because of role conflict. It was also suggested that women learn to expect negative consequences from success due to incongruence with sex-role standards, and therefore experience anxiety in competitive situations with similar men.

It is anticipated in this study that female dental students will experience role conflict and therefore will be anxious. Partially this is true because of

competing with male contempories. In contrast, female dental hygienists will represent women who are involved in a highly traditional female career. It is expected that these women will not experience the same role-conflict and therefore will not experience as much anxiety in a competitive situation with a male. Further, the male dental students in the study will not experience as much anxiety in competition with another male student, because it does not produce role conflict or threaten to lower their masculinity.

It is also anticipated that female dental students and female dental hygienists will score higher on Costello's measure of desire to do a job well than male dental students. It is suggested that this may be due to a woman's need to affiliate and achieve positive regard and acceptance from others. Costello's Scale II will measure desire to be a success. It is expected that female dental students and male dental students will have a higher score on this scale than female dental hygienists, simply because of the amount of time and effort it takes to receive a degree in dentistry.

Figure 2

Trait Anxiety

	Experimental	Control
DSM	15	15
DSF	15	15
DHF	15	15

Figure 3

The difference in pre and post STAI A-State scores for dental students
(female), dental students (male) and dental hygienists (mean scores)

	Experimental	Control
DSM	15	15
DSF	15	15
DHF	15	15

Figure 4

The difference in pre and post STAI A-State scores for dental students
(female), dental students (male) and dental hygienists (mean scores)

	Experimental Pre-test	Post-test	Control Pre-test	Post-test
DSM	15	15	15	15
DSF	15	15	15	15
DHF	15	15	15	15
TRAIT				

Figure 5

Costello's Scale I (mean scores)

Scale Scores	30	30	30
	DSM	DSF	DHF

Figure 6

Costello's Scale II (mean scores)

Scale Scores	30	30	30
	DSM	DSF	DHF

REFERENCES FOR PROSPECTUS

Alper, T. G.   The Relationship Between Role Orientation and Achievement Motivation in College Woman.   Journal of Personality, 1973, 41, 9-31.

Anderson, J.R.   Arguments Concerning Representations for Mental Imagery. Psychological Review, 1978, 85, 249-277.

Arnold, M.B.   Emotion and Personality, Vol. I.   Psychological Aspects.   New York: Columbia University Press, 1960.

Atkinson, J. W. & Feather, N.T.   A Theory of Achievement Motivation.   New York: Wiley, 1966.

Atkinson, J.W. & Raynor, J. O.   Motivation and Achievement, New York: Wiley, 1974.

Atkinson, J.W.   Motives in Fantasy, Action and Society.   Princeton, New Jersey: Van Horstand, 1958.

Bardwick, J.M.   Psychology of Women.   New York: Harper, 1971.

Basowitz, H.   Anxiety and Stress; An Interdisciplinary Study of a Life Situation. New York: Blakiston Division, McGraw-Hill, 1955.

Bellak, L., The TAT and the CAT in clinical use.   Grune and Stratton, New York: 1971.

Cattell, R.B.   Patterns of Change: Measurement in Relation to State-Dimension, Trait Change, Liability, and Process Concepts.   Handbook of Multivariate Experimental Psychology.   Chicago, Illinois: Rand McNally, 1966.

Cautela, J.   Covert Sensitization.   Psychological Reports, 1967, 20, 459-468.

Costello, C.G.   Two scales to measure achievement motivation.   Journal of Psychology, 1967, 66, 231-235.

Entwistle, D.R.   To dispel fantasies about fantasy based measures of achievement motivation.   Psychological Bulletin, 1972, 77, 377-391.

French, E.G. & Lesser, G.   Some Characteristics of Achievement Motivation in Woman, Journal of Abnormal & Social Psychology, 1964, 68(2), 119-128.

Galton, F. Inquiries into Human Faculty. (Orig. publ. 1883). London: Macmilan (Everyman), 1907.

Griffitts, C. Individual Differences in Imagery. Psychological Monographs, 1927, 37.

Hammer, M. The Directed Daydream Technique. Psychotherapy, 1967, 4, 173-181.

Heilbrun, A.B. Parent Identification and Filial Sex Role Behavior: The Importance of Biological Context. Nebraska Symposium on Motivation. Lincoln: University of Nebraska Press, 1973, 125-194.

Heilbrun, A. B., Kleemeier, C., & Piccola, G. Developmental and Situational Correlates of Achievement Behavior in College Females. Journal of Personality, 1974, 42, 420-436.

Hintze, J. Number Cruncher. . . An Interactive Statistical Analysis System Programmed by Dr. Jerry Hintze for use on the TRS-80 Model I and Model III Microcomputer, January 4, 1982, Kaysville, Utah.

Horner, M.S. Sex Differences in Achievement Motivation and Performance in Competitive and Non-competitive Situations. Unpublished doctoral dissertation, University of Michigan, 1968.

Horner, M.S. Toward an Understanding of Achievement-related Conflicts in Women. Journal of Social Issues, 1972, 28, 157-174.

Horowitz, M.J. Image Formation and Cognition. New York: Appleton, 1970.

Komarovsky, M. Cultural Contradictions and Sex Roles. American Journal of Sociology, 1946, 52, 184-189.

Krause, M.S. The Measurement of Transitory Anxiety. Psychological Review, 1961, 68, 178-189.

Lazarus, R.S. Short-Circuiting of Threat by Experimentally Altering Cognitive Apprisal. Journal of Abnormal and Social Psychology, 1964, 69, 195-205.

Lesser, G.S., Krawitz, R.N., & Packard, R. Experimental Arousal of Achievement Motivation in Adolescent Girls. Journal of Abnormal and Social Psychology, 1963, 66, 59-66.

McClelland, D.C., Atkinson, J.W., Clark, R.A., & Lowell, E.L. The Achievement Motive, New York: Appleton-Crofts, 1953.

Oliver, L.W. The Relationship of Parental Attitudes and Parent Identification to Career and Homemaking Orientation in College Women, Journal of Vocational Behavior, 1975, 7, 1-12.

Paivio, A. On the Function of Imagery. Psychological Bulletin, 1970, 75, 385-392.

Paivio, A. Psychology of Language. New Jersey: Prentice-Hall, 1981.

Scott, W.A. The Avoidance of Threatening Material in Imaginative Behavior in Atkinson, J.W. (Ed.), Motives in Fantasy, Action and Society. Princeton: N.J.: Van Nostrand, 1958.

Selltiz, C., Wrightsman, L. & Cook, S. Research Methods in Social Relations, Holt, Rinehart & Winston, 1976.

Sheehan, P.W. A Shortened Form of Bett's Questionnaire Upon Mental Imagery. Journal of Clinical Psychology, 1967, 23, 386-389.

Spielberger, C.D., Lushene, R.E. & McAdoo, W.G. Theory and Measurement of Anxiety States. Chicago: Aldine, 1971.

Spielberger, C.D., Gorsuch, R.L. & Lushene, R.E. STAI Manual, California: Consulting Psychologists Press, 1970.

Strosahl, K.D. & Ascough, J.C. Clinical Uses of Mental Imagery: Experimental Foundations, Theoretical Misconceptions, and Research Issues. Journal of Psychological Bulletin, 1981, 89, 422-438.

Vestewig, R.E. & Paradise, C.A. Multidimensional Scaling of the TAT and the Measurement of Achievement Motivation. Journal of Personality Assessment, 1977, 41, 596-603.

Wallin, P. Cultural Contradictions and Sex Roles: American Sociological Review, 1950, 15, 288-293.

Wolpe, J. Fear Survey Schedule Manual. San Diego, California: Educational and Industrial Testing Service, 1969.

Wolpe, J. The Practice of Behavior Therapy. New York: Pergamon Press, 1958.

APPENDIX B

Demographic Information

Table A

Demographic Information for Male Dental Students
in the Experimental Group

	DSM - 1 - Experimental
1. Classification	Freshman - 14 Sophmore - 1
2. Date of Birth	$\overline{X} = 25.60$ S.D. = 3.74
3. Ethnic Group	Caucasian - 15
4. Size of city where you lived (age 1-6)	0-10,000 - 3/ 10,000-30,000 - 7 30,000-50,000 - 0/50,000-up - 3
5. Families salary range (age 1-6)	0-10,000 - 5/ 10,000-30,00 - 7 30,000-50,000 - 0/50,000-up - 3
6. Mother's age at your birth	$\overline{X} = 25.80$ S.D. = 5.25
7. Mother's educational level	Pre-High - 0/High School - 8 College - 5/Post-Graduate - 2
8. Mother's occupation when you were (age 1-6)	Blue-Collar - 12/Professional -3
9. Father's age at your birth	$\overline{X} = 27.70$ S.D. = 5.28
10. Father's educational level	Pre-High - 0/High School - 5 College - 7/Post-graduate - 3
11. Father's occupation when you were (age 1-6)	Blue-Collar - 4/Professional -11
12. In ten years I expect to be	Private Practice - 13/Army - 2

Table B

Demographic Information for Male Dental Students
in the Control Group

		DSM - 2 - Control
1.	Classification	Freshman - 10 Sophmore - 1 Junior - 2 Senior - 2
2.	Date of Birth	$\overline{X}$ = 26.41 S.D. = 2.99
3.	Ethnic Group	Caucasian - 14 Oriental - 1
4.	Size of city where you lived (age 1-6)	0-10,000 - 2/10,000-50,000 - 4 50,000-up - 9
5.	Families salary range (age 1-6)	0-10,000 - 3/10,000-30,00 - 9 30,000-50,000 - 2/50,000-up - 1
6.	Mother's age at your birth	$\overline{X}$ = 28.07 S.D. = 6.63
7.	Mother's educational level	Pre-High - 0/High School -8 College - 4/Post-Graduate - 3
8.	Mother's occupation when you were (age 1-6)	Blue-Collar - 12/Professional - 3
9.	Father's age at your birth	$\overline{X}$ = 31.80 S.D. = 7.76
10.	Father's educational level	Pre-High - 0/High School - 8 College - 1/Post-graduate - 6
11.	Father's occupation when you were (age 1-6)	Blue-Collar - 6/Professional - 9
12.	In ten years I expect to be	Private Practice - 15

Table C

Demographic Information for Female Dental Students
in the Experimental Group

		DSF - 1 - Experimental
1.	Classification	Sophmore - 9/Junior - 5 Senior - 1
2.	Date of Birth	$\overline{X}$ = 27.00 S.D. = 2.84
3.	Ethnic Group	Caucasian - 13/Black - 1/Oriental - 1
4.	Size of city where you lived (age 1-6)	0-10,000 - 3/10,000-50,000 - 3 50,000-up - 9
5.	Families salary range (age 1-6)	0-10,000 - 3/10,000-30,00 - 8 30,000-50,000 - 1/50,000-up - 3
6.	Mother's age at your birth	$\overline{X}$ = 29.27 S.D. = 8.78
7.	Mother's educational level	Pre-High - 1/High School - 4 College - 7/Post-Graduate - 3
8.	Mother's occupation when you were (age 1-6)	Blue-Collar - 10/Professional - 5
9.	Father's age at your birth	$\overline{X}$ = 29.60 S.D. = 6.19
10.	Father's educational level	Pre-High - 1/High School - 4 College - 7/Post-graduate - 3
11.	Father's occupation when you were (age 1-6)	Blue-Collar - 5/Professional - 10
12.	In ten years I expect to be	Private Practice - 14/Teaching/Admin. - 1

Table D

Demographic Information for Female Dental Students
in the Control Group

		DSF - 2 - Control
1.	Classification	Freshman - 15
2.	Date of Birth	$\overline{X}$ = 25.93 S.D. = 3.17
3.	Ethnic Group	Caucasian - 15
4.	Size of city where you lived (age 1-6)	0-10,000 - 7/10,000-50,000 - 3 50,000-up - 5
5.	Families salary range (age 1-6)	0-10,000 - 3/10,000-30,00 - 10 30,000-50,000 - 0/50,000-up - 2
6.	Mother's age at your birth	$\overline{X}$ = 25.40 S.D. = 5.36
7.	Mother's educational level	Pre-High - 1/High School -8 College - 5/Post-Graduate - 1
8.	Mother's occupation when you were (age 1-6)	Blue-Collar - 12/Professional - 3
9.	Father's age at your birth	$\overline{X}$ = 28.40 S.D. = 7.93
10.	Father's educational level	Pre-High - 1/High School - 5 College - 4/Post-graduate - 5
11.	Father's occupation when you were (age 1-6)	Blue-Collar - 7/Professional - 8
12.	In ten years I expect to be	Private Practice - 15

Table E

Demographic Information for Female Dental Hygienists
in the Experimental Group

		DHF - 1 - Experimental
1.	Classification	Junior - 15/undergraduate
2.	Date of Birth	$\overline{X}$ = 21.80 S.D. = 1.21
3.	Ethnic Group	Caucasian - 14/Indian - 1
4.	Size of city where you lived (age 1-6)	0-10,000 - 5/10,000-50,000 - 7 50,000-up - 3
5.	Families salary range (age 1-6)	0-10,000 - 3/10,000-30,00 - 9 30,000-50,000 - 3/50,000-up - 0
6.	Mother's age at your birth	$\overline{X}$ = 28.47 S.D. = 6.09
7.	Mother's educational level	Pre-High - 0/High School -5 College - 7/Post-Graduate - 3
8.	Mother's occupation when you were (age 1-6)	Blue-Collar - 12/Professional - 3
9.	Father's age at your birth	$\overline{X}$ = 31.13 S.D. = 6.24
10.	Father's educational level	Pre-High - 1/High School - 2 College - 5/Post-graduate - 7
11.	Father's occupation when you were (age 1-6)	Blue-Collar - 3/Professional - 12
12.	In ten years I expect to be	Private Practice - 12/Housewife - 3

Table F

Demographic Information for Female Dental Hygienists
in the Control Group

		DHF - 2 - Control
1.	Classification	Senior - 15/undergraduate
2.	Date of Birth	$\overline{X}$ = 23.33 S.D. = 2.02
3.	Ethnic Group	Caucasian - 15
4.	Size of city where you lived (age 1-6)	0-10,000 - 8/10,000-50,000 - 4 50,000-up - 3
5.	Families salary range (age 1-6)	0-10,000 - 2/10,000-30,00 - 9 30,000-50,000 - 3/50,000-up - 1
6.	Mother's age at your birth	$\overline{X}$ = 26.27 S.D. = 5.38
7.	Mother's educational level	Pre-High - 1/High School -7 College - 7/Post-Graduate - 0
8.	Mother's occupation when you were (age 1-6)	Blue-Collar - 10/Professional - 3
9.	Father's age at your birth	$\overline{X}$ = 26.87 S.D. = 5.17
10.	Father's educational level	Pre-High - 0/High School - 4 College - 4/Post-graduate - 7
11.	Father's occupation when you were (age 1-6)	Blue-Collar - 5/Professional - 10
12.	In ten years I expect to be	Private Practice -12 Teaching/Administration - 3

APPENDIX C

Instructions to the Subjects

Instructions

1. Please fill out the information sheet.

2. Please read the instructions on page 2 of your packet carefully. Respond to the questionnaire to indicate how you feel right now.

3. Listen carefully to the following tape.

4. Please respond to the questionnaire on page 3 of your packet and indicate how you feel right now.

5. Please read the instructions on the questionnaire on page 4 carefully and indicate how you generally feel.

6. Please answer Yes or No to the questions on page 5 of your packet.

7. Please answer Yes or No to the questions on page 6 of your packet.

Experimental Tape (Recorded by a male)

I would like for you to use your imagination. Imagine that you are going to be evaluated in a class where the professor has stated that you will be in competition with a fellow male student. The two of you have the top two grades in the class, and he will select one of you to receive a prestigious scholarship. Imagine sitting in the professor's outer office awaiting the joint interview, which will determine the recipient. Directly across the small office is your male competitor. He appears to be calm and confident.

Relaxation Tape (Recorded by a male)

Please sit comfortably in your chair. I would like for you to use your imagination. Close your eyes and imagine that you are someplace where you can totally relax. Take a deep breath and realx your whole body. Envision that you are lying on a seashore with no other sounds than the gentle flow of the sea on

the shore. You are lying on the sand with the warm sun shining on you. You relax more, and feel as the sea drains away from the shore so does all the tension and stress from your body. Take a deep breath and relax.

APPENDIX D

Test Packet

DSF   DSM   DHF

_____

INFORMATION

Please circle the appropriate response.

1. Classification

2. Date of Birth

3. Ethnic Group

4. Size of city where you lived (age 1-6)

5. Families salary range (age 1-6)

6. Mother's age at your birth

7. Mother's educational level

8. Mother's occupation when you were (age 1-6)

9. Father's age at your birth

10. Father's educational level

11. Father's occupation when you were (age 1-6)

12. In ten years I expect to be

Fresh.   Soph.   Jr.   Sr.

_____

Cau./Black/Oriental/Am Ind./Mex. Am.

0-10,000   10,000-50,000   50,000 up

0-10,000/10,000-30,000/30,000-50,000/
50,000 up

_____

pre-high school/   high school
college   /   post-graduate

_____

_____

_____

_____

_____

In private practice

Specialty area

Administration

Teaching

Other

SELF-EVALUATION QUESTIONNAIRE

Developed by C. D. Spielberger, R. L. Gorsuch and R. Lushene

STAI FORM X-1

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 SO	VERY MUCH SO
1. I feel calm	①	②	③	④
2. I feel secure	①	②	③	④
3. I am tense	①	②	③	④
4. I am regretful	①	②	③	④
5. I feel at ease	①	②	③	④
6. I feel upset	①	②	③	④
7. I am presently worrying over possible misfortunes	①	②	③	④
8. I feel rested	①	②	③	④
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

SELF-EVALUATION QUESTIONNAIRE

Developed by C. D. Spielberger, R. L. Gorsuch and R. Lushene

STAI FORM X-1

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 SO	VERY MUCH SO
1. I feel calm	①	②	③	④
2. I feel secure	①	②	③	④
3. I am tense	①	②	③	④
4. I am regretful	①	②	③	④
5. I feel at ease	①	②	③	④
6. I feel upset	①	②	③	④
7. I am presently worrying over possible misfortunes	①	②	③	④
8. I feel rested	①	②	③	④
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

SELF-EVALUATION QUESTIONNAIRE
STAI FORM X-2

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 *generally* feel. 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 how you generally feel.

	ALMOST NEVER	SOMETIMES	OFTEN	ALMOST ALWAYS
21. I feel pleasant	①	②	③	④
22. I tire quickly	①	②	③	④
23. I feel like crying	①	②	③	④
24. I wish I could be as happy as others seem to be	①	②	③	④
25. I am losing out on things because I can't make up my mind soon enough	①	②	③	④
26. I feel rested	①	②	③	④
27. I am "calm, cool, and collected"	①	②	③	④
28. I feel that difficulties are piling up so that I cannot overcome them	①	②	③	④
29. I worry too much over something that really doesn't matter	①	②	③	④
30. I am happy	①	②	③	④
31. I am inclined to take things hard	①	②	③	④
32. I lack self-confidence	①	②	③	④
33. I feel secure	①	②	③	④
34. I try to avoid facing a crisis or difficulty	①	②	③	④
35. I feel blue	①	②	③	④
36. I am content	①	②	③	④
37. Some unimportant thought runs through my mind and bothers me	①	②	③	④
38. I take disappointments so keenly that I can't put them out of my mind	①	②	③	④
39. I am a steady person	①	②	③	④
40. I get in a state of tension or turmoil as I think over my recent concerns and interests	①	②	③	④

Costello Scale I

Please answer YES or NO to the following questions

1.   Are you inclined to read of the successes of others rather than do the work of making yourself a success?

2.   Would you describe yourself as an ambitious person?

3.   Do you work for success rather than daydream about it?

4.   Would you describe yourself as being lazy?

5.   Do you usually work to do more than just get through an examination?

6.   Will days often go by without your having done a thing?

7.   Do you do things "today" rather than putting them off to do "tomorrow"?

8.   Are you inclined to take life as it comes without much planning?

9.   Do you work hard at a job?

10. Do, or did you, do little preparation for examinations?

Costello Scale II

Please answer Yes or No the the following questions.

1. Do you grow excited when telling someone about the work you are doing?

2. Do you usually remain free from boredom when on holiday?

3. Are you very interested in the lives of successful people?

4. Do you remain relaxed at the though of a difficult task you are about to undertake?

5. Are you usually unimpressed by how hard others work?

6. Are you usually able to sleep even when engaged in an exciting job?

7. Are you usually awed in the presence of very successful people?

8. Can you usually concentrate on what people are saying to you even when an important job is unfinished?

9 Does the great achievement of others sometimes make you feel small?

10. Have you at any time tried to model your life on that of a successful person?

11. Do you readily forget your work when you are on holiday?

12. Are you influenced by those around you in the amount of work you do?

13. Do you usually remain free from envy when others are successful?

14. Do you often compare how well you can do something with how well others can do it?

APPENDIX E

Results of Multivariate
Analysis of Variance

Table G

ANOVA Table for Trait Anxiety

Source	DF	SS	MS	F-Ratio
Experimental and control groups combined for DSM DSF, and DHF.	2	233.49	116.74	1.67
Experimental and Control groups compared	1	152.10	152.10	2.18
Interaction	2	156.47	78.23	1.12
Error	84	5863.60	69.80	1
Total	89	6405.66	71.97	0

Table H

ANOVA Table for the difference scores between a Pre and Post STAI A-State anxiety score

Source	DF	SS	MS	F-Ratio
Experimental and control groups combined for DSM DSF, and DHF.	2	184.02	92.01	0.61
Experimental and Control groups compared	1	7093.34	7093.34	47.21**
Interaction	2	141.09	70.54	0.47
Error	84	12620.00	150.24	1
Total	89	20038.50	225.15	0

**$p < .01$

Table I

Scale I   ANOVA Table for Scale I Showing
Desire to Do a Job Well

Source	DF	SS	MS	F-Ratio
Experimental and control groups combined for DSM DSF, and DHF.	2	25.96	12.98	3.96*
Experimental and Control groups compared	1	0.1	0.1	0.03
Interaction	2	45.07	22.53	6.87*
Error	84	275.60	3.28	1
Total	89	346.72	3.89	0

*$p < .05$

Table J

Scale II   ANOVA Table for Scale II Showing
Desire to Be a Success

Source	DF	SS	MS	F-Ratio
Experimental and control groups combined for DSM DSF, and DHF.	2	77.16	38.58	5.41*
Experimental and Control groups compared	1	3.60	3.60	0.50
Interaction	2	11.47	5.73	0.80
Error	84	598.93	7.13	1
Total	89	691.15	7.77	0

*$p < .05$

APPENDIX F

Raw Data

Raw Data Headings

Column 3 – Pre- Post A-State Anxiety difference score plus a constant of 50

Column 4 – STAI A-Trait Score

Column 5 – Pre- Post A-State Anxiety difference score

Column 6 – Scale I

Column 7 – Scale II

Column 8 – Pre- A-State Anxiety scores

Column 9 – Post- A-State Anxiety scores

Columns	1	2	3	4	5	6	7	8	9
	1	1	56	34	6	5	4	24	30
	1	1	64	45	14	10	7	53	67
	1	1	53	41	3	10	7	46	49
	1	1	61	27	11	5	3	25	36
	1	1	57	28	7	7	6	35	42
	1	1	68	55	18	8	10	51	69
	1	1	64	28	14	7	6	30	44
	1	1	77	26	27	9	9	34	61
	1	1	51	38	1	8	5	28	27
	1	1	59	47	9	6	10	48	57
	1	1	60	52	10	7	6	62	72
	1	1	37	43	-13	10	4	42	29
	1	1	40	53	-10	6	10	61	51
	1	1	53	49	3	7	7	53	56
	1	1	71	42	21	8	10	37	58
	1	2	46	36	-4	5	4	24	20
	1	2	49	38	-1	9	4	34	33
	1	2	43	32	-7	8	5	27	20
	1	2	39	26	-11	8	4	35	24
	1	2	26	51	-24	3	8	69	45
	1	2	31	46	-19	8	9	39	20
	1	2	40	30	-10	9	4	31	21
	1	2	35	33	-15	8	2	40	25
	1	2	47	21	-3	7	7	41	39
	1	2	54	41	4	10	13	41	45
	1	2	42	30	-8	5	7	48	40
	1	2	53	35	3	9	4	44	47
	1	2	48	33	-2	8	6	30	28
	1	2	44	36	-6	8	8	29	23
	2	1	60	38	10	10	8	38	48
	2	1	75	36	25	9	5	25	50
	2	1	61	27	11	9	11	32	43
	2	1	73	42	23	10	10	30	53
	2	1	60	30	10	10	4	32	42
	2	1	55	33	5	8	7	33	38
	2	1	65	29	15	10	3	23	38
	2	1	45	36	-5	10	10	46	41
	2	1	72	39	22	9	11	44	66
	2	1	51	32	1	10	5	43	44
	2	1	83	28	33	10	9	31	64
	2	1	45	52	-5	9	19	63	58
	2	1	55	38	5	10	7	50	55
	2	1	48	51	-2	10	6	50	48
	2	1	60	49	10	10	8	53	63
	2	2	46	39	-4	8	8	36	32
	2	2	32	33	-18	10	8	38	20
	2	2	38	34	-12	4	11	38	26
	2	2	44	43	-6	5	8	27	21
	2	2	21	34	-29	10	5	59	30

Columns	1	2	3	4	5	6	7	8	9
	2	2	46	28	-4	10	7	28	24
	2	2	32	37	-18	10	5	38	20
	2	2	40	31	-10	9	5	34	24
	2	2	48	36	-2	8	13	35	33
	2	2	44	38	-6	9	5	44	38
	2	2	26	29	-24	10	8	64	40
	2	2	48	52	-2	9	11	61	59
	2	2	49	38	-1	6	8	36	35
	2	2	31	51	-19	3	8	47	28
	2	2	44	51	-6	6	12	59	53
	3	1	47	27	-3	6	6	28	25
	3	1	64	24	14	6	5	22	46
	3	1	3b	34	-14	7	12	49	35
	3	1	70	42	20	1	13	29	49
	3	1	73	43	23	7	12	45	68
	3	1	80	32	30	5	9	39	69
	3	1	76	37	26	8	4	38	64
	3	1	65	40	15	7	12	35	50
	3	1	52	29	2	9	13	37	39
	3	1	61	32	11	10	6	40	51
	3	1	57	33	7	8	7	38	45
	3	1	23	36	-27	8	9	65	38
	3	1	62	33	12	9	12	53	65
	3	1	50	39	0	8	10	49	49
	3	1	13	60	-37	3	13	73	36
	3	2	45	24	-5	10	8	27	22
	3	2	25	37	-25	8	12	51	26
	3	2	49	28	-1	10	9	31	30
	3	2	22	30	-28	10	7	48	20
	3	2	42	45	-8	8	9	40	32
	3	2	32	31	-18	10	11	39	21
	3	2	47	39	-3	8	8	28	25
	3	2	10	31	-40	7	8	60	20
	3	2	55	28	5	8	6	31	36
	3	2	47	27	-3	7	5	24	21
	3	2	31	52	-19	6	10	45	26
	3	2	37	30	-13	9	10	33	20
	3	2	47	25	-3	8	5	25	22
	3	2	47	38	-3	10	8	27	24
	3	2	47	26	-3	8	9	23	20