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THE EFFECTS OF IMAGERY INDUCED ANXIETY ON COMMUNICATION
APPREHENSIVE PERSONS: A TRAIT ANXIETY CONSTRUCT
VALIDATION PARADIGM

The University of Oklahoma

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THE UNIVERSITY OF OKLAHOMA
GRADUATE COLLEGE

THE EFFECTS OF IMAGERY INDUCED ANXIETY ON COMMUNICATION
APPREHENSIVE PERSONS: A TRAIT ANXIETY
CONSTRUCT VALIDATION PARADIGM

A DISSERTATION
SUBMITTED TO THE GRADUATE FACULTY
in partial fulfillment of the requirements for the
degree of
DOCTOR OF PHILOSOPHY

BY
JOSEPH C. POINTER
Norman, Oklahoma
1980

THE EFFECTS OF IMAGERY INDUCED ANXIETY ON COMMUNICATION

APPREHENSIVE PERSONS: A TRAIT ANXIETY

CONSTRUCT VALIDATION PARADIGM

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THE EFFECTS OF IMAGERY INDUCED ANXIETY ON COMMUNICATION

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JOSEPH C. POINTER

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Running Head: Trait Anxiety Construct Validation Paradigm

ABSTRACT

The cross situational consistency and the predictive utility of communication apprehension (CA) has been questioned. The purpose of the study was to validate the concept of communication apprehension as a trait. Twenty-eight students were selected and assigned to two groups (high CA, normal CA) based on their scores on the Personal Report of Communication Apprehension. They were asked to imagine different oral communication situations and rate the amount of anxiety perceived on the State Trait Anxiety Inventory. Two hypotheses were tested based on Spielberger's conceptualization of state-trait anxiety: a difference should be found between the frequency and intensity of anxiety between groups. Neither hypothesis was supported; it was concluded that CA could not be conceptualized best as a trait.

THE EFFECTS OF IMAGERY INDUCED ANXIETY ON COMMUNICATION

APPREHENSIVE PERSONS: A TRAIT ANXIETY

CONSTRUCT VALIDATION PARADIGM

Anxiety, as a psychological trait, has been under investigation for the last fifty years. The initial research was generated by trait psychologists who hoped to identify the factors which influenced "anxious" people (Lamb, 1976). Traits have traditionally meant to represent an aspect of the way a person selects, interprets, and treats information as a basis for coherent behavior across situations.

The question of behavioral consistency arises as one of the main criticisms of the trait model of personality. Mischel (1968) contended that a $+0.30$ correlation appears to be the ceiling for measures of consistency across situations and criticized the predictive utility of a trait based approach to personality assessment. Epstein (1977) has responded to this controversy and argued that over increased time periods higher reliability coefficients than $+0.30$ could be demonstrated and cited errors in measurement as a result of a few observations.

Endler and Magnusson's (1977) conception of personality stresses the interaction between the person mediating variables, the person reaction variables, and the situational factors to describe and explain how an individual develops and maintains behavior. They argue that the percentage of variance accounted for by each variable will add more to the assessment of personality than the contributions of each alone.

Spielberger (1966) recognized early the diversity in anxiety research and formulated a two-factor conceptualization. He proposed that state anxiety (A-state) is a situationally determined response to a threat,

while trait anxiety (A-trait) refers to the relatively stable individual differences in anxiety proneness. To measure the two constructs, Spielberger, Gorsch, and Lushene (1968) developed the State-Trait Anxiety Inventory (STAI).

Houston, Olson, and Botkin (1972) experimentally validated Spielberger's assertion that there is a distinction between anxiety as a transitory state (state anxiety) and as a stable personality trait (trait anxiety). They concluded that persons high in trait anxiety are more prone to elevations in state anxiety during stressful situations. Spielberger asserted that individuals high in A-trait will tend to exhibit A-state elevations more frequently and with more intensity than persons low in A-trait.

One form of anxiety that has been of considerable interest to researchers (Lamb, 1972) is speech anxiety. The original concept was limited to the anxiety experienced while speaking before a group of people. McCroskey (1970) extended the concept to include the anxiety experienced in interpersonal situations. He termed this construct "communication apprehension" (CA) and described it as a "broad based personality characteristic that has major impact on an individual's communication behavior." McCroskey (1970) developed the Personal Report of Communication Apprehension (PRCA) to help validate the construct. CA was defined as an "individual's level of anxiety associated with either real or anticipated oral communication with another person or persons." McCroskey (1978) states emphatically that CA is a psychological trait and has presented a rationale for his belief.

However, Beatty, Behnke, and McCallum (1974) investigated the trait conceptualization of CA. Their results did not support the trait conceptualization; they stated that the PRCA was sensitive to state fluctuations. In addition, Hewes and Haight (1979) measured communication behavior across several situations. They argued that cross-situational consistency is important in establishing the degree of predictive utility of an individual trait. By using a correlational approach to analyze the data, they concluded that the results did not support the cross situational consistency of communication behavior. Hewes and Haight state that their results provide an indictment of personality traits such as communication apprehension.

There appears to be conflicting evidence as to whether or not CA can best be conceptualized as a trait. The purpose of this study is to subject the concept of CA to a trait validation paradigm based on Spielberger's conceptualization of trait anxiety. As operationalized using three imaginary scenes two hypotheses will be investigated: 1. persons who are high in CA will experience more frequent feelings of anxiety, and 2. persons high in CA will experience more intense feelings of anxiety than normal CA persons.

Method

Subjects

Twenty-eight subjects from introductory education courses at the University of Oklahoma were selected on the basis of PRCA scores. Those scoring 86 or above (N=14) were assigned to the HCA group, while those scoring from 65 to 74 (N=14) were assigned to the NCA group (see Appendix A, page 31). Ages ranged from 19 to 30 with a median age of 19 years.

Twenty-five females and three males were included. Although the sample was overloaded with females, none of the surveyed research discussed the differential effect of sex differences and CA. All subjects were sophomores or juniors at the University of Oklahoma.

Each subject was contacted by phone to determine their willingness to participate for a payment of \$10. Subjects were assigned to two groups, a High CA (HCA) and a Normal CA (NCA) group. All subjects were tested in small groups for the experimental portion of the study. Necessity involved varying group size; all but three groups involved three or four students.

Instruments

Two psychometric instruments were used. The Personal Report of Communication Apprehension (PRCA, McCroskey, 1970) was used to select and place students into the appropriate groups. This instrument was chosen because of its wide use and acceptance as a measure of CA (Parks, Ray, Sherie, Poulsen, Ng, & Milkovich, Note 1). The reliability estimates have ranged from .82 to .96 over several administrations (McCroskey, 1970). McCroskey concluded that the PRCA was a valid instrument to assess CA; a series of predictions were carried out which generally confirm the predictions of the instrument (McCroskey, 1978).

The dependent measure, the State Trait Anxiety Inventory (STAI), A-State Portion (Spielberger, Gorsch, & Lushene, 1968) is a 20 item questionnaire designed to assess the anxiety a person feels "right now". Validation (See Appendix A, page 29) was conducted by demonstrating high inter-item reliability, and by demonstrating that the STAI measures differential anxiety under different stress conditions. Low test-retest

reliabilities were predicted due to the nature of states and this prediction was demonstrated. Of the many anxiety measures, the STAI has been widely used by researchers and is generally regarded as valid and useful (Buros, 1978).

Procedure

Four treatment conditions were used (see Appendix A, page 32). Treatment A involved 3½ minutes of relaxation imagery. Treatments B (imagining a speech before peers), C (imagining a one-to-one communication situation), and D (imagining a small group communication situation) were also presented for 3½ minutes. Between treatments B, C, and D, 2 minutes of relaxation imagery was presented. The scenes were presented in a counter balanced order to control for the effects of testing.

The generation of imagery and testing of the subjects was conducted in a small, quiet room where outside noise was kept to a minimum. Conditions were maximized to facilitate the maintenance of the imagery of the subjects; outside interferences were kept to a minimum.

Each group was escorted into the room and seated comfortably. They were read the following instructions:

"This is an experiment to determine how imagining scenes affects people's reactions. You will be asked to visualize in your mind several scenes and then to fill out a short questionnaire about how you felt while imagining that scene. We will begin by going through a scene to help you sharpen your powers of imagery."

Scene A was always presented first, while scenes B, C, and D were presented in different orders. In both groups five subjects received the order B-C-D, five subjects received the order C-D-B, and four subjects received the order D-B-C.

A warm up period to sharpen the subjects' powers of imagery was conducted; the students were asked to visualize a scene in a supermarket while the examiner read a description of the event. A supermarket scene was chosen as a neutral communication experience (see Appendix A, page 34).

Subjects were then asked to visualize Scene A and fill out the STAI based on how they felt while imagining the scene. They were then asked to visualize a communication scene, fill out the questionnaire, and then visualize the relaxation scene for two minutes. This sequence was presented for the three communication (B, C, and D) scenes.

After the final situation was presented, each subject was asked to rate how clearly they could imagine the scenes. A five point scale was used; a rating of one indicated that they could not visualize the scene at all, while a rating of five indicated they could visualize the scene very clearly (see Appendix C). Only subjects reporting ratings of three, four, or five (moderately to very clearly) were included in the study. No subjects were excluded from the study because of lack of imaginary ability.

Available research seems to indicate that invoked images create affective responses similar to those evoked by in vivo experiences (Anderson, 1980); however, several difficulties arise when using imagery as an experimental variable. The two main difficulties in this study concerned the desired effects of the scenes and the hierarchy of anxiety production by the scenes. Both were evaluated; a group of four judges rated each scene and placed them in an order of most anxiety producing to least anxiety producing. Scene B was judged by 100% of the raters as most anxiety producing and Scene A was judged by 100% as the least anxiety producing.

75% stated that Scene D was the second most anxiety producing, and 75% rated Scene C as the third most anxiety producing. A pilot study was conducted on five students in the Normal CA range group to evaluate the hierarchy of anxiety. Based on these preliminary results (see Appendix E) further refinement of the imagery instrument was conducted.

Results

The means and standard deviations of the STAI-A state scores are presented for the HCA and the NCA groups during each of the four situations are shown in Table 1.

Insert Table 1 about here

A repeated measures factorial analysis of variance was conducted for two purposes: preliminarily, to assess whether the imagined scenes generated anxiety above the baseline level, and to test whether differences occurred between HCA and NCA groups across situations (difference of anxiety intensity hypothesis).

The imagined communication situations produced the desired levels of anxiety in each group for two of the three scenes. Individual comparisons of means by the Newman-Keuls method indicated that scene B was more anxiety producing than scenes A, C, and D ($p < .01$) for both the HCA and NCA groups. Scene D also generated more anxiety than A in each group ($p < .05$). In addition, scene D produced more anxiety than C ($p < .05$) in the HCA group. However, scene C was not significantly different from A, suggesting that there was no difference in anxiety reported from being relaxed or imagining being in the one-to-one communication situation. These findings indicate that although the scenes were developed on a logical

basis, they generated heightened levels of anxiety for both the HCA and NCA groups.

Table 2 presented the results of the repeated measures factorial analysis of variance which was used to test the hypothesis regarding the intensity of the anxiety between groups.

Insert Table 2 about here

As shown, the combination of groups and situations yielded a significant interaction effect. Subsequent analysis using an "F" test confirmed that the primary source of the interaction was at situation B, the public speaking situation ($F = 9.64$, $P < .05$). The group by situation combination did not produce differential results at situation A, C, or D. This indicates that subjects high in CA were more anxious in the public speaking situation than normal CA subjects. This phenomenon does not occur in the small group or one-to-one communication situation. However, a test for simple main effects indicated no systematic difference between groups ($F = 1.79$, $p .18$).

In order to test the hypothesis regarding the difference in the frequency of anxiety experienced between groups, each subject was assigned a score of zero to three, indicating the number of situations in which elevated (greater than 45) STAI scores were observed. The HCA group was found to have a total of 20 elevations and the NCA group had 15 elevations. However, a t -test ($t = 1.25$) of the differences in scores between groups indicated no significant difference in the frequency of anxiety elevations.

Discussion

To test the appropriate conceptualization of communication apprehension as a trait, it was predicted that HCA subjects would experience more elevations (STAI scores greater than 45) over the three communication situations. The analysis did not support these predictions. The hypothesis regarding the difference in the frequency of elevations of state anxiety between groups was therefore rejected. The results of this study do not support the contention that persons classified as communication apprehensive exhibit heightened anxiety more frequently across varied communication situations than those with normal levels of apprehension. The findings appear to be one more indirect example of the lack of cross-situational consistency of communication apprehension.

In addition, the prediction was made that the HCA group would experience more intense feelings of anxiety across all three communication situations. The analysis revealed no difference between groups across the situations tested.

When the effects of the situation are combined with persons who exhibit different levels of CA, a significant difference occurs at situation B, the public speaking scene. This result suggests that HCA subjects experience more anxiety in public speaking situations than NCA subjects. However, this apparent difference may represent a confounding due to selection since the PRCA has been questioned about its ability to discriminate across various types of communication situations.

By factor analyzing the self report ratings of anxiety of 282 subjects over 35 communication situations and the corresponding PRCA scores, Parks et al. (Note 1) identified two general classes of situations

related to the anxiety experienced by the subjects. The level of familiarity with others in the same situation played a major role in the differentiation of the factors. Factor I consisted of situations where the subjects were likely to know the person, and Factor II consisted of situations where the subjects were less likely to know the participants. Increases in PRCA scores were associated with increases in the anxiety level for Factor II in a relatively linear fashion while Factor I was unrelated to PRCA scores. Since the composition of the PRCA is heavily loaded with items where the rater is not familiar with the other participants or the items are not specific about the familiarity of the other persons, the PRCA may be biased in the selection of communication apprehensive persons. The PRCA may be valid only to discriminate between anxiety levels in persons when they are in situations where they are unfamiliar with the other person involved, such as public speaking situations.

The results of this study do not support the notion that the construct of communication apprehension can best be conceptualized as a broad based personality trait. There appears to be little evidence that people who are measured to be high in anxiety in some communication situations have a predisposition to respond to all communication situations with increased levels of anxiety. This finding limits the predictability of CA and argues against its conceptualization as a trait.

The decades of the 60's and 70's have produced several advances in the meaning and measurement of the construct of personality. Mischel (1968) criticized the trait conceptualization and began a decade of systematic investigation into the reciprocal interactions between persons

and contexts in the development and maintenance of human behavior. The goal of the research was to examine how people categorize, simplify, and process information when making judgments about other persons. He coined the term "cognitive economics" or the recognition that people must simplify and reduce the flood of information to allow for efficient processing. Five years later Mischel (1973) outlined his conceptualization of personality based on a cognitive social learning analysis. He attempted to outline the kinds of person variables that may serve an explanatory function in an interactional psychology format.

Mischel (1979) is currently attempting to gain an understanding about the natural categories that people attribute to each other. By developing a three level taxonomy of category labels, it was demonstrated that the middle level, or "basic level" category maximizes and limits the number of categories formed, yet provides the necessary richness to be an ideal cognitive system. The trait conceptualizations of persons are considered to be at the first level and are not "cognitively economic". An understanding of the rules people use about assigning persons to categories is also under investigation.

Mischel's work is one of the several different approaches to the explanation of the construct of personality. Endler and Magnusson (1977; see Appendix A, page 23) have approached the problem in a different vein, terming their work "interactional psychology" and emphasizing the mediating variables of the individual. There is a growing recognition among personality theorists that it may be more meaningful to gain information about the nature and function of "personality" by analyzing its components, the relationships between them, and the interaction with the environment

rather than by dealing with the construct in global terms. Therefore, with respect to CA, it may be more useful to be able to predict which situations arouse increased levels of anxiety, e.g., public speaking situations, than to be able to identify persons who are thought to experience CA in a variety of situations. Our understanding of human communication behavior might benefit from a more complex analysis which draws upon more timely conceptualizations consistent with more personality theory.

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TABLE 1
STAI (STATE) MEANS AND STANDARD DEVIATIONS

	Group	<u>n</u>	Situation			
			A	B	C	D
	<u>NCA</u>	14				
Mean			25.42	54.14	32.78	37.21
SD			5.75	12.70	8.97	7.90
	<u>HCA</u>	14				
Mean			27.64	65.57	29.57	39.64
SD			5.57	10.66	8.19	13.56

Note: A is the relaxation scene

B is the public speech

C is the one-to-one communication

D is the small group communication

TABLE 2
 REPEATED MEASURES FACTORIAL ANALYSIS OF VARIANCE
 FOR HCA AND NCA GROUPS

SOURCE	df	MS	F
Groups	1	192.93	1.79
Situations	3	6351.22	85.71**
Groups by Situations	3	306.10	4.13*
Subjects by Situations	52	107.78	
Groups by Subjects (Situations)	52	74.10	

* $p < .05$

** $p < .001$

APPENDIX A

PROSPECTUS

UNIVERSITY OF OKLAHOMA

College of Education

THE EFFECTS OF IMAGERY INDUCED ANXIETY ON COMMUNICATION

APPREHENSIVE PERSONS: A TRAIT ANXIETY

CONSTRUCT VALIDATION PARADIGM

A prospectus for the dissertation in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Counseling Psychology.

Joseph C. Pointer

Approved by:
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Wayne Rowe, Chairman

Richard A. Wantz

Lloyd J. Korhonen

Robert Ragland

Date

Roger Babich

DISSERTATION PROSPECTUS

THE EFFECTS OF IMAGERY INDUCED ANXIETY ON COMMUNICATION
APPREHENSIVE PERSONS: A TRAIT ANXIETY
CONSTRUCT VALIDATION PARADIGM

NAME AND FIELD OF STUDY: Joseph C. Pointer, Counseling Psychology

ADVISORY COMMITTEE: Wayne Rowe, Chairman
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INTRODUCTION:

Background of the problem: The concept of trait attributions of personality has been used for the past 50 years. According to Mischel (1976), the early phases of a science often are concerned with naming things and classifying them into categories in an orderly fashion. Early attempts at explaining human behavior by psychologists involved categorizing people on a dimension and then making inferences about hypothesized attributes such as character and prototypic behavior. Psychologists hoped to discover some basis of personality and to be able to predict behavior based on it. They felt that a trait was the property within the person that accounted for that individual's typical reactions to various situations. Thus traits became a construct to explain behavior. Trait psychology attempts to describe personality in trait terms and then, through empirical and quantitative investigation, to refine the constructs and demonstrate their validity (Allport, 1966).

In the last two decades a movement has developed in the personality research field which espouses the interaction of the person and the situation in determining human behavior. This represents an attempt to study

the manifestations of a person's traits based on the psychological situation at the moment. The stability of behavior assumption of the trait theorists has come under fire during this period of time. Much research has been generated and the conclusions seem to support the lack of cross-situational consistency of behavior.

One trait which has been investigated for the last fifty years is anxiety. The initial research was generated by clinical-applied psychologists and was heavily influenced by the trait psychologists. They emphasized the measurement and identification of the factors which influence "anxious" people. Cautella was one of the first to become interested in the state-trait distinction of anxiety. Charles Spielberger extended Cautella's work and formulated the theory of state and trait anxiety in Anxiety and Behavior (Spielberger, 1966). He stated that state anxiety (A-state) is a situationally determined response to a threat, while trait anxiety (A-trait) refers to the relatively stable individual differences in anxiety proneness. Two main predictions based on the state-trait theory are:

- 1) A-state scores fluctuate as a function of different stress conditions; as the anxiety reaction to the stressor increases, the A-state score will be elevated; as the reaction to the stressor decreases, the A-state scores will decline.
- 2) Persons who are high in A-trait will exhibit elevations in A-state more frequently and with greater intensity than persons who are lower in A-trait.

Anxiety has been associated with many different types of performance. One of the more researched areas is speech anxiety. The original concept was limited to the anxiety experienced while speaking before a

group of people. McCroskey (1978) has extended the concept to include the anxiety experienced in interpersonal situations and has named this construct "communication apprehension" (CA). He described it as a "broad based personality type characteristic that has major impact on an individual's communication behavior." A clear statement is made by McCroskey that CA is a trait; he presented evidence for his belief (McCroskey, 1978). Beatty (1978) challenged this assumption on the basis that the stability of the construct is lacking. Hewes and Haight (1979) also tested the cross-situational consistency of communication behavior; they could not support its stability and concluded that it exists only to a limited degree. Epstein (1977) presents data that support the trait conceptualization of behavior; he concluded that the inability to demonstrate stability of behavior across situations is a measurement error and is not related to the behavior.

REVIEW OF RELATED LITERATURE:

The use of traits to describe personality has been noted in the literature for many decades. It is expected that they will allow us to predict what to anticipate from an individual over many situations. Allport (Bem & Allen, 1974) has cited approximately 16,000 trait descriptors in the English language. Traits, as judged in everyday life, are informal assessments of relatively broad and enduring response dispositions; they are inferred from observations of behavior.

Recently, Magnusson and Endler (1977) have provided a description of trait personality theory which is not as restrictive as Allport's (1937) original definition. Allport (1966) conceded that his original work overlooked the ecological, social, and situational factors in determining behavior. They indicate that the trait concept refers to the

functioning of a mediating system in the organism. They refer to the traits as latent dispositions to act in a certain way; it is an aspect of the person's way of selecting, interpreting, and treating information as a basis for coherent behavior across situations.

However, the question of behavioral consistency arises as one of the main criticisms of the trait model of personality. Bem and Allen (1974) report that it is not possible to do better than "predicting some of the people some of the time" because of this lack of consistency. Mischel (1968) contends that a $+0.30$ correlation is the ceiling for measures of consistency across situations. He criticizes the predictive utility of a trait based approach to personality assessment. This has been seen in studies by Beatty, Behnke, & McCallum (1978) and Hewes and Haight (1979).

This approach to personality is typified by Magnusson and Endler (1977) as interactional psychology. They stress the word "interaction" and state that in a model of behavior it hopes to integrate person mediating variables, person reaction variables, and situational factors to describe and explain how an individual develops and maintains behavior. The focus is the dynamic interaction between variables; this is a continuing process - individuals contribute to the situations they encounter and their perceptions influence their behavior. They argue that the percentage of variance accounted for by each variable together will add more to the assessment of personality than the contributions of each alone.

Epstein (1977) has responded that traits are "alive and well". He concluded that it is foolhardy to infer the existence of a trait from a single measure of behavior and then try to predict other behaviors from it. He also provided evidence that over increased time periods higher

reliability than $+ .30$ of behavior can be demonstrated. The original limits seen by others is imposed by the error in measurement as the result of a single observation.

The earlier paragraphs are not intended to be an in-depth analysis of the controversy in personality assessment, but to provide an overview for what follows. For the purpose of this research, the definition of a trait as proposed by Spielberger (1972) will be used. He defines a trait, specifically trait anxiety, as the relatively stable individual difference in the strength of the latent disposition to manifest a certain type of reaction.

Anxiety has emerged as a central problem in the 20th century. Since the turn of the century the clinical studies of anxiety have increased geometrically. Prior to 1950 there were relatively few experimental investigations, the complexity of the anxiety phenomena was being recognized, and the need for better assessment instruments contributed to the lack of empirical data. Lamb (1976) provides a historical perspective for anxiety research prior to 1960. Most of the data was gathered from a clinical-applied perspective. There were many and varied views of the nature and manifestations of anxiety. Spielberger recognized this diversity and attempted to bring the noted researchers in the field together. They presented their views and debated the merits of their particular system. Spielberger edited two volumes, Anxiety and Behavior (1966) and Anxiety: Current Trends in Theory and Research (1972) from these conferences.

It is meaningful to distinguish between anxiety as a transitory state and a relatively stable individual personality difference. As a

personality trait it implies a disposition to perceive a wide range of non-dangerous circumstances as threatening. Houston, Olson, and Botkin (1972) experimentally validated this assertion and concluded that persons high in trait anxiety are more prone to elevations in state anxiety during stressful situations. Their research supports Spielberger's state-trait conception of anxiety.

The state-trait conception employs two anxiety constructs, trait anxiety (A-trait) and state anxiety (A-state). Spielberger (1972) defines state anxiety as a transitory emotional state that is characterized by subjective, consciously perceived feelings of tension and apprehension. It may be conceived of as an emotional condition which may vary in intensity and fluctuate overtime. The duration and intensity is dependent on the environmental conditions that arouse the A-state reaction. These conditions are often called threat and/or anxiety situations. Trait anxiety, according to Spielberger, refers to the relatively stable individual differences in anxiety proneness; that is, the differences in people to respond to situations perceived as threatening with elevations in A-state. Persons higher in A-trait will tend to exhibit A-state elevations more frequently and more intensely than those lower in A-trait anxiety. The theory indicates that high A-trait individuals will perceive situations or circumstances that involve failure or threats to self-esteem as more threatening than will persons who are low in A-trait.

Armed with a theoretical view of anxiety, Spielberger attempted to measure the constructs. He devised the State Trait Anxiety Inventory (STAI; Spielberger, Gorsch, & Lushene, 1968). The test yields scores on two 20-item sections - the Trait and State portion of the inventory.

Validation of the A-trait portion was conducted by a construct validation paradigm with other measures of trait anxiety and by demonstrating the stability of the measure across experimental situations. Validation for the State portion was accomplished by demonstrating high inter-item reliability, and by demonstrating that the STAI measures differential anxiety under different stress conditions. The correlation between the State and Trait measures is a $+0.45$ to $+0.55$ given under standard conditions. The trait portion has been demonstrated to be insensitive to changes in A-state anxiety for physical threats, but do change when a threat to self-esteem is employed (Lamb, 1976). Using this finding, Lamb (1972) has developed a state-trait inventory for public speaking based on the STAI model. Zuckerman (1976) argues that a specific trait measure, such as Lamb's speech A-trait, may be more useful for making individual predictions than general trait measures such as the STAI A-trait scale. The results are contradictory at this point.

One form of anxiety that has been investigated extensively is speech or communication anxiety. McCroskey (1970) developed the Personal Report of Communication Apprehension (PRCA) to help validate and elucidate the concept of communication apprehension. It is defined as "an individual's level of fear or anxiety associated with either real or anticipated (oral) communication with another person or persons." The reliability of the construct was investigated in 1972 by McCroskey (1972). Validation was concluded six years later; McCroskey tested the PRCA in relationship to five theoretical predictions (McCroskey, 1978) and concluded that the instrument had the necessary validity to be used as a measure of communication apprehension.

Underlying the PRCA is the assumption that CA is a trait, McCroskey claims that the test-retest reliability reported in 1970 is evidence of a relatively permanent personality type trait. Beatty, Behnke, and McCallum (1974) investigated this assumption. They argued the scores on the PRCA should not be affected by the day to day activities of their subjects. Using both raw and rank order scores, they concluded that the results do not support the trait conceptualization of CA. It was concluded that the PRCA was sensitive to state fluctuations. Hews and Haight (1979) attempted to measure communication behavior across several situations. They argued that cross-situational consistency is important in establishing the degree of predictive utility and explanatory power of an individual trait. Six behaviors linked to communication reticence were investigated. Subjects who were high in reticence were observed and measured. By using a correlational approach to analyze the data, they concluded that the results did not support the notion of cross-situational consistency of communication behavior. The burden of proof now appears to lie with those who support the validity of the cross-situational consistency assumption. Hewes and Haight state that their results provide an indictment of personality traits such as communication apprehension.

Statement of the Problem. There appears to be conflicting evidence as to whether CA is best conceptualized as a state or a trait. The proposed study will address this question and will generate data which may serve to disconfirm or support one position or the other.

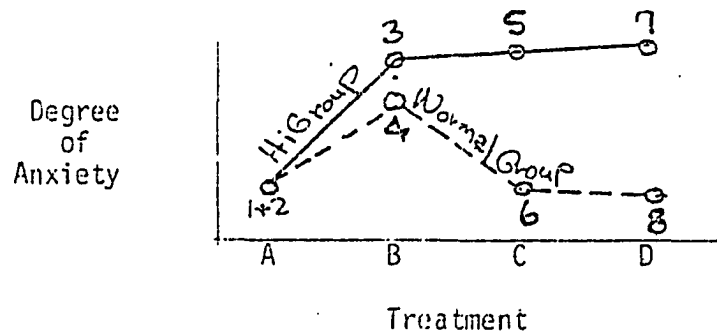
STATEMENT OF HYPOTHESES:

Two hypotheses will be used to test propositions set forth by Spielberger. The hypotheses are concerned with the frequency and the

intensity of the anxiety experienced by the high CA group. They are:

1. The high CA group will experience more frequent feelings of anxiety than the low CA group across situations.
2. The high CA group will experience more intense feelings of anxiety than the low CA group across situations.

These hypotheses will be tested by employing individual comparisons. The table below will serve to clarify the narrative description of the comparisons.



It is assumed that measurement 1 and 2 are equivalent on treatment A.

To test hypothesis 1, the frequency of anxiety felt by the High CA group, measurements 3, 5, and 7 will be compared to measurement 2. It is hypothesized that measurements 3, 5, and 7 will be greater than measurement 2. Likewise, measurements 4, 6, and 8 will be compared to measurement 2. It is hypothesized that only measurement 4 will be different than measurement 2. The number of increased frequencies from the High Group will be compared to the number of increased frequencies in the Normal Group. It is hypothesized that the High Group will have more increased frequencies than the Normal Group.

To test hypothesis 2, the intensity of anxiety, measurement 3 will be compared to measurement 4, 5 will be compared with 6, and 7 will be compared with 8. It is hypothesized that measurements 3 and 4 will not

be different, while 5 and 6, and 7 and 8 will be different.

If both of these conditions are met, then it will be concluded that CA can best be conceptualized as a trait.

METHOD:

Instruments. The Personal Report of Communication Apprehension (PRCA) developed by McCroskey (1970), which consists of 25 items designed to measure a person's anxiety associated with real or anticipated oral communication, will be used to select subjects. Based on use at Pennsylvania State University, the mean consistently was between 73 and 75, the standard deviation has ranged between 13 and 15. Subjects scoring above 88 are considered "high" in CA and those scoring below 58 as "low" (McCroskey, 1978).

Test-retest reliability estimates have ranged from .82 to .96. Test-retest reliability for 700 students over a seven week period was .82. McCroskey (1978) states that the best indicator of the validity of the measure was the degree to which it was consistent with the theoretical constructs. He proposed five theoretical propositions and reported (McCroskey, 1978) the current related research. He concluded, "The results of the data underlying the construct of oral communication apprehension have been consistently supported in research employing the PRCA to predict specific behaviors. These results taken together provide a strong indication of the predictive validity of the instrument."

The dependent variable, the reported anxiety associated with different imagined interpersonal situations, will be measured by the State-Trait Anxiety Inventory (STAI; Spielberger, 1970). The inventory consists of 40 items, 20 to assess how a person generally feels (the A-trait scale),

and 20 to assess how a person feels right now (the A-state scale). Only the A-state scale will be used.

Test-retest reliability of the instruments yielded high correlations, from .73 to .86, for the A-trait scale and from .16 to .54 with a median r of only .32 for the A-state scale (Spielberger, Gorsch, & Lushene, 1970). The low r 's for the A-state scale reflected the influence of the situational factors during the testing situation. Internal consistency estimates of reliability for the A-state scale ranged from .83 to .92; estimates for the A-trait scale were equally high.

Concurrent validity evidence for the A-trait scale and IPAT Anxiety Scale, the Taylor Manifest Anxiety and the Affect Adjective Checklist yielded correlations from .52 to .80. The construct validity for the A-state scale was evaluated in a study using 977 undergraduates. Two conditions were evaluated; a normal and exam condition. The degree to which each item reflected differences in A-state evoked by the two experimental conditions is indicated by the size of critical ratio and the magnitude of the point-biserial correlation.

Subjects. Thirty experimental subjects will be used; two groups will be formed - a high CA group and a normal CA group. High CA subjects will have PRCA scores greater than 85. Normal CA subjects will score between 65 and 74 on the PRCA. Subjects will be selected from the population of undergraduate education students at the University of Oklahoma. They will be tested in groups and assigned randomly to the experimental groups.

Procedure

Four experimental treatment conditions will be used. Treatment A will involve each subject in the group using imagery to help them relax. Treatments B, C, and D will involve each subject imaging a different communication experience (a speech to a group of peers, a one to one communication with a peer, and participation in a small group discussion). The scenes were intended to provide a range of anxiety experiences; they were developed by logical analysis. They were validated by four people who ranked them in their order of anxiety production. In order to determine that the treatments are sufficiently potent to show the desired effects, a pilot study will be conducted. Treatments B, C, and D will be presented to each subject in a counterbalanced order, in order to eliminate effects due to order of presentation.

Each group will be escorted into a room and seated comfortably in chairs. A period of warm up will be provided. This is intended to sharpen their powers of imagery; it will involve a neutral communication experience. They will be instructed to relax and relaxing imagery will be presented. After relaxing for five minutes, they will be asked to fill out the A-state portion of the STAI. They will then be asked to imagine one of the three treatment conditions for five minutes. After imagining the first scene, they will fill out the A-state portion of the STAI. Instructions to relax will be given for two minutes. They will be asked to imagine the second scene for five minutes and to fill out the STAI, A-state portion. Instructions to relax will be given again

for two minutes. They will be asked to imagine the last treatment condition for five minutes. Again they will fill out the A-state inventory. Final relaxation instruction will be given. They will be debriefed and thanked for their cooperation.

The Use of Imagery

Integral to the use of any covert procedure is the ability of the person to achieve and perform appropriate imagery. Cautela and McCullough (1978) present several factors to be considered in appropriate imagery procedures. They state that the scenes should be as clear as possible, should be as vivid as possible, and should involve as many of the sense modalities as possible. Best results occur in response to imagining "being there" rather than to just imagining detailed descriptions without the affective components. The goal is to produce as close an approximation of the imagined event to the real event. Lang (1978) concludes that, "it is felt that fundamental to the emotional response of fear is the prototype fear image contained in long term storage. If a stimulus does not match a prototype, fear is not evoked. However, instructions which provide more information can prompt emotional processing." For the purposes of this study, the vividness of the scenes will be rated at the end of the sessions. A scale of 1-5 will be used to rate their vividness.

Instructions

The following instruction will be given to each subject:

"This is an experiment to determine how imagining things effects people's reactions. You will be asked to visualize in your mind several

scenes and then after each to fill out a short questionnaire about how you felt while imagining the scene. We will begin by going through a scene to help you sharpen your powers of imagery.

"Sit back and try to imagine the scene I describe. Try to imagine that you are really there. Use all your senses if possible. Try to imagine the smells, the feelings of the objects, the sights of the objects, and the sounds going on around you. For example, if you imagine you are in a supermarket, imagine you can hear people talking, the cash registers ringing, the smell and touch of the food, and the beautiful colors of the produce.

Let's work on imagining a scene clearly. Ready? Close your eyes and just relax.

Imagine you are going to a supermarket. You walk through the door and smell a variety of smells. You hear the people talking - it is a low background noise. You get a cart - it feels cold to your touch. Imagine and concentrate on the cart, the cold steel and the hard plastic on the handle. You walk down the aisle. You see the brightly colored fruits and vegetables. It has a pleasant smell - especially the vegetables. Try to see them in your mind very clearly. You turn down another aisle and see the frozen foods. The whole aisle is cold - you shiver a bit. You touch the cold packages. Feel the frost on the tops - it's cold, grainy, and wet. Now you hear the hum of the refrigeration units - it's a low pleasant hum. Try to hear the hum. You pick up some ice cream and you wheel the cart to the checkout line. It's a long line. Concentrate on the people - see the short ones, the tall ones. Try to feel their impatience at not getting through the line quickly. You feel impatient and rushed. Try to

feel the impatience in your mind. You get to the checker. Hear the sound as she calls out your price, the banging of the keys, and the sound as the boy puts your ice cream in a bag. You leave - feel the weight of the bag in your hand and the smell of the parking lot. Just relax. We have completed the tour of the supermarket. Open your eyes slowly and just relax.

Now, I want you to try to relax some more. Breathe deeply and try to feel very relaxed. Close your eyes.

Imagine that you are lying along a beach. You notice the white sand sparkling against the warm sun- You feel the warm sun on your shoulders - you are feeling very relaxed and comfortable. You hear the sound of the waves beating rhythmically on the shore. It is a very steady, low beating. It becomes hypnotic. You smell the fresh air. It's a clean, refreshing smell, and you feel very relaxed. You don't have a care in the world - school is over for the year and you have a whole summer to relax and feel comfortable. You are very calm, very relaxed. You are lying along in the warm sun, feeling the breeze on your face, and not having a care in the world. You are very relaxed. Try to imagine yourself lying along the beach. You are feeling very relaxed and very calm.

I'm going to count backward from five. When I get to one, I want you to open your eyes and feel very comfortable and relaxed. 5, 4, 3, 2, 1. Open your eyes. You are feeling very comfortable and relaxed.

Now, I want you to fill out this questionnaire. Answer the questions based on how you felt when you imagined yourself lying on the beach.

Next, I want you to imagine that you have been selected to speak to 200 college freshmen on the problem of the incoming college freshmen. OU has agreed to pay you \$100 for your presentation. You have prepared

your speech well, but wish you had more time to practice. You are sitting in the back of the auditorium in a hard chair. It is difficult to hear because people are talking. Your name is announced; you hear the audience clap. You walk slowly to the stage. There are stairs to the stage; you walk up slowly. The person in charge shakes your hand and tells the audience about your college career. You walk toward the microphone - it is cold and shiny to the touch. You adjust it to the correct height. It hums quietly. You look out over the audience and see the many faces - the black, brown, yellow, and white faces of persons of different races. They are bright-eyed and appear eager to hear your talk. The microphone squeaks loudly; the person in charge taps on it to clear it. All is quiet. You begin to talk; the loudness of your voice startles you. You continue with your talk; as you talk you look out at the audience - you see the faces of the audience. Some seem bored, others enthusiastic. You look down at the white index cards on which you have written your notes - the stark black against the white cards stands out. You hear your voice over the loudspeaker as you continue to speak.

Please fill out the questionnaire based on how you felt while you imagined the scene.

Now, I want you to try to relax some more. Breathe deeply and try to feel very relaxed. Close your eyes.

Imagine that you are lying along a beach. You notice the white sand sparkling against the warm sun. You feel the warm sun on your shoulders - you are feeling very relaxed and comfortable. You hear the sound of the waves beating rhythmically on the shore. It is a very steady, low beating. It becomes hypnotic. You smell the fresh air. It's a clean,

refreshing smell, and you feel very relaxed. You don't have a care in the world - school is over for the year and you have a whole summer to relax and feel comfortable. You are very calm, very relaxed. You are lying along in the warm sun, feeling the breeze on your face, and not having a care in the world. You are very relaxed. Try to imagine yourself lying along the beach. You are feeling very relaxed and very calm.

I'm going to count backward from five. When I get to one, I want you to open your eyes and feel very comfortable and relaxed. 5, 4, 3, 2, 1. Open your eyes. You are feeling very comfortable and relaxed.

Now, I want you to imagine that you are coming home from your last class of the day. It's been a long day and you are feeling tired. You are walking toward your place of residence. Notice the look of the building, the windows and doors and the walkway leading up to the entrance. You put your hand on the knob to open the door. A friend calls out to you from a car parked in the street. Your friend motions to you to walk over to him. You turn around and retrace your steps to the street. Your friend has a new car; it's a sporty model and bright red with white interior. Your friend looks very happy - you see the smile on his face. He talks rapidly about it; the miles per gallon, the ride, and the handling. It's clear your friend is excited and his excitement transfers to you. Your friend asks you if you want to go for a ride and you agree. You get in and smell the new upholstery and see the shiny new instruments and the white steering wheel. You ask him how much the car cost and how he could afford it. As you drive down the street you and your friend chat about school, the professors, and the upcoming football season. You haven't seen your friend all summer and are busy asking questions about

how he got along and what he did. You hear the hum of the engine and the smooth ride of the car. You both chat for awhile about what you have done over the summer.

Please fill out the questionnaire based on how you felt while you imagined the scene.

Now, I want you to try to relax some more. Breathe deeply and try to feel very relaxed. Close your eyes.

Imagine that you are lying along a beach. You notice the white sand sparkling against the warm sun. You feel the warm sun on your shoulders - you are feeling very relaxed and comfortable. You hear the sound of the waves beating rhythmically on the shore. It is a very steady, low beating. It becomes hypnotic. You smell the fresh air. It's a clean, refreshing smell, and you feel very relaxed. You don't have a care in the world - school is over for the year and you have a whole summer to relax and feel comfortable. You are very calm, very relaxed. You are lying along in the warm sun, feeling the breeze on your face, and not having a care in the world. You are very relaxed. Try to imagine yourself lying along the beach. You are feeling very relaxed and very calm.

I'm going to count backward from five. When I get to one, I want you to open your eyes and feel very comfortable and relaxed. 5, 4, 3, 2, 1. Open your eyes. You are feeling very comfortable and relaxed.

For the last scene, I want you to imagine that you are walking out of your last class before lunch. The class was interesting. You decide to eat at Campus Corners. Imagine walking to the Campus Corners to eat - you're enjoying the view - the sounds of the birds, the smell of the flowers and the green of the trees. You're much more relaxed. Try to

imagine yourself in that situation. You see a friend of yours in the distance. Your friend is waving to you. You walk toward your friend. Your friend says "hi" and you ask your friend "what's happening?" You talk for a while about school and your professors. Your friend suggests that you and he meet with some other people in the restaurant. You agree.

You walk into the restaurant. Imagine yourself standing by the entrance. It's brightly colored and there are plants hanging all around. You and your friend walk toward a booth. You notice there are three other people in the booth - two guys and a girl. You have seen them in classes. You sit down next to the girl. You are introduced around. You wait for an opening in the conversation. You discover that they are talking about something you know a lot about. You wait for an opening and state your point.

I want you to fill out the questionnaire based on how you felt while you were imagining the conversation in the restaurant.

Now, I want you to try to relax some more. Breathe deeply and try to feel very relaxed. Close your eyes.

Imagine that you are lying along a beach. You notice the white sand sparkling against the warm sun. You feel the warm sun on your shoulders - you are feeling very relaxed and comfortable. You hear the sound of the waves beating rhythmically on the shore. It is a very steady, low beating. It becomes hypnotic. You smell the fresh air. It's a clean, refreshing smell, and you feel very relaxed. You don't have a care in the world - school is over for the year and you have a whole summer to relax

and feel comfortable. You are very calm, very relaxed. You are lying along in the warm sun, feeling the breeze on your face, and not having a care in the world. You are very relaxed. Try to imagine yourself lying along the beach. You are feeling very relaxed and very calm.

Finally, I want you to try to relax. Imagine the calm you felt while lying along the beach. Enjoy the cool breeze and the warm sun. You are feeling very calm and relaxed. Open your eyes slowly.

I want to thank you for your time and cooperation. Do you have any questions about what we have done?

Design and Analysis

A repeated measures design will be used. The basis of the design is the inclusion of a periodic measurement process on a group of individuals and the introduction of an experimental treatment into this series of measurement. The problem of internal validity concerns the plausible competing hypotheses that offer a likely alternate to the change in the time series other than on the effect of the treatments. Failure to control for history is the most definite weakness; some other competing hypothesis may produce the changes. Experimental isolation is necessary for control for this. These considerations are not a problem with this study.

To test hypothesis one, a "t" will be used. To test hypothesis two, a group by trials ANOVA will be used. If a group by trials interaction is evidenced, then "post hoc" individual comparisons will be used.

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APPENDIX B

INFORMATION TO PARTICIPANTS

Appendix B

Information to Participants

To The Potential Participant:

I am pleased that you have taken an interest in this research project. I am collecting information about how people react to different communication situations.

The first step in being selected as a potential subject involves filling out this questionnaire. Please answer it quickly and record your first impression. The information will be kept in strictest confidence. If you meet a set criterion, I will contact you in a few days and arrange for a meeting where you will be administered the experimental portion of the study. It will involve imagining different scenes involving communication. You will be asked to record your reactions to the scenes. The session will take about 45 minutes and will be administered in small groups. Upon completion of the 45 minute session, I will pay you \$10.00.

Please record your name and phone number on the questionnaire. Without this information, I will not be able to contact you.

Return this questionnaire before ~~Monday~~^{Friday}, April 18, 1980 at 12:00 Noon at the Human Development Office, Rm. 321 in the Education Building.

Again, I thank you for your time and cooperation.


Joseph C. Pointer
Counseling Psychology Program

APPENDIX C

IMAGERY RATING SCALE

Imagery Rating Scale

Directions:

Please rate how clearly you were able to visualize the scenes in your mind.

1. Could not visualize at all.
2. Could only visualize little.
3. Could visualize moderately.
4. Could visualize clearly.
5. Could visualize very clearly.

APPENDIX D

RAW DATA

Raw Data

Normal CA Group

	PRCA Score	A	B	C	D	Vividness
1.	71	24	67	49	53	4
2.	73	38	55	32	31	3
3.	66	25	58	34	40	5
4.	70	23	63	42	52	4
5.	72	21	32	21	30	5
6.	65	24	61	31	25	5
7.	65	23	45	34	38	3
8.	69	24	35	48	38	5
9.	72	38	35	33	35	4
10.	68	20	57	35	30	5
11.	65	24	60	20	35	5
12.	73	29	66	31	42	5
13.	70	22	69	27	38	5
14.	66	21	63	22	34	5

High CA Group

1.	91	32	64	41	50	3
2.	86	35	68	49	48	5
3.	92	30	62	32	29	4
4.	90	32	63	30	32	5
5.	95	25	69	35	50	5
6.	94	20	75	20	21	4
7.	88	21	67	27	25	5
8.	88	35	80	25	63	4
9.	96	21	33	21	26	5
10.	99	20	72	20	23	5
11.	97	23	71	32	52	5
12.	90	27	66	24	47	4
13.	90	27	70	20	41	4
14.	87	23	63	27	37	4

APPENDIX E

NOTES ON THE PILOT STUDY

Notes on the Pilot Study

To evaluate the hierarchy of anxiety generated by the situations, a pilot study was conducted. Five subjects who scored in the NCA group were selected. They were seated in a comfortable room and the procedure of the study was followed as presented in the narrative.

The mean anxiety responses of the five subjects are presented in the table below.

Group	<u>n</u>	Situation			
		A	B	C	D
NCA	5	20.4	48.6	26.4	56.6

Note: A is the relaxation scene
 B is the public speech
 C is the one-to-one communication
 D is the small group communication

In the original rank ordering of the scenes, scene D was judged to be the second highest anxiety producing scene. The results indicate that the scene generated too much anxiety and would have to be rewritten to correspond to the rank ordering of the scenes.