

AN ABSTRACT OF THE THESIS OF

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The major objective of this study was to form a predictive profile of the highly anxious first-year undergraduate. Specifically, statistical analysis was used to determine which combination of the variables tested interacted to account for the highest percentage of variance in the degree of anxiety experienced by freshmen. The individual factors of sex, Greek affiliation, place of campus residence, size of hometown, parental level of education, academic school, grade point average, and degree of financial concern were individually tested for correlation with high states of anxiety.

The State Form of the State Trait Anxiety Inventory was used as the primary measure for this research. The STAI-A Form is a twenty-item questionnaire which provides a valid measure of an individual's current state or degree of anxiety. Demographic data were obtained from a

university computer bank and a separate five-item questionnaire.

Two hundred residence hall students and two hundred students living off-campus, in fraternities, and in cooperative houses were surveyed. Two hundred and five valid responses were gathered.

The individual independent variables were tested with the dependent variable anxiety using an ANOVA or T-Test, depending on the data type. The predictive combinations were tested using both a stepwise multiple regression and an interactive stepwise multiple regression.

Of the hypothesized relationships, only student financial concern was shown to be significantly related to anxiety. Students indicating concerns about financing their educations were shown to be significantly more anxious.

The regression equations failed to account for a significant enough degree of variance to allow the formation of a predictive model. Degree of financial concern was found to account for a small percentage (3.7%) of the total variance. When combined with sex, degree of financial concern accounted for slightly more (5.8%) of the variance.

The results of this research suggest that the hypothesized relationships between various demographic and sociological factors and anxiety do not exist. These results indicate that some other variables must be used to attempt prediction. The literature related to anxiety suggests self-concept as a possible significantly related construct.

A Predictive Model for Identifying
the Highly Anxious Freshman

by

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A PREDICTIVE MODEL FOR IDENTIFYING THE HIGHLY ANXIOUS FRESHMAN

CHAPTER I

INTRODUCTION

A primary goal of those who consider themselves professionals working with students is to be a positive, contributing factor in the total educational experience (Brown, 1972; Miller and Prince, 1976). Students are developing, growing, changing, and learning while at college. Effective professionals are those who facilitate growth by understanding the developmental needs of students and seeking to aid that growth (Chickering, 1969). Aiding the development and growth of other human beings requires both knowledge and skills. Educators need to remain current in their study of developmental literature and also need to generate new research to complement that which is already known (Brown, 1972).

Miller and Prince (1976) have been effective in their call for the emphasis on professional skills necessary to aid and foster intentional, proactive student development. Being aware of general developmental theory is not enough. Intentional student development work must begin with assessment. The effective professional learns as much as possible about students at a particular campus in order to accurately assess their needs (Miller and Prince, 1976). Cosner, Chandler, and Spies (1980) write of the need for effective entry-level assessment. Educators can have more of a positive impact if they assess students early and begin to use the accumulated information.

According to William McReynolds (1976), "Anxiety leads a

double life in mainstream psychology--as a specific state of emotion and as a construct capable of accounting for behavioral phenomena" (p. 282). Anxiety is also seen as a warning that an individual does not quite mesh with the current milieu (Costello, 1976). Coelho (1980) sees anxiety as a developmental challenge for adolescents.

The debilitating effects of anxiety on academic performance are well-known and well-researched (Spielberger, 1966; Spielberger and Gaudry, 1971; Denney and Rupert, 1977; Shelton and Madrago-Peterson, 1978; Thompson and Griebstein, 1980). According to Spielberger, anxiety "reduced effectiveness in studying and actively interfered with thought processes during exams" (1966, p. 361). Other researchers, such as Shelton and Madrago-Peterson (1978), have found an inverse relationship between anxiety and college students' grades. Thompson and Griebstein (1980) have found that anxiety disrupts studying and the development of good study habits among freshmen.

The effects of anxiety on academic performance go beyond a lowering of scholastic quality or output. Spielberger and Gaudry (1971) have found students with high levels of anxiety to have higher probabilities of dropping out of school. Anxiety also contributes to problems in other areas of students' lives. Barnett and Dalton (1981) surveyed undergraduates and found that stress and test anxiety was the major reason for academic cheating. Arkowitz et al. (1978) found dating anxiety not only to be very common among college men, but to be significantly related to depression and other emotional disorders. The connection between anxiety and alcohol or drug abuse has been recorded by numerous authors (Kilpatrick et al., 1976; Sarason and Spielberger, 1980). Clearly high levels of anxiety can be a negative factor and can have a debilitating effect on the developmental and educational experiences of college students.

SIGNIFICANCE OF THE PROBLEM

The effects of high levels of anxiety on academic performance can be serious. In one study, Spielberger (1966) found ". . . the percentage of academic failures was nearly four times as great for able students with high anxiety as it was for low anxiety students of comparable ability" (p. 395). Waid et al. (1978) found high levels of anxiety to be particularly harmful to reading comprehension. Spielberger and Gaudry (1971) and Sarason and Spielberger (1980) have found that the more complex the task, the greater the debilitating effect of anxiety. High levels of anxiety have little effect on the academic performance of either the upper or lower ranges of ability. It is the great mass of middle ability students who are negatively affected (Spielberger and Gaudry, 1971).

The pressures of anxiety-induced academic failure can be disruptive to other areas of student life. Spielberger (1971) notes that "Strong motivations to achieve high grades appear to contribute directly to the adjustment difficulties of many students whose anxiety about failure is intensified by the academic situation" (p. 119). Janisse and Palys (1976) believe that anxiety is very much a part of a student's daily routine and that "anxiety may be aroused both by real events (situation) or by thoughts (memories and/or expectations about particular events)" (p. 502). Anxious freshmen do not attribute their anxiety to past events as often as to their current situation. In a group counseling setting, Spielberger (1966) found that methods of study, dormitory life, and vocational goals were the most often discussed sources of anxiety. Mendonca and Siess (1976) note that "inability to attend to task" greatly inhibits vocational choice (p. 346). Many other problems such as immature behaviors,

cheating, and drug or alcohol abuse have been correlated with high levels of anxiety (Kilpatrick et al., 1976).

Researchers have found a number of possible factors linked to high states of anxiety. Current environmental stimuli are what Spielberger (1966) asserts are behind many anxiety-related problems. Age, sex, and grade point average have also been linked to anxiety. A student's choice of academic major has been shown to be significantly related to anxiety (Hawkins et al., 1977). Bondy et al. (1980) posits that anxiety is triggered by noise, overcrowding, competition, and financial worries. Taking a more anthropological and sociological view, Coelho (1980) believes that there is less anxiety in a friendlier, more familial residence even when crowding exists. Coelho has also linked anxiety with rural backgrounds and students who are the first of their families to attend colleges. There is research on both sides of the question of whether sex is a factor in producing anxiety in undergraduates. Janisse and Palys (1976) have shown that females tend to experience more intense states of anxiety, while neither sex is more frequently a victim of anxiety's effects.

Early identification and differential treatment for higher anxiety students is recommended by several authors (Spielberger and Gaudry, 1971; Spielberger, 1971; Deffenbacher et al., 1979; Thompson et al., 1980; Cosner et al., 1980). By learning who the anxious students are, educators may be able to prevent both academic and emotional disorders (Spielberger, 1971). Thompson et al. (1980) have found that treatment for freshmen with anxiety problems has resulted in higher grade point averages. In community colleges Cosner et al. have experimented with different instructional techniques. Highly anxious students respond better to more structured, lecture-oriented teaching (1980). Spielberger sums up the problem

teaching (1980). Spielberger sums up the problem when he says:

On the basis of these findings, it seemed to us that the loss to society of the full contributions of potentially able students through underachievement and/or academic failure constituted an important mental health problem in higher education. But the findings also suggest that it was possible to identify members of the college population who, because of emotional problems, were not likely to function at levels commensurate with their intellectual abilities. If identified early in their academic careers and offered appropriate therapeutic opportunities, could the academic mortality rate be reduced for able students whose emotional problems predisposed them to failure? (1966, pp. 380-381).

PURPOSE OF THE STUDY

The major purpose of this study was to form a predictive profile of the highly anxious first-year undergraduate. Statistical analysis was used to determine which factor or factors best predicts a high state of anxiety. Also, individual factors such as age, sex, place of campus residence, prior academic success, membership in Greek organizations, and size of hometown were correlated with high A-State anxiety scores.

Definition of Terms

In order to promote clarity, certain terms used in this research are defined.

1. First-year undergraduate (student). This refers to any student regularly enrolled at Oregon State University, and engaged in his or her first educational experience beyond high school. In the fall of 1981, there were 2,070 first-year students. Students who were over 25 or had completed three or more terms of college were ineligible for this research.
2. Anxiety. ". . . self-referent preoccupations that direct attention from the task at hand to personal worries about perceived inefficiency" (Sarason, 1978, p. 102). In this research, anxiety is a self-perceived and self-reported construct.
3. State Anxiety (A-State). ". . . is conceptualised as a transitory emotional state or condition of the human organism that is characterised by subjective, consciously perceived feelings of tension and apprehension and heightened autonomic nervous system activity. A-State

may vary in intensity and fluctuate over time" (Spielberger and Gaudry, 1971, p. 14).

4. Trait Anxiety (A-Trait). ". . . refers to relatively stable individual anxiety proneness" (Spielberger and Gaudry, 1971, p. 15).
5. Campus Residence. Where a student lives while attending school.
6. Previous Academic Success. A student's cumulative grade point average.

RESEARCH HYPOTHESES

1. There will be no significant difference in the degree of anxiety of men and women.
2. There will be no significant difference in the degree of anxiety of women who belong to sororities and women who do not.
3. There will be no significant difference in the degree of anxiety of men who belong to fraternities and men who do not.
4. There will be no significant difference in the degree of anxiety of rural and non-rural students.
5. There will be no significant difference in the degree of anxiety of students living in residence halls or off-campus (includes fraternities and co-operatives).
6. There will be no significant difference in the degree of anxiety of students with different previous levels of academic success.
7. There will be no significant difference in the degree of anxiety of students who are first-generation college students and other students.
8. There will be no significant difference in the degree of anxiety of students enrolled in different academic schools.
9. There will be no significant difference in the degree of anxiety of students experiencing concerns about financial problems and students not experiencing such concerns.

Research Question

Is there a combination of factors which can predict a high level of state anxiety for the first-year undergraduate?

Limitations of the Study

1. All of the subjects studied were first-year undergraduates at Oregon State University.
2. The data gathered are of the self-report nature and as such are dependent on the honesty and self-awareness of the respondents.

CHAPTER II

REVIEW OF RELATED LITERATURE

This review of related literature will provide an overview of the scholarly works related to the origin and nature of anxiety, an explanation of the state-trait theory of anxiety, and the relationship between anxiety and academic performance.

The Origin and Nature of Anxiety

Symptoms are created to avoid the outer or inner danger situation of which anxiety sounds the alarm.

— Sigmund Freud

It is impossible to consider anxiety as an aspect of personality development and function without turning first to Freud. His influence is of course both pervasive and profound. Though more recent theorists would disagree with his psychoanalytic explanation of the origins of anxiety, they concur with his thesis of the role of anxiety as an adaptive tool of the organism (Izard, 1972). In his earliest examination of anxiety Freud dismissed it as a biological reaction to sexual dysfunction (Levitt, 1980). More thorough study and reflection caused a reconsideration of his position. Freud came to realize that anxiety was a major foundation of the entire personality structure. "Freud considered that anxiety is a signal which reminds the person of his helplessness without love and protection" (Ranzy, 1963, p. 173). Ranzy believed Freud to have four conclusions concerning anxiety in the modern world:

1. Man is always bound to be anxious.

2. Man has lost his capacity to fear.
3. As we learn more about anxiety we gain the capability to alleviate its symptoms.
4. Through a therapeutic return to the original anxiety formation, anxiety induced defense mechanisms can be restructured (1963).

As each individual possesses libido, he or she is fated to suffer from anxiety as that libido is repressed (Freud, 1935). Levitt (1980) explains that Freud discovered three types of anxiety based on provocation. Freud's (1935) "real" or "reality" anxiety comes from a readily identified source. It is based on the human perception of reality tempered by the level of knowledge concerning the environment experienced. Anxiety (real) is the ego's self-preservation instinct. As Freud (1935) writes "anxiety relates to the condition and ignores the object" (p. 343). Anxiety deals with an internal struggle based on perceptions of the external world. It is to Freud both sensible and adaptive (1935). The other two types of anxiety are neurotic and moral. They can easily become dysfunctional and are the result of the birth trauma and infant's early struggle to survive (Freud, 1935).

Garre (1962) continued Freud's work in studying anxiety as a remnant of each human's struggle to become autonomous. He writes that "basic" anxiety is present in all children and is based on the acceptance or rejection of the infant by the mother figure (p. 6). The severity of initial basic anxiety determines the level of the individual's future responses. External stress is the basis of subsequent disturbances. If the fear pattern remains unaltered the individual is likely to be pervaded by free-floating anxiety, unrelated to any outside causes. According to Garre (1962) it does not matter if a threat is real or perceived; anxiety becomes "a physiological response to stress as the mobilization of energy resources aimed at

overcoming the danger to our existence" (p. 6).

The eminent psychoanalyst Rollo May (1977) wrote "that anxiety is a diffuse apprehension, and that the central difference between fear and anxiety is that fear is a reaction to a specific danger while anxiety is unspecific, "vague," "objectless" (p. 205). Though anxiety is diffuse the threat is not. Anxiety is a reaction to a threat to a value that is central to the core of the existence of the organism. What is threatened, according to May (1950), is the "core or essence of personality" (p. 191). Anxiety is objectless because it strikes at the very center of being. It touches off a fear of "becoming nothing" (p. 193). What Freud calls "real" anxiety and Garre termed "basic" anxiety, May calls normal anxiety. Normal anxiety is proportionate to the threat, does not involve repression, and does not require neurotic defense mechanisms for its management. Anxiety is a normal adaptive feature of humans. Individuals become neurotic when one or more of the above three conditions become reversed (May, 1950).

Izard (1972) attempts to tie together the psychoanalysts and the cognitive theorists when he writes,

realistic assessment and appropriate emotional response to the threat of occurrence of a danger situation are relatively more influenced by innate factors, whereas unrealistic assessment and inappropriate emotional response may be relatively more influenced by learning (p. 67).

Spence and Spence (1966) fit anxiety into learning or what they call drive theory. Their formula for anxiety is

$$E = f(HxD)$$

Where E is excitatory potential, H is learning factor and D is drive factor. Anxiety is a secondary drive, a source of secondary reinforcement. The reduction of anxiety is reinforcing. This leads to learning (Strongman, 1978).

Avoidance of pain is a primary drive. Anxiety is based on the innate tendency to avoid pain. According to Levitt (1980), anxiety begins with the attachment of pain to a particular stimulus. If the fear reaction is strong enough, it is extended to similar objects or situations. For example, if a child is severely bitten by a dog (drive), the learning factor (H) may be strong enough that the individual's (E) potential for excitement is always raised by any dog or similar animal. Spence and Spence (1966) view anxiety as a motivator which can be positive or negative. More complex tasks have more than one H or learning factor. The higher the drive level, the greater difference between E's, the values of correct and incorrect responses. The results of the drive motivation depend upon which response was initially stronger (p. 300). C. D. Spielberger's treatment of state-trait anxiety owes much to the work of Spence and Spence on drive theory. Spielberger's contribution will be discussed in a separate section of this literature review.

Mandler (1966) asserts that anxiety is the result of interruption. The interruption of an "organized behavioral sequence" can lead to anxiety in the individual (p. 263). Anxiety can also result from the interruption of cognitive sequences (plans). If an organized activity cannot be completed or a plan is blocked, and this interruption is not foreseen by the individual, anxiety obtains. The interruption leads to arousal which leads to emotional behavior. The emotional behavior of choice is anxiety when the onset of arousal is not under the control of the individual. Helplessness or loss of control is central to Mandler's theory of anxiety.

Most recent theorists concern themselves to a greater extent with the nature rather than the origin of anxiety. Anxiety is both an emotion and a cause of behaviors

(McReynolds, 1976). Researchers and theorists are struggling to understand what triggers anxiety and the relationship of anxiety to human development and behavior. Strongman (1978) feels that anxiety is a "proneness to respond to real danger maladaptively" (p. 234). This is because anxiety states result from non-objective danger, such as a loss of control or the beginning of a new social situation. Such non-objective threats (psychological conflicts for example) are not accurately perceived and therefore the reaction is inappropriate. Strongman contends that "anxiety reactions are normal adaptive responses which carry unpleasant emotional overtones" (p. 232). Strong expectations of danger, threat, or distress are involved. The individual realizes that extra effort may be necessary, but cannot be expended at present. There is then an unnecessary buildup of the physical symptoms of anxiety.

In defining anxiety, Epstein (1972) sees expectancy as an independent variable leading to the dependent variable, anxiety. He defines anxiety as "a state of undirected arousal following the perception of danger" (. 273). In any kind of crisis it is imperative that the organism assess the situation quickly and prepare to take action. Anxiety arouses the individual and aids in the preparation for action. Walker (1975) views anxiety as "the reaction we have to a situation where we believe our well-being is endangered in some way" (p. 3). The difficulty comes from excessive anxiety.

Gilbert (1976) agrees with Mandler and observes that a loss of control or change in environment can increase anxiety. Anxiety can result as an effect of environmental stress on the human coping mechanisms. The individual's ability to handle stress is more important than the amount of stress encountered. Sarason, in a similar theory, maintains that stressors lead to anxiety if the

individual lacks adequate coping mechanisms or becomes pre-occupied with self-doubt (1981). Grinker (1966) also notes that anxiety increases with loss of control. As anxiety mounts the autonomic responses increase and a human being can suffer from cognitive breakdown.

The subject's awareness of anxiety is a key factor in Grinker's (1966) understanding. Anxiety can be recognized and communicated. The adaptive nature of anxiety is important, but "excessive amounts of anxiety produce disturbances in performance, inefficiency, and often serious consequences." Further, anxiety can increase anxiety and tends to have a multiplying effect (p. 129).

Basowitz et al. (1955) maintain that anxiety has two functional roles in human behavior. First, anxiety is the precursor of the individual's defensive and adjustive processes. Anxiety is also the result of the breakdown of these same processes. In these authors' words, "anxiety warns of anxiety" (p. 2). The individual attempts to regulate or master the degree of control anxiety has in any given situation.

Emotions are proposed as a response rather than a cause by Lazarus and Averill (1972). The essential determinant of behavior is cognition. First there is a cognitive appraisal of the situation, then a physiological reaction. Finally, there is some form of expressive behavior. Anxiety is explained as part of a circular pattern. There is an ebb and flow. As the situation changes or remains stable, there is new cognitive information to absorb, feedback to be processed, and reflection to be considered. Anxiety levels rise and fall as an individual encounters and then thinks and reacts. Averill (1980) writes that the individual responds according to a continually updated appraisal of any given situation. Emotions are "social constructs" or "rules of culture"

(p. 64). Anxiety is characterized by cognitive disintegration. It is a signal of the frailty of the cognitive systems. There is a disruption of the sense of personal identity in the absence of any supportive frame of reference (1976). Anxiety must be viewed in light of an individual's relationship with the environment. A state of anxiety results when there is a strain or break in this relationship.

McReynolds (1976) and Costello (1976) recognized the relationship between anxiety and environment. Anxiety is a very personal, very painful experience (McReynolds, 1976). Primary anxiety is a negative response to the "backlog of cognitive processing" (p. 67). Because culture is increasingly complex and humans must adapt to the complexity, anxiety occurs. McReynolds (1976) explains it well:

There are three ways in which a backlog of unassimilated percepts can occur:

1. By the continued occurrence, or recurrence of incongruent percepts which the person is unable to resolve, so that they accumulate and build up over time.
2. By the rapid, relentless, ongoing occurrence of percepts which have a kind or degree of incongruence that could readily be resolved under a more normal pace, but which build up due to the absence of sufficient opportunities for resolution.
3. By the deassimilation of certain previously resolved perceptual material, leading to a sudden, drastic buildup of the percept backlog (p. 59).

Costello (1976) asserts that humans are now living in an "age of anxiety" (p. 1). The power of any emotion is measured by the power of the behavior explained by it. Emotional behavior is not intentional. It can be disturbing because it appears to have no cause, follow no pattern. Anxiety serves as a warning that the individual's level of competence is too low for the necessary task. There is a

"mismatch between environmental events and the person's pattern of behaviors" (p. 41). Anxiety can be positive. It is a sign of progress or possibility. When an individual is uncertain about the appropriate response in a situation, anxiety becomes the response. Anxiety provides time for an assessment; it can be a stalling technique for an ill-prepared person. It may be a natural reaction of the organism to the increasing complexity of the environment. Costello (1976) suggests that it is better to help prepare the individual than cure the anxiety. When anxiety occurs the individual must cope and then resolve the perceived, or real mismatch with the environment. In the long run anxiety may serve an adaptive, positive function. This is why the effects of anxiety are so pervasive, so often overwhelming. It is so that the message will not be missed. Adapt or fall by the wayside. New behaviors must be learned in order to quell the anxiety, in order to function more competently in a complex world.

Summary

The psychoanalysts see anxiety as an innate part of every human being. It is a result of the infant personality trying to survive and function. The degree of that early trauma determines the anxiety patterns for life. Anxiety serves a positive, adaptive function unless it is so strong it overwhelms the individual. This maladaptive anxiety is the source of neuroses. Cognitive theorists posit that anxiety is part of a learned response, or is a reaction to an interruption of a plan or behavioral sequence. Most recent anxiety theory and research centers around the relationship of the individual and the environment. Anxiety is a warning signal for a lack of ability to cope or deal with a new or unexpected situation. It is

almost as if anxiety focuses the organism until a new response can be learned or identified. Not all anxiety therefore is negative. It serves an adaptive, positive purpose, within limits. Some individuals do not adapt as a result of anxiety; they become paralyzed. Pre-occupation with self-doubt and self-worry is the first step in the negative effects of anxiety.

The State-Trait Theory of Anxiety

Cattell and Scheier (1960) first used the terms state and trait to describe two different aspects of anxiety. From factor analytic studies Cattell and Scheier determined the validity of the two constructs (Spielberger, 1966). Trait anxiety is stable, individual differences in a reasonably permanent personality component. State anxiety is a fluctuating, transitory variable (Cattell and Scheier, 1960). Deffenbacher and Skelton (1978) view trait as a measure of general or non-targeted anxieties. State anxiety has a fixed or objective cause. Trait anxiety is how often and state anxiety is how much, in the opinion of Janisse and Palys (1976). State anxiety is likely to be part of an individual's daily routine, depending on the number and frequency of perceived threats. Anxiety is solely based on the individual's perceptions and feelings.

Spielberger (1966) asserted that certain crucial stimuli were responsible for the fluctuations in an individual's level or degree of state anxiety. Individuals with different levels of trait anxiety respond with different degrees of state anxiety. Though little research has been done to identify the crucial stimuli, Spielberger believes fear of failure may be important (1972). In attempting to learn about trait anxiety most researchers work with groups of subjects pre-supposed to differ in levels of anxiety. Trait anxiety measures identify proneness or tendency towards a higher state of anxiety (Spielberger,

1966). It is important to distinguish between the condition of anxiety and the stimuli hypothesized to cause such a condition.

Levitt (1980) offers four means of recognizing or identifying a state of anxiety: a verbal or written description; subtle or minor physical symptoms; inner-body physiological reactions; and voluntary physical movement or rigidity. The four modes are not interrelated. One or all may be present in an individual. Six measures of transitory anxiety are offered by Krause (1961):

1. introspective reports,
2. physiological signs,
3. molar behavior (e.g., body posture, gesturing, speech characteristics),
4. task performance,
5. clinical intuition,
6. and the response to stress (p. 178).

Introspective reports, corresponding with Levitt's verbal or written description, are the most widely accepted as a valid means of identifying anxiety. Levitt (1980) writes that a conscious or cognitive awareness of anxiety is of greater impact on the individual's behavior. All of this assumes that the subject can honestly assess his or her own level or state of arousal. With accurate assessment and honest reporting the state of anxiety can be identified and measured (Spielberger and Gaudry, 1971).

Charles D. Spielberger has done more to validate and research the concept of trait-state anxiety than any other theorist (Levitt, 1980). It is important then to examine what Spielberger has to say about anxiety and the theory of a trait-state dichotomy. Spielberger et al. (1980) assert that if a stress situation appears harmful to the individual, it causes an anxiety state as a response. Anxiety states are temporary emotional conditions, including perceived symptoms or behaviors. The anxiety state is

assessed by the degree of the subjective feelings present. Particular feelings or emotions are felt and certain physical arousals are noticed. Anxiety states come and go and certainly are more or less intense. The length of a state of anxiety is also variable. They are dependent upon the amount and frequency of stress in an individual's life, and that individual's perception of the relative degree of danger or threat posed by that stress. No individual can be completely isolated from stress or stress-producing situations. There is always the potential for stress. The individual's predisposition towards stress and perception of the environment are the variable elements (Spielberger and Diaz-Guerrero, 1976).

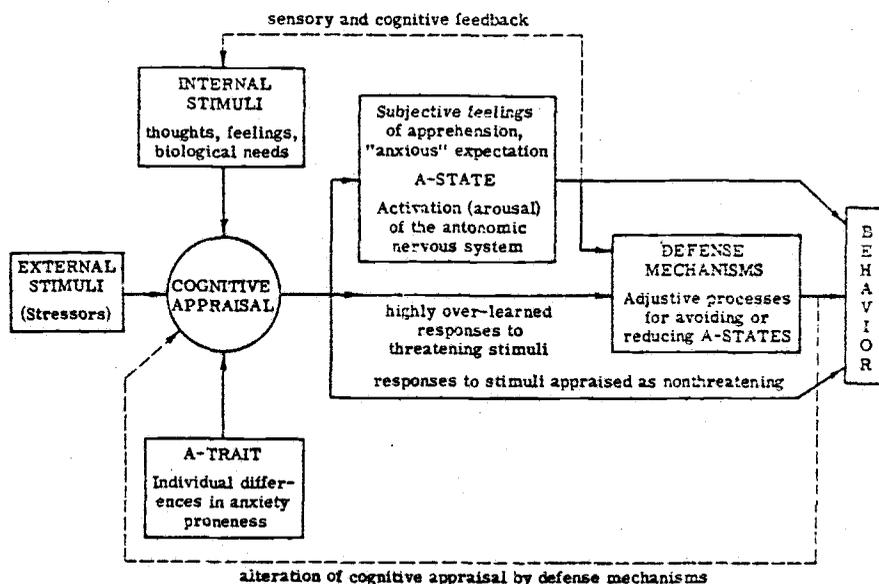
Spielberger is concerned about the prevalence of anxiety in modern life. In traditional terms, anxiety has been characterized as "objectless" or cueless (1976, p. 6). More recent research confirms May's belief that anxiety is often associated with real or perceived threats to self-concept or basic personality (1977). Persons with high levels of trait anxiety are more prone to react with high degrees of state anxiety when confronted with such threats. This is particularly evident in situations where personal worth and competence are valued or are important.

Anxiety is two different concepts in one word. A person can be anxious or someone can be an anxious person. The former condition is most often thought of as a temporary state, a reaction or response that varies in intensity over time. The latter meaning involves a personality trait, a disposition, proneness, or tendency (Spielberger, 1966). The two varieties of anxiety are interrelated. Those individuals with a high level of trait anxiety are more likely to experience high states of anxiety on a more frequent basis. State anxiety is ongoing; trait anxiety

is potential. State anxiety requires a stimulus for arousal. Trait anxiety appears to be innate. Figure 1 helps to clarify the difference and relationship of state and trait anxiety.

Individuals experiencing a state of anxiety have a conscious perception of heightened stress or tension. The autonomic nervous system is aroused. Anxious individuals

Figure 1



(Spielberger, 1966)

are aware of their anxiety. Subject with the trait of anxiety evidence a predisposition to perceive threats from their environment and to react with a state of anxious behavior. Usually this reaction is of greater intensity than the situation warrants (Spielberger, 1966).

In order to measure and define state and trait as unique personality components, Spielberger and others developed the State-Trait Anxiety Inventory (STAI). For the purposes of further research and evaluation Spielberger and Gaudry (1971) defined state and trait as follows:

State anxiety (A-State) is conceptualised as a transitory emotional state a condition of the human organism that is characterised by subjective, consciously perceived feelings of tension and apprehension and heightened autonomic nervous system activity. A-states may vary in intensity and fluctuate over time.

Trait anxiety (A-Trait) refers to relatively stable individual differences in anxiety-proneness, that is, to differences between people in the tendency to respond to situations perceived as threatening with elevations in A-State intensity (p. 14).

Spielberger et al. (1980) stated that seven factor analytic studies between 1968 and 1980 supported the posited distinction between state anxiety and trait anxiety. The STAI-State-A Scale is a measure of the transitory anxiety experienced by individuals. It can be used to differentiate between patient populations or as an experimental measure. The State-A Scale essentially measured tension, apprehension, and nervousness. The Trait-A Scale is used to differentiate between people of groups on the basis of anxiety proneness (Spielberger, 1976). The STAI has become the most widely used instrument for measuring anxiety (Buros, 1978). Its use and acceptance are growing evidences of the validity of Spielberger's research and theories. Through the wide use of the STAI, norms have been developed for several populations. Appendix E represents the mean scores for STAI State scales and the mean scores for the sample population in this study.

Summary

The concept of anxiety as two separate factors has been researched for over twenty years. Trait anxiety is the stable, enduring personality component. An individual classified as an anxious person has trait anxiety. It is part of the basic personality. Trait anxiety is the

tendency or proneness to view with greater frequency or with more alarm threats to self-esteem or self-worth. An individual with a high level of trait anxiety is more likely to respond to perceived threats or danger by becoming anxious. When an individual is anxious they have state anxiety. This is a temporary condition which varies over time and carries in intensity. Spielberger and others developed the State Trait Anxiety Inventory as a method for distinguishing between the two concepts of anxiety and for the identification of anxious and anxiety prone individuals (Spielberger and Gaudry, 1971).

The Relationship between Anxiety and
Academic Performance

Drive theory postulates that high levels of anxiety will improve the performance of individuals on simple tasks, but will have a negative influence on the same individuals attempting more complex tasks. Repeated research experiments have verified this concept. The more complex the task, the more effect high anxiety has (Tobias, 1980). On an average difficulty university-level examination, the net effect of high levels of anxiety is negative (Spielberger, 1966). No significant causal relationship has been found between intelligence and trait anxiety. There is a differential effect of high state anxiety based upon ability. Very bright students often receive a positive benefit in their academic performance from higher levels of state anxiety. Lower ability students' performance is not affected by anxiety. The middle-range or average student suffers debilitating effects on his or her academic performance while under the effects of a high state of anxiety (Allen, 1970; Spielberger and Gaudry, 1971).

A large number of authors have researched and reported the negative effects of high levels of anxiety upon academic performance (Spielberger, Waitz, and Denny, 1962; Spielberger, 1966; Spielberger and Gaudry, 1971; Denny and Rupert, 1977; Reister and Stockton, 1977; Waid et al., 1978; Deffenbacher, Mathis, and Michaels, 1979; Thompson, Griebstein, and Kuhlenschmidt, 1980; Tobias, 1980). In the mid-sixties Spielberger (1966) conducted a longitudinal study with students of comparable ability. The results showed students with higher levels of anxiety four times as likely to experience academic failure. As early as 1962, Spielberger, Waitz, and Denny were able to identify academic underachievers by means of Taylor's Manifest

Anxiety Scale. The results of this research, and the discovery of the loss of human potential due to academic failure led Spielberger to work towards the development of the STAI (1971). Using the STAI, Spielberger and Gaudry were able to investigate further the relationship between academic achievement and anxiety. They found a significant inverse relationship (1971).

Tobias (1980) also writes of underachievement and levels of anxiety. Other factors being comparable, students with higher levels of anxiety have lower grade point averages than students with less anxiety. Student experiencing high states of anxiety may suffer from impaired reading comprehension. Waid et al. (1978) recommend frequent study breaks to reduce the anxiety level and perhaps to limit the effect upon reading comprehension. Thompson, Griebstein, and Kuhlenschmidt also recommend relaxing study breaks. They found this could reduce the intensity (state), but not the proneness (trait) of students' anxiety (1980).

Significant research has been done concerning the relationship of specific or targeted anxieties, such as test, speech, and dating, to academic performance (Sarason, 1980). More recently researchers have investigated the effect of general or non-targeted anxiety (Reister, Stockton, and Maultsby, 1977). Denny and Ruppert (1977) found general anxiety to have a debilitating effect upon test performance and general academic performance. By reducing non-targeted anxieties, Deffenbacher, Mathis, and Michaels (1979) were able to show improvement in students' academic performance. Reducing anxiety not related directly to scholastic tasks can directly effect the successful completion of those tasks (Thompson, Griebstein, and Kuhlenschmidt, 1980).

Students suffering from higher levels of anxiety have a significantly lower retention rate (Spielberger and

Gaudry, 1971). This may be linked to indecision surrounding vocational choice. Mendonca and Seiss have found that high anxiety students frequently are unable to make vocational choices. Students paralyzed by indecision and aimlessness drop out of school (1976).

Recent research by Barnett and Dalton (1981) attempted to discover the causes for undergraduate academic cheating. Stress and test anxiety was the factor most commonly identified by the students surveyed. Anxieties caused by or related to activities outside the classroom can have an effect on academic performance. Arkowitz et al. (1978) found that men with severe dating anxieties were more prone towards academic failure. Anxiety is also an important influence on student behaviors in non-academic areas. Students seeking to cope with anxiety may turn to such sensation-producing activities as alcohol and drug abuse (Kilpatrick, Sutker, and Smith, 1976).

State-trait anxiety theory asserts that threats (direct or implied) to self-esteem produce more stress in high A-Trait individuals. As the stress, in the form of a real or perceived threat to self-concept, is encountered, the individual's state anxiety reactions are aroused (Spielberger and Gaudry, 1971). Many students arrive at college with the combination of high motivation to achieve and a high degree of fear of failure. This combination contributes to the many new situations and personalities encountered by the new undergraduate. Such a situation exacerbates any threatening events or perceptions. The likelihood of anxious feelings under such conditions is clear (Spielberger and Gaudry, 1971). Such anxiety leads to self-doubt, worry, and pre-occupation. In freshmen this can prevent the formulation of sound study habits and lead to academic failure (Spielberger, Weitz, and Denny, 1962).

The negative effects of anxiety upon academic performance can be ameliorated by differential treatment. Cosner, Chandler, and Spies (1980) studied the relationship between anxiety and different methods of teaching using community college students as subjects. High state anxious students were found to do better in more structured, lecture-oriented coursework. Spielberger and Gaudry (1971) suggest the need for differential treatment of highly anxious college students. Classroom environment, testing procedures, and overall learning environments can be structured to reduce anxiety in students. In 1966, Spielberger dispaired of the waste of human potential due to anxiety related academic failure. He recommended early identification of highly anxious students and differential treatment to aid in reducing anxiety.

Short of constantly measuring anxiety levels, identifying the highly anxious student is difficult. Many different personality and personal variables have been postulated to be related to anxiety. Janisse and Polys (1976) believe anxiety can be triggered both by current events and by memories of past, threatening perceptions. While counseling freshmen identified as highly anxious, Spielberger (1966) was struck by the significance of current or immediate situations or events. Students were anxious in relation to study habits, residence hall life, and vocational goals. It was clear to Spielberger that student perceptions of immediate stimuli led to anxiety reactions and were factors in student behaviors. Reducing levels of anxiety must involve student competencies involving environmental factors.

Various sociological factors have been shown to be related to anxiety. Bondy et al. (1980) have ascertained that anxiety is often in reaction to noise, overcrowding, competition, and financial worries. There is less anxiety even in a crowded environment if that environment is

friendly or family-like (Sheldon, 1980). Due to perceived cultural discontinuity, first generation college students are likely to suffer more from the effects of anxiety. Moving from a rural environment to a large university can also be anxiety-producing (Coelho, 1980). Cattell (1976) writes that higher anxiety is generally associated with students from lower economic level backgrounds.

Allen (1970) and Highten and Gillis (1978) believe anxiety and gender are not related. Hawkins, Bradley and White (1977) disagree. They write that sex is likely to be related to anxiety. Neither men nor women are more prone to anxiety according to Janisse and Palys (1976). Women suffer from more intense states of anxiety than men these researchers assert. There appears to be some relationship between the perceived and ideal selves of anxious women. In a study by Stand and Grau (1977) women with higher levels of anxiety were shown to have a greater discrepancy between their perceived and ideal selves. Students who are highly assertive are likely to be anxious, but are more likely to find the anxiety facilitating their academic performance.

Stress is greatest on undergraduates their first term and at the beginning of every other term (Downey, Robyak and Astley, 1979). Other common factors thought to be related to anxiety are age and grade point average (Hawkins, Bradley and White, 1977). Most of the relationships asserted concerning anxiety and other factors are the basis of hypotheses based on theory and related research. Little has been done in the way of direct research in this area.

Summary

Anxiety has a greater effect upon individuals attempting more difficult tasks. Academic performance is inhibited

for middle-level ability students. High state anxiety can significantly lower achievement and performance levels. General anxiety has negative effects on both in-and-out of the classroom behaviors. Current environmental stimuli may have the greatest influence in arousing anxious reactions. A number of demographic and sociological factors have been hypothesized to be related to anxiety. Among the factors are age, sex, GPA, economic status, living environment, size of home town, and choice of academic major. There is currently little hard evidence to support most of these relationships.

CHAPTER III

METHODOLOGY

Subjects

First-year undergraduates were selected for this study because: they are subject to more anxiety-producing situations arising from their interactions with a new environment; earlier identification of highly anxious students may help in the prevention of the development of anxiety-related poor study habits; and first-year undergraduates are a relatively available population to assess.

The problems freshmen encounter when making the transition from home to college have been noted by many authors (Anderson, 1969; Cohen and Ruth, 1978; Diltz, 1980; Sagaria et al., 1980; Hart and Keller, 1980; Baker and Bothdan, 1980). A major problem is the new environment and the large number of new stimuli. Averill (1976) has written that the inner conflict arising from the interaction of individuals and a new environment is a primary source of anxiety. The "backlog" of new, unassimilated data prevents the normal coping mechanisms from functioning and anxiety results (McReynolds, 1976, p. 36).

Thompson et al. (1980) have studied the effects of anxiety upon the study habits of freshmen. Anxiety can prevent the formation of solid study habits and can actually cause the development of negative study behaviors. A number of authors have recommended identifying anxious students during their first year of college in order to provide more effective differential and preventive treatment (Spielberger et al., 1962; Thompson et al., 1980; Cosner et al., 1980).

In the winter of 1982 four hundred Oregon State University freshmen were selected for this study. A computer-generated randomized list was selected from two groups of students. Two hundred students were selected from each group. The first group was composed of only residence hall students. The second group was composed of students living in fraternities, cooperative houses, and off-campus residences. Students over twenty-five and students enrolled for more than three terms were not eligible for the study.

Administration

Four hundred questionnaires were mailed directly to the subjects. Each student received an explanatory letter (see Appendix A), a copy of the State Trait Anxiety Inventory (see Appendix B), and a brief demographic questionnaire (see Appendix C) that was designed by the author. The instruments used are described below. After ten days each subject who had not responded was sent a follow-up letter (see Appendix D) and a new questionnaire.

Of the original four hundred subjects, sixty were ineligible because of their age, length of enrollment, or because they had withdrawn from school. Three hundred and forty students were eligible, and of this number two hundred and five completed questionnaires were obtained. This resulted in a return rate of 60 percent.

The Instruments

Three sources provided the data used in this research: the State Trait Anxiety Inventory (Spielberger, Gorsuch, and Lashene, 1968); a demographic questionnaire; and a university data bank. "The STAI (Spielberger,

Gorsuch, and Lushene) measures two distinct anxiety concepts: state anxiety (A-State) and trait anxiety (A-Trait)" (Spielberger and Gaudry, 1971). The A-State scale essentially measures tension, apprehension and nervousness. It measures a person's current state of anxiety. A-State is a reflection of the intensity of an individual's anxiety. A-Trait scores are a reflection of anxiety-proneness (Spielberger and Diaz-Guerrero, 1976).

The STAI consists of separate self-report scales for measuring A-State and A-Trait. The A-State scale is comprised of 20 items which require the subject to indicate how he feels at a particular moment in time. . . . The subject is required to respond to each item by rating the intensity of his feelings on a 4-point scale with the following categories: not at all; somewhat; moderately so; very much so.

The STAI A-Trait scale consists of 20 statements that ask people to describe how they generally feel. . . . The subject responds to each item by rating himself on the following 4-point scale: almost never; sometimes; often; almost always (Spielberger and Gaudry, 1971, p. 15).

"The STAI is a relatively efficient, reliable, and valid way to assess individual differences in both anxiety-proneness and phenomenological experience of anxiety in normal as well as patient populations" (Buros, 1978, p. 682). Numerous studies have shown the validity of the STAI-A scale. It is internally consistent and correlates well with other anxiety scales.

Appendix C is the demographic data questionnaire developed by the author. Data were gathered indicating the student's Greek affiliation or non-affiliation. Students were asked to classify their home community as rural or non-rural. Whether or not the respondents' parents attended college and whether the student was feeling financial concerns were also determined.

The Oregon State University Registrar's Office provided a computer program which gave further data about each individual. From the computer program GPA, sex, place of campus residence, academic major and credits were obtained for each student.

Analysis of Data

The dependent variable for all tests was the anxiety score from the A-State form of the STAI. This score is a continuous variable with values ranging from 20 to 80. For hypotheses 1, 4, 5, and 7 a t test was used to measure for significance. An analysis of variance was used to test for significance with hypotheses 2, 3, 6, and 8. A significance level of .05 was used to determine significant statistical difference between means.

The two continuous variables of age and academic credits were tested using a regression equation. The research question was addressed using two statistical techniques. First a stepwise multiple regression equation was used to determine what factor or factors combined, in what order, to account for the greatest degree of variance. Then an interactive stepwise multiple regression equation was used to test for interaction among the factors.

CHAPTER IV

RESULTS

The purpose of this study was twofold: to test hypotheses concerning the relationships of various demographic data with anxiety (as measured by the A Form of the STAI) and to form a predictive profile or description of the highly anxious freshman. This chapter will present the results relative to these two questions, and also some additional findings. The results will be presented in the order that the original hypotheses were tested, followed by the results of the analysis of the research question and the additional findings.

Presentation of the Results

Hypothesis 1. There will be no significant difference in the degree of anxiety of men and women.

Table 1 on page 38 presents the data resulting from the statistical analysis used to test Hypothesis 1. A two-by-two analysis of variance was used to test the independent variable of sex with the dependent variable anxiety. No significant degree of difference was found within this population. Hypothesis 1 was retained.

Hypothesis 2. There will be no significant difference in the degree of anxiety between women who belong to sororities and women who do not.

Table 1 on page 38 presents the data resulting from the statistical analysis used to test Hypothesis 2. A two-by-two analysis of variance was used to test the independent variable of sorority membership with the dependent

variable anxiety. No significant degree of difference was found within this population . Hypothesis 2 was retained.

Hypothesis 3. There will be no significant difference in the degree of anxiety of men who belong to fraternities and men who do not.

Table 1 on page 38 presents the data resulting from the statistical analysis used to test for difference in Hypothesis 3. A two-by-two analysis of variance was used to test the independent variable of fraternity affiliation with the dependent variable anxiety. No significant degree of difference was found within this population. Hypothesis 3 was retained.

Hypothesis 4. There will be no significant difference in the degree of anxiety of rural and non-rural students.

Table 1 on page 38 presents the data resulting from the statistical analysis used to test for difference in Hypothesis 4. A T-Test was used to test the independent variable of rural or non-rural background with the dependent variable anxiety. No significant degree of difference was found within this population. Hypothesis 4 was retained.

Hypothesis 5. There will be no significant difference in the degree of anxiety of students living in residence halls and students not living in residence halls.

Table 1 on page 38 presents the data resulting from the statistical analysis of Hypotheses 5. A T-Test was used to test the independent variable of place of campus residence with the dependent variable anxiety. Students living in cooperative houses, fraternities, and off-campus were categorized as one group. No significant degree of difference was found within this population. Hypothesis 5

was retained.

Hypothesis 6. There will be no significant difference in the degree of anxiety of students having different previous college levels of academic success.

Table 1 on page 38 presents the data resulting from the statistical analysis of Hypothesis 6. A one-way analysis of variance was used to test the independent variable of previous college academic success with the dependent variable anxiety. Students were categorized into three groups for the purposes of analysis: (1) those with GPA's of under 2.0; (2) those with GPA's between 2.00 and 2.99; and (3) those with GPA's of 3.0 and above. No significant degree of difference was found within this population. Hypothesis 6 was retained.

Hypothesis 7. There will be no significant difference in the degree of anxiety of students who are first-generation college students and other students.

Table 1 on page 38 presents the data resulting from the statistical analysis of Hypothesis 7. A T-Test was used to test the independent variable of parental education with the dependent variable anxiety. Students were divided into two groups. In one group were students, the parents of whom had not attended any college beyond high school. If either parent attended any college courses, the students were placed in a second group. No significant degree of difference was found within this population. Hypothesis 7 was retained.

Hypothesis 8. There will be no significant difference in the degree of anxiety of students enrolled in different academic schools.

Table 1 on page 38 presents the data resulting from

the statistical analysis of Hypothesis 8. A one-way analysis of variance was used to test the independent variable of academic school with the dependent variable of anxiety. From a computer listing of academic majors, students were classified into eight schools and the category of undeclared. Students in forestry and home economics were removed from the analysis because they were too few in number for valid analysis, and there was no logical reason to combine them with other schools. No significant degree of difference was found within this population. Hypothesis 8 was retained.

Hypothesis 9. There will be no significant difference in the degree of anxiety of students experiencing concerns about financial problems and students not experiencing such concerns.

Table 1 on page 38 presents the data resulting from the statistical analysis of Hypothesis 9. A T-Test was used to test the independent variable of financial concern with the dependent variable anxiety. Students were divided into two groups. Those students who were "Very Sure" or "Fairly Sure" about their financial future were grouped together. Those students who were "Somewhat Unsure" or "Very Unsure" were also grouped together. A significant degree of difference was found within this population. Hypothesis 9 was rejected.

TABLE 1. Significance of the Variance in Anxiety Scores as Affected by Sex, Greek Affiliation, Size of Hometown, Place of Campus Residence, GPA, Parents' Education, Academic School, and Financial Concern.

Source	Date Type	Groups	N	Mean Score	p Value
Sex	Categorical	Female	87	39.20	.501
		Male	118	41.13	
Sorority Membership	Categorical	Member	19	40.21	.517
		Non-Member	68	38.91	
Fraternity Membership	Categorical	Member	43	40.40	.517
		Non-Member	75	41.55	
Size of Hometown	Categorical	Rural	37	39.1892	.535
		Non-Rural	168	40.5536	
Campus Residence	Categorical	On-Campus	124	40.9194	.365
		Off-Campus	81	39.3704	
College GPA	Categorical	Below 2.0	38	42.05	.591
		Between 2.0 and 2.99	102	40.01	
		3.0 and Above	65	39.75	
Parental Education	Categorical	College	156	40.3397	.948
		Non-College	49	40.2041	
Academic School	Categorical	Liberal Arts	30	42.10	.463
		Science	43	40.65	
		Agriculture	14	36.00	
		Business	42	42.36	
		Education	12	37.67	
		Engineering	41	40.95	
Financial Concern	Categorical	No Declared Major	15	37.20	.006
		Concern	82	43.0610	
		Non-Concern	123	38.4715	

In this study one research question was also examined.

Is there a combination of factors which can predict a high level of state anxiety for the first year undergraduate?

Table 2 presents the data resulting from the analysis of the research question. A stepwise multiple regression was utilized to analyze the degree of variance in the dependent anxiety score based on the independent variables of financial concern, place of campus residence, sex, GPA, size of hometown, age, Greek affiliation, number of credits, and parents' level of education. Academic School was left out of the regression equation. The number of levels of this variable would have rendered the results meaningless. Only the variable concerning financial problems had a coefficient significantly greater than 0. The variance accounted for by financial concern was three percent. Including all of the independent variables in a stepwise manner accounted for a total of six percent of the variance. The data gathered from this population are not such that a predictive profile can be drawn.

TABLE 2. Results of a Stepwise Multiple Regression Accounting for the Degree of Variance in Anxiety Based on Financial Concern, Campus Residence, Sex, GPA, Size of Hometown, Age, Greek Affiliation, Number of Credits, and Parental Education.

Variable	Significance	R Square
Financial Concern	.006	.03720
Campus Residence	.250	.04350
Sex	.192	.05158
GPA	.255	.05773
Size of Hometown	.540	.05951
Age	.549	.06122
Greek Affiliation	.595	.06256
Credits	.612	.06379
Parental Education	.747	.06429

Table 3 presents the data resulting from the analysis of the research question using an interactive stepwise multiple regression. The same dependent variable, anxiety, was tested with the same independent variables. Academic School was left out of the regression equation. The number of levels of this variable would have rendered the results meaningless. Each independent variable was tested for interaction with financial concern, the one variable showing significance. Sex interacting with financial concern had a coefficient of variance significantly greater than 0. Women indicating they have financial concerns are more likely to be anxious, according to the data generated from this sample population. By this variable, just under six percent of the variance was accounted for. There is no predictive profile of the highly anxious freshman than can be based upon these data.

TABLE 3. Results of an Interactive Stepwise Multiple Regression Combining Degree of Financial Concern with Six Other Independent Variables to Account for the Variance in Anxiety Scores Among First-Year Undergraduates.

Variable	Significance	R Square
Sex	.000	.05829
Campus Residence	.296	.06338
Size of Hometown	.393	.06677
GPA	.527	.06865
Age	.099	.08135
Greek Affiliation	.944	.08407

Additional Findings

Additional results concerning campus residence were revealed by the statistical analyses. These results are summarized in Table 4. A T-Test was used to determine the degree of variance in anxiety scores of freshmen living in

co-ed and single-sex residence halls. There was no significant degree of difference within this sample population. A T-Test was also used to determine the degree of variance in anxiety scores of freshmen living in all-freshmen residence halls and freshmen living in halls with a mix of classes. There was no significant degree of difference within this sample population.

Type of Hall	N	Mean	p Value
Co-ed	71	40.9155	.997
Single-sex	53	40.9245	
All-Freshmen	45	40.9111	.995
Mixed Classes	79	40.9241	

Table 5 illustrates the data resulting from a regression equation used to test the independent variable of academic credits with the dependent variable anxiety. There was no significant degree of difference within this sample population. Table 5 also illustrates the data resulting from a regression equation used to test the independent variable age with the dependent variable anxiety. There was no significant degree of difference within this sample population.

Source	Mean	Significance	R Square
Credits	15.7	.983	.0000
Age	18.48	.552	.00174

In an attempt to further investigate the relationship between high state anxiety and academic performance an additional statistic was computed. Subject GPA's were combined, as a continuous variable, with the one variable found to be significantly related to anxiety, financial concern. While not significant at the .05 level, the results seem to correlate strongly with theory. Degree of financial concern was found to be related to student GPA at the .18 level. This does suggest that students experiencing anxiety related to financial concern are likely to perform less well academically.

Anxiety, as measured by the STAI, was present in the sample population. A frequency chart representing all of the STAI scores for this population can be found in Appendix F.

Summary of Results

The analysis of data performed to test the research hypothesis provides promising data. Men and women were found to have no significant degrees of difference in their levels of state anxiety. Sex was found to be a factor only when tested as an interactive variable with financial concern. Females who are more concerned about financial problems are significantly more likely to have higher levels of anxiety.

Greek affiliation was found to have no effect upon the level of state anxiety. Men belonging to fraternities and women belonging to sororities were not significantly different in their anxiety scores than other first-year undergraduates.

Students identifying themselves as coming from rural backgrounds were not found to have significantly higher levels of anxiety than non-rural students. Parental level of education was also not a factor found to influence anxiety. There was no significant degree of difference in the anxiety levels of students whose parents attended college and other students whose parents did not attend college.

Place of campus residence was found to have no effect on levels of anxiety. There was no significant difference between students who lived in residence halls and students who lived in fraternities, cooperatives, and off-campus.

Prior college academic success, as measured by the student's grade point average, was found not to be a significant variable. Students experiencing below average, average, and above average success did not significantly differ in their levels of anxiety. There was no significant degree of difference in anxiety levels across

academic majors when grouped by school.

The one variable significantly related to anxiety in this study was financial concern. Students expressing doubt about their continued ability to finance their college educations were found to have significantly higher levels of anxiety.

A research question was also posed by this study. A stepwise multiple regression equation was used in an attempt to form a predictive profile of the highly anxious first-year undergraduate student. Financial concern was found to be a significant factor, but accounted for just under four percent of the variance. In an interactive multiple regression equation other factors were combined in turn with financial concern. Sex was found to be significant when interacting with financial concern. Females concerned about financial problems are significantly more likely to have higher levels of anxiety. This accounts for slightly less than six percent of the variance. These results lead to the assertion that there can be no predictive profile based on these data.

Additional results concerning the type of residence hall were also described. There was no significant degree of difference in the anxiety levels of students living in co-ed residence halls and students living in single-sex residence halls. There was also no significant degree of difference in the levels of anxiety of students living in all-freshmen residence halls and students living in halls of mixed classes.

Students' degrees of anxiety did not differ significantly based upon age. The number of academic credits attempted per term was not found to significantly affect the anxiety level of those students surveyed for this study.

CHAPTER V

SUMMARY, DISCUSSION, CONCLUSIONS AND
SUGGESTIONS FOR FURTHER INQUIRY

Summary

Recognizing anxiety as a potentially debilitating factor in academic performance, the author's major objective for this study was to form a predictive profile of the highly anxious first-year undergraduate. Specifically, statistical analysis was used to determine which combination of the variables measured combined to account for the highest percentage of variance in the degree of anxiety experienced by freshmen. The individual factors of sex, Greek affiliation, place of campus residence, size of hometown, parental level of education, academic school, grade point average and degree of financial concern were individually tested for correlation with high state of anxiety.

Anxiety is a pervasive personality construct. To some theorists it is the thread that runs through and ties together all human emotions and behaviors. Whatever its cause, anxiety is a significant factor in the emotional and behavioral makeup of human beings.

The State-trait theory of anxiety, proposed by Cattell and Schierer (1960) and popularized by Spielberger (1966), asserts that each individual has a certain level of proneness to anxiety (trait). The more prone a person is to be anxious, the more often that person perceives threats in the external world. The degree of internal reaction to the threat perceived or actual is state anxiety.

Anxiety can be a positive, adaptive mechanism enabling the individual to more effectively cope with a complex and

evolving environment. Anxiety can also be a paralyzing, neurotic tendency to over-react to even the least harmful of stimuli. It is both a coping function and an emotional reaction that must be coped with for the maintenance of emotional health.

High states of anxiety have been shown to have negative effects on academic performance. Lower retention rates, drug abuse, and academic failure have all been linked with maladaptive levels of anxiety. A number of environmental factors have been theoretically proposed to stimulate anxiety. Early identification of and differential treatment for the potentially highly anxious has been offered as a method for helping alleviate the negative impact of high levels of anxiety on student performance and development.

The state form of the State Trait Anxiety Inventory was used as the primary measure for this study. The STAI-A form is a twenty-item questionnaire which provides a valid measure of an individual's current state or degree of anxiety. Demographic data were gathered from the university computer data bank. Questions concerning the individual's hometown, parents' level of education, Greek affiliation, and degree of financial concern were on a separate questionnaire.

Four hundred freshmen were selected by a computer-generated random sampling technique. Two hundred were chosen from on-campus and two hundred from off-campus. Three hundred and forty of the original four hundred were eligible for the study. Students older than twenty-five and students enrolled in college for more than three terms were eliminated. Two hundred and five usable questionnaires were returned, for a response rate of 60 percent.

The individual independent variables were tested with the dependent variable anxiety using an ANOVA or T-Test, depending on the data type. The predictive combinations were tested using both a stepwise multiple regression and an interactive stepwise multiple regression.

DISCUSSION

The individual factors used as independent variables in this study were drawn from the relevant scholarly research. Theorists have looked to external, environmental stimuli as stressors causing or exacerbating high states of anxiety. The interaction of the individual's perception of the external world and his or her self-concept results in greater or lesser amounts of anxiety. Spielberger (1966), while counseling freshmen identified as highly anxious, found them to be concerned with current, environmental factors such as study habits, residence hall life, and vocational choice. Other variables were hypothesized to have a significant relationship with anxiety as a result of theories based on sociological, anthropological, and psychological studies. This study tested the validity of the purported relationships and, while the results were generally not significant statistically, they were of interest to the researcher and suggested the need for further research into the causality of anxiety.

The independent variable of financial concern was the only factor shown to have a significant relationship with anxiety. Students expressing a concern about their financial ability to complete college scored significantly higher ($p < .01$) on the STAI state scale. Given the state of Oregon's, and America's, economic condition in 1982, this result is not surprising and agrees with the research of Cattell (1976) and Bondy et al. (1980). Recent and proposed cutbacks in federal aid to higher education pose a very real threat to many student's future plans. The economic situation is a currently extraordinary stimulus which is clearly an important factor in the degree of state anxiety felt by many undergraduates.

No significant difference was found between the anxiety levels of rural and nonrural students. The

anthropological hypothesis asserts that because of "cultural discontinuity" rural students will suffer from anxiety to a greater degree (Coehlo, 1980). Corvallis and Oregon State University itself may be the reasons this assertion was rejected. Corvallis is a medium-sized, non-industrial city. OSU is the engineering and agricultural school for the state. It is the school of choice of the predominantly rural populations. It is perhaps perceived as less threatening or anxiety-producing than a more urban or "liberal" university. The very presence of many trees and open plots of ground may have an anxiety-reducing effect for rural students.

Coehlo (1980) also believes that students who are the first generation of their families to attend college will feel more anxious. The results of this study contradict this also. There was no significant difference in the anxiety levels of students whose parents attended college and students whose parents did not. Again, the nature of OSU may be a mitigating factor. This is not an elite school by nature or function. The overall homogeneity of the student body discourages negative experiences based on relatively small individual differences.

Sex was not found to be a significant factor affecting the degree of anxiety experienced by the students in this study. This was not an unexpected result. Though some researchers such as Highten and Gillis (1978) disagree, the general weight of opinion does not assert that sex is a significant factor in the propensity towards high states of anxiety (Hawkins, Bradley and White, 1977).

Subjects in this study were divided into three categories according to their previous college grade point averages. There was no significant degree of difference in anxiety scores between the groups. Theory would indicate that students who had previously done less well academically would respond with higher levels of anxiety

(Tobias, 1980). This was not evident in this population. College grades may not be significant or real enough for most freshmen, and thus may have little impact on their emotions or behaviors. At the beginning of the college experience, the relationship between grades and the future may not be direct enough to be perceived as a threat if grades are low. Many freshmen, correctly, view their first term as a period of adjustment. This often helps them downplay poorer early academic performance.

Greek affiliation, for either gender, was not found to be significantly related to state anxiety. The additional pressures placed on undergraduates belonging to Greek organizations may be offset by the increased peer-support network and increased sense of belonging.

It was hypothesized that a student's choice of academic school would be correlated with anxiety levels. This was not true for this population. There was no significant variation in anxiety scores across majors which contradicted the theories of several authors, including Mendonca and Seiss (1976). There are several plausible explanations. Students unable or unwilling to declare a major as freshmen could be predicted to have higher levels of anxiety. At OSU such students are classified as Undergraduate Exploratory Studies Program participants. The validity and appropriateness of their indecision is affirmed. These students are assigned counselors and may learn to cope adequately with the anxiety of not having a major. The relative competitiveness of various majors is purported to be related to anxiety. The findings of this study suggest that either this is false or the schools at OSU may be relatively equal in their degree of competition. Another possible explanation is that students may accurately self-select. There may indeed

be more stress related to a particular major--if a student has no particular aptitude for that field of study. If the student is interested and able, the stress may actually improve performance.

The results of this study indicated no significant degree of difference in anxiety levels between students who live in residence halls and other students. There are apparently several factors at work here. Residence hall students live in larger, relatively noisier, and less family-like environments purported by Bondy et al. (1980) to be related to anxiety. At the same time, they have ready access to professional and paraprofessional staff. Though not family-like, a key to reducing anxiety according to Sheldon, residence halls provide a seemingly homogeneous population at OSU (1980). Students are surrounded by many others in like situations. Students living outside of the residence hall system do not have the advantage of close supervision by trained staff. In fraternities they do have a "big brother" to help with the initial transition to college. Off-campus freshmen must either live at home or be out of high school for one year or be over twenty-one. It is clear that there are differences in the experiences of residence hall students and non-residence hall students. Either these experiences offset one another or they are not factors which produce significant differences in individual levels of anxiety.

In addition to the hypothesized individual relationships several additional variables were tested. There were no significant differences in the levels of anxiety experienced by students living in the different types of residence halls (co-ed and single sex, all freshmen and mixed classes). This may be due to the similarity in staffing and programming between halls. Also, because of

the high number of in-state students and the high visibility of OSU, students have a reasonably accurate perception of the individual residence halls. Most students are able to live in the hall of their choice. This may influence satisfaction with the environment, which may, in turn, affect anxiety.

Age was not found to be significantly related to anxiety level. Students ranged in age from seventeen to twenty-two, with eighteen and one-half being the mean. Because of the small range and the similarity of the educational environment, it is not surprising that age did not affect anxiety scores.

Academic credits, as a measure of the student's academic responsibilities, was also tested for a correlation with anxiety. No significance was discovered.

A model was developed to use a stepwise multiple regression in forming a predictive profile of the highly anxious freshman. The data would not support such a model. Only financial concern was found to be significant, and it accounted for only just under four percent of the variance, combining all of the factors in the equation still allowed for the explanation of just under six percent of the variation in scores. By using an interactive equation (each separate variable was combined with financial concern), over eight percent of the variance could be explained. This second equation indicated that women expressing concerns about financial problems were significantly more anxious. Still there were not enough significant data to predict which students were most likely to be anxious.

CONCLUSIONS

The instrument used in this study is a valid, reliable measure. The STAI-A scale does measure state anxiety levels accurately. Self-reported perceptions of anxiety are the best way to determine degrees of anxiety. The sample population surveyed is random and relatively representative of the first-year students on this campus. The model used to test for predictiveness (a stepwise multiple regression) is recommended for this type of research (Levitt, 1980). Why then could no predictive profile be described?

The process of elimination leads to the conclusion that the independent variables tested in this study did not provide data suitable for the purposes attempted. The variables chosen, sex, Greek affiliation, size of hometown, parental education, place of campus residence, academic school, college grade point average, financial concerns, academic load, and age were all indicated in the scholarly literature. The thrust of current research and theory indicates that environmental factors impinge upon the individual and anxiety can be the result. Anxiety can be the individual's mode of coping with stressful situations. Why then do certain individuals faced with the same situations cope in most or less competent fashions? How can professionals predict the highly anxious? On the basis of this study, demographic data and environmental factors would appear to be poor predictors. The hypothesized relationships are for the most part theory. They follow the reasoning that if external or environmental factors stimulate anxiety they may be causal or predictive. Again, this study does not bear this out.

It seems valid that the environment and background of an individual influence his or her level of anxiety. The mediating factor may be how that individual perceives the environment. Rollo May (1950) provided a possible answer. Perceptions of the external world are anxiety-producing when they threaten a value which is central to the core of the individual's personality. What May was referring to is today termed, self-concept. Freud (1935) suggested that the perception of the external was altered by the internal struggle. Without examining the individual's self-concept, it may be impossible to identify the sources of general anxiety.

The results of this study only allow for the accounting of less than 10% of the causes of anxiety. Where to look for the other 90-plus percent is the question. In addition to May's theory concerning self-concept, other authors have hypothesized relationships between various personality constructs and anxiety.

Costello (1976) believes that the mismatch between an individual and his or her environment causes anxiety. The rapidity of change in the environment is postulated to have a causal relationship with anxiety by McReynolds (1976).

Spielberger (1972) wrote that fear of failure may influence an individual's level of anxiety. This is compounded when combined with a high motivation to achieve (Spielberger and Gaudry, 1971). This effect may be exacerbated by an individual's level of self-doubt (Gilbert, 1976). As an individual faces self-doubt or new situations, a sense of the loss of control may emerge.

Sarason (1980) believes this to be linked to anxiety. In order to predict the highly anxious student it is clear an individual's personality will have to be evaluated. How the individual perceives his or her own inner core will affect the perception of the environment. The

combination of internal processes and external perceptions determine the level of anxiety experienced.

When Spielberger's (1966) students talked about residence hall life, studies, and vocational choice as sources of anxiety, they were not being deliberately misleading. They were coping with those factors related to anxiety which they could consciously identify. It appears to this author that students who have an accurate, positive self-concept are less likely to perceive college life as threatening. Those who do perceive threat are unlikely to be able to accurately identify the source of the threat. Individuals tend to externalize sources of tension.

Anxiety is real. It is an influence on behaviors. The influence can be adaptive or maladaptive. High levels of anxiety can be very harmful to academic achievement. For the majority of individuals anxiety can serve as an adaptive mechanism for learning new competencies for dealing with a changing environment. Maladaptive anxiety appears to be a learned response. It makes sense to teach students how to cope in a competent manner rather than focusing on their anxieties. Identifying the highly anxious must involve identifying those students with weak or inaccurate self-concepts. Developmental counseling and education can teach such students about themselves and how to interact more effectively with the environment. This would alleviate much of the debilitating aspects of anxiety.

Suggestions for Further Inquiry

The following suggestions arise from the implications and conclusions of this study.

1. An attempt can be made to form a predictive profile of the highly anxious first-year undergraduate using demographic data and self-concept.
2. A new methodology could be developed to measure the correlation of individual self-concept and anxiety levels.
3. Statistical analysis can be used to study the relationship of the STAI-A scale and various measures of self-concept.
4. Measurements can be made to determine if developmental counseling directed at more effective environmental coping can reduce dysfunctional levels of anxiety.
5. Testing students for anxiety levels as freshmen and following their progress throughout their academic careers would provide important data about retention rates, stability of major choice, and relative academic success and progress.
6. Measurable, practical skills such as time-management and problem-solving can be tested for correlation with anxiety.
7. An attempt could be made to correlate anxiety scores with measures of student ability such as the Scholastic Aptitude Test.
8. Replications of this study could be performed to test the reliability of the findings. Of particular benefit would be replications on different types of campuses, specifically urban universities and liberal arts institutions.

9. An individual's sense of personal control or effectiveness may be found to be related to anxiety.
10. Need Theory offers the possibility of testing a student's need for achievement with anxiety level.

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APPENDICES

APPENDIX A

Office of
Student Services



Corvallis, Oregon 97331 (503) 754-3661

January 30, 1982

Dear O.S.U. Freshman:

Your help and cooperation are needed. In order to provide you with better services, the university needs information about you and other students. Your participation is important because you are one of a small number of students selected to take part in this survey.

A short Self-Evaluation Questionnaire is enclosed. Please fill out both forms completely. Do not include your name. Each questionnaire is numbered to provide a way by which reminders may be sent. Your responses will be held in confidence and no individual scores will be reported. If you are 26 years or older, or have been in college for more than three terms, do not complete the survey; however, please return the questionnaire unanswered.

In order to insure the success of this study, please return both questionnaires in the enclosed campus envelope by February 7. Campus mail boxes are located in every classroom building and in the Memorial Union. The forms are to be returned, as you can see, to the O.S.U. Survey Research Center, which is assisting in the coordination of the mailing.

Your cooperation is very much appreciated. This study is being conducted under the supervision of Dr. Jo Anne Trow, Associate Dean of Students. If you have any questions, please contact me or Dean Trow.

Thank you.

✓
Blair Jerome
Doctoral Candidate

BJ/dlr

Encl.

APPENDIX B

SELF-EVALUATION QUESTIONNAIRE

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

STAI FORM X-1

NAME _____ DATE _____

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



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577 College Avenue, Palo Alto, California 94306

APPENDIX C

Your scores on the Self-Evaluation Questionnaire will be grouped with the scores of other students, and will be analyzed by category. Please answer the following questions to help in the categorization of your scores.

- (1) Before you came to Oregon State University, in which type of community did you live? (Circle one)

- | | |
|-----------------------------|--------------------------|
| 1. A large city | 4. A small city or town |
| 2. A suburb of a large city | 5. A rural area |
| 3. A medium-size city | 6. Other (Specify _____) |

- (1a) Was this last place of residence in the United States or in a foreign country? (Circle one)

- | | |
|------------------|------------------------------------|
| 1. United States | 2. Foreign country (Specify _____) |
|------------------|------------------------------------|

- (2) Did either your mother or father happen to attend college-level classes? (Circle one number for each parent)

	<u>Attended College</u>	
	<u>Yes</u>	<u>No</u>
Father	1	2
Mother	1	2

- (3) Are you currently a member (or pledge) of a fraternity or sorority? (Circle one number)

- | |
|--------|
| 1. Yes |
| 2. No |

- (4) There are many ways a college student may finance his or her education. Please indicate whether or not you are relying on each of the sources listed below. (Circle one number for each source)

<u>Source</u>	<u>Yes</u>	<u>No</u>
a. Parents	1	2
b. Scholarship/grant	1	2
c. Student loans	1	2
d. Personal savings or income	1	2
e. Other (Specify _____)		

- (5) How sure are you that you will be able to finance all the college education you want? ARE YOU

- | |
|------------------|
| 1. Very sure |
| 2. Fairly sure |
| 3. Somewhat sure |
| 4. Very unsure |

(Thank you)

APPENDIX D

Office of
Student Services



Corvallis, Oregon 97331 (503) 754-3661

February 9, 1982

Dear O.S.U. Freshman:

We still need your help very much. Because you were selected as part of the original group, only your questionnaire responses are valid. Many students have already returned their completed questionnaires, but the data cannot be compiled and used until more students respond. As you can understand your cooperation is important and we are waiting for you. Please fill out the forms and mail them today.

A short Self-Evaluation Questionnaire is enclosed. Please fill out both forms completely. Do not include your name. Each questionnaire is numbered to provide a way by which reminders may be sent. Your responses will be held in confidence and no individual scores will be reported. If you are 26 years or older, or have been in college for more than three terms, do not complete the survey; however, please return the questionnaire unanswered.

In order to insure the success of this study, please return both questionnaires as soon as possible. Return the forms in the enclosed pre-paid envelopes through the U.S. Mail.

Your cooperation is very much appreciated. This study is being conducted under the supervision of Dr. Jo Anne Trow, Associate Dean of Students. If you have any questions, please contact either me or Dean Trow.

Thank You.

Blair Jerome
Doctoral Candidate

APPENDIX E

A comparison of Means, from the STAI Manual (Spielberger, Gorsuch, and Lashene, 1968), for High School Students, College Freshmen, and College Undergraduates with the STAI State Scores of Oregon State University Freshmen Surveyed for This Study

	Male	Female
High School	36.99	37.57
Freshmen	40.01	39.39
Undergraduates	36.35	35.12
OSU Freshmen	41.13	39.20

APPENDIX F

Scores of OSU Freshmen on the STAI State Scale Listed
by Scoring Interval. Maximum Possible Score = 80;
Minimum Possible Score = 20

Scoring Interval	Absolute Frequency	Relative Frequency	Cumulative Frequency (%)
20 - 30	46	22.4	22.4
31 - 40	71	34.7	57.1
41 - 50	49	23.9	81.0
51 - 60	27	13.1	94.1
61 - 70	9	4.4	98.5
71 - 80	3	1.5	100.0