

HARDINESS AND PUBLIC SPEAKING ANXIETY:  
PROBLEMS AND PRACTICES

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This study explored the relationship between the personality construct of hardiness and public speaking anxiety. Although hardiness has been widely explored in a variety of anxiety-arousing life events, its relationship with communication anxiety had not been previously studied. Therefore, hardiness, public speaking trait anxiety, and public speaking state anxiety were measured in a course requiring an oral presentation assignment. One hundred fifty students enrolled in a basic speech communication course participated in the study. A statistically significant correlation was revealed between hardiness and trait communication anxiety. Students higher in hardiness reported lower trait communication apprehension in three contexts: 1) meeting, 2) interpersonal, and 3) group. Overall, students did not differ on measures of hardiness and a fourth communication context: public speaking anxiety. Likewise, on measures of hardiness and state public speaking anxiety, students did not differ.

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## CHAPTER ONE

### Introduction

*One's adaptability is "essentially the ability to learn from experience; the power to retain from one experience something which is of avail in coping with the difficulties of a later situation" (Dewey, 1916, p. 53).*

Anxiety has commanded the attention of the research communities for several decades. In particular, the manner in which individuals both experience and respond to anxiety has received particular focus. Ground-breaking studies include reports of types of anxiety (Spielberger, 1966), the health impact of anxiety (Kobasa, 1979), communication anxiety (McCroskey, 1977), and public speaking anxiety (Behnke & Carlile, 1971). Likewise, the literature is replete with investigations of stress and coping strategies (Lazarus, 1966; Lazarus, 1993; Miller, 1990). In explaining anxiety, stress, and coping, researchers point to both to an individual's neurobiological traits and one's social learning experience.

One specific personality construct is particularly valuable when considering stress. This construct views stressors, and their impact on the individual, from the unique position of one's resilience to stress. This notion is aptly known as one's *hardiness*.

Hardiness is a measure of an individual's position on three closely-related personality constructs: commitment, control, and challenge (Maddi, 2004). Hardiness focuses on a personality trait which moderates the effect of stress on one's health. Where stress has been typically tied to subsequent illness, hardiness optimistically examines the buffering effect this trait has on one's sustained health, free of illness.



Hardiness, and its relationship to stress responses, has been investigated in widely varying anxiety-producing events including military defense forces, corporate managers, nurses, lawyers, bus drivers, and basketball players. Yet, until the present study, none have explored its relationship with a rather ubiquitous anxiety producing experience—that is the event of public speaking.

Clevenger (1959) first advanced a report of stage fright. Since that time, the research literature regarding speech anxiety has been prolific. The broad category of communication anxiety research includes measures of anxiety experienced when communicating in general as well as the anxiety experienced when speaking in front of a larger audience. Generally, the former is referred to as communication anxiety or communication apprehension. The anxiety an individual experiences when delivering a public speech is distinguished from a generalized communication anxiety by the terms *public speaking anxiety*. Some researchers, however, will commonly refer to the latter as communication apprehension when discussing the specific activity of speech-giving.

Research on communication apprehension and public speaking anxiety in recent years has focused largely on communicator traits as temperamental expressions. The literature reports an individual's public speaking trait anxiety as significantly predicting one's state anxiety prior to delivering a public speech (Beatty & Valencic, 2000). Other recent research has centered on varying levels of public speaking anxiety given different points of time (Behnke & Sawyer, 2004).

Many genetic factors have been explored in explaining communication and public speaking anxiety (Beatty & Valencic, 2000; McCroskey & Beatty, 2000; Beatty, McCroskey, & Heisel, 1998). Yet, none yet have explored a possible relationship with

one's hardiness. While an individual's hardiness reflects a rather stable personality trait, public speaking anxiety might reflect either a stable trait or a temporary state. To explore this phenomenon, this study focused on the relationship between public speaking anxiety and hardiness.

### Statement of the Problem

The problem of this study was an exploration of the relationship between the personality construct of hardiness and public speaking state anxiety. While hardiness has been widely explored in a variety of anxiety-arousing life events, with a variety of occupations and age groups, no study has yet explored its association with the anxiety produced when a person delivers a public speech.

### Purposes of the Study

The purposes of this study were to explore the relationship between 1) hardiness and public speaking state anxiety, and 2) hardiness and public speaking trait anxiety. A third purpose was to determine if hardy and non-hardy individuals experience public speaking anxiety differently. A fourth purpose was to determine if hardiness and trait communication apprehension predict varying anxiety levels during the speaking event. A fifth purpose was to determine if hardiness groups are related to public speaking state anxiety groups.

### Research Questions

The problem and purposes of the current study were guided by the following five research questions:

1. What is the bivariate relationship between hardiness and public speaking state anxiety?

2. What is the bivariate relationship between hardiness and public speaking trait anxiety?
3. Do hardy and non-hardy individuals experience different levels of public speaking state anxiety?
4. To what extent do hardiness and trait communication apprehension predict state anxiety levels at the four public speaking milestones?
5. What is the relationship between hardiness groups and public speaking state anxiety groups?

#### Significance of the Study

This study focused on the personality construct of hardiness and its relationship with public speaking anxiety. Hardiness has been explored in a wide range of groups in which an individual's typical experience involves some degree of anxiety or stress. Previous research subjects have included city bus drivers (Bartone, 1989), lawyers (Kobasa, 1982), military cadets (Westman, 1990), athletes (Maddi & Hess, 1992), nurses (Keane, Ducette, & Adler, 1985), managers (Kobasa, 1979), and caregivers (Bartone, Ursano, Wright, & Ingraham, 1989). Yet, until the present study, none of the hardiness literature reflects an exploration of a common anxiety complaint among individuals across age brackets and cultures—that is, public speaking anxiety.

Explorations into communication apprehension and public speaking anxiety have for the past three decades failed to explain why some individuals “develop a predisposition to avoid communication” or experience communication-based anxiety responses (Beatty, McCroskey, & Heisel, 1998, p. 197).

Instructors of public speaking courses employ several anxiety-reducing treatment strategies such as systematic desensitization (Wolpe, 1958; McCroskey, 1972), visualization therapy (Ayres & Hopf, 1987; 1989; Duff, Levine, Beatty, Woolbright, & Park, 2007), cognitive restructuring (Femouw & Scott, 1979), and skills training (Kelly, 1997). Textbooks for public speaking courses routinely include discussions on treatment approaches (Hamilton, 2006). While the treatments to date have been shown to effect positive change in the anxiety reported by some individuals, no treatment has been shown to be a certain and effective defense for this type of anxiety. Simply, some strategies work better for some students than others (Cronbach, 1957).

Currently, the scales utilized to measure public speaking anxiety are of moderate benefit to assess and treat public speaking anxiety. An additional measure, such as hardiness, could better identify the students who are likely to experience higher levels of public speaking anxiety than others. Results of the present study may inform instructors and administrators on improved methods of measuring public speaking anxiety thereby providing a means for developing effective strategies for treatment.

#### Basic Assumptions

As in most research studies, this investigation was predicated on a number of assumptions. The assumptions identified include the following:

1. Hardiness measures an individual's resilience to anxiety-arousing stimuli.
2. Hardiness is a relatively stable personality trait.
3. Individuals vary on measures of hardiness.
4. An effective strategy for reducing public speaking anxiety is currently unavailable.

5. An effective strategy for reducing public speaking anxiety is desired by the academic community.
6. Public speaking anxiety is not exclusively a personality trait.
7. Public speaking anxiety is episodic in nature.
8. Public speaking anxiety is treatable.

#### Limitations

This study was subject to a number of limitations. Because it was not possible to randomly select the participants in the study, an availability sample of undergraduate students enrolled in the Basic Speech Course was used. Availability sampling reduces the generalizability of the findings. The findings from this study are not applicable to students enrolled in other courses requiring an oral speech assignment. Additionally, the generalizability of results may be limited to a similar student population of traditional, four-year university students. The findings are not applicable to students of other levels such as K-12 or graduate standing. Furthermore, the findings are not applicable to students enrolled in institutions outside of the United States.

#### Delimitations

This study was delimited because data were only collected from students enrolled in the Basic Speech Communication course at a private, four-year, liberal arts university. The study was further delimited to include only the students enrolled in an 8-week session as this provided a much larger sample from which to recruit participants. This study did not include students who were enrolled in the semester-long, 16-week session. Further, the data were delimited to include only undergraduate

students. Lastly, the dependent variable was delimited to include only public speaking state anxiety rather than generalized communication anxiety.

### Definition of Terms

For the purpose of this study, the following terms were applied:

1. Hardiness. A constellation of closely-related personality constructs which includes one's dispositional tendencies of commitment to self and others, sense of control over external events, and perception of change as an agreeable challenge.
2. Communication anxiety. Generally, the anxiety experienced regarding communication of all types; also is referred to as communication apprehension.
3. Public speaking anxiety. Generally, the anxiety experienced when delivering a public speech.
4. Trait anxiety. A rather, stable personality characteristic regarding anxiety.
5. State anxiety. An episodic, temporary, transitory state which occurs in response to specific anxiety-producing stimulus.
6. Narrowbanding. Segmenting an event, such as public speaking, into specific phases whereby researchers can measure anxiety levels at specific points in time.
7. Milestones. Key points in an event, such as public speaking, which researchers demarcate as points of interest.
8. Habituation. A decline in anxiety, measured at various points, which

proceeds from an initial high point to a lower point; occurs given repeated exposure to the anxiety-arousing stimuli.

9. Sensitization. An elevated level of anxiety, measured at various points, which is followed by a peak in anxiety, then followed by a decline through the duration of the anxiety arousing event.

## CHAPTER TWO

### Review of the Literature

#### *Hardiness*

The literature reports decades of work by researchers who have conducted retrospective and prospective studies of the effects of stress on individual health. Specifically, research has largely emphasized the negative result of stress—that is one’s subsequent illness. Researchers have focused their explorations on answering the question: Why do some individuals become ill given stressful life events? Yet, one particular longitudinal study of stress among managers, in which some individuals remained healthy despite stressful conditions, resulted in the formulation of a new personality construct called hardiness.

Psychologists Kobasa and Maddi (Kobasa, 1979; Maddi & Kobasa, 1984) first introduced hardiness as a personality construct by describing it as a buffer in the relationship between stressors and illness. Specifically, one’s hardiness impacts, either negatively or positively, the individual’s future self. Rising out of existential psychology, the hardiness approach explains why some individuals, given life’s stresses, thrive while others succumb to illness. Hardiness answers the optimistic question: Why do some individuals remain healthy even given stressful life events?

#### *Early Approaches*

Several explanations regarding stressors and health prevailed prior to the development of the hardiness concept. Two are appropriate to this study as points of departure for the focus of hardiness. First, from behavioral psychology is Seligman’s (1975), *Helplessness: On Depression, Development and Death*, which addressed



learned helplessness as a response to one's environment. According to Seligman, given the situation where an individual's "outcome is independent of his responses, he learns that the outcome is independent of his responses" (p. 46). Seligman admits that this logic seems self-evident. Yet, this is the cornerstone of helplessness theory even though it "probably seems so obvious, to all but the most sophisticated learning theorist, as not even to need stating" (p. 46). Seligman's position explains that some individuals use a pessimistic explanatory style when faced with negative life events while others do not. If an individual learns that he or she is helpless against his environment regardless of his action or inaction, then learned helplessness occurs.

Also receiving widespread attention was Selye's biological approach (1976), *Stress of Life*, which addressed factors within the person rather than within the environment as indicated by Seligman. This approach focused on individual negative adaptations due to stress. Selye (1976) claimed that as stressful life events are encountered, humans engage in adaptive efforts in response to the events. However, these efforts to adapt to the stressor are somewhat faulty, thereby resulting in the individual's bodily resistance being lowered. Consequently, the probability of disease increases as resistance decreases.

### *Existential Approach*

Both of the early theories reported above approach stress and adaptation from the perspective of one's negative response style. The construct of hardiness, rooted in existential psychology, captures both the intrapersonal and environmental perspectives in explaining stress responses, but focuses on one's positive response style. From this existential approach, Maddi was interested in learning how people respond to stress

and anxiety. Specifically, this research emphasized the reasons why some individuals seem to thrive given stress while others become physically ill.

The existential perspective “involves centering upon the *existing* person and emphasizes the human being as he is *emerging, becoming*” (May, 1960, p. 11). Existential psychology is oriented on one’s future, rather than oriented on one’s past experiences, to explain present responses. Psychologists in this future-oriented approach view an individual’s motivation in life as being the “ongoing quest for the meaning and purpose of life” (Maddi, 2004, p. 280). More importantly, existentialists contend that individuals express their search for life’s meaning by the “inevitable decision-making process that underlies everything that we do in life” (p. 280). Whether individuals realize it or not, all behaviors in life reflect a decision made. According to existential psychology, all decision-making invariably takes one form—the individual chooses either the future or the past when arriving at a decision. In choosing the future, an individual maximizes the need for new information by accepting a new, unfamiliar direction (such as choosing to relocate for a new job). It is through this path that the individual finds meaningfulness in life’s purpose. In choosing the past, one holds onto that which is already known and familiar (such as avoiding a new job that requires new skills or relocation). If this path is selected, the individual may fail to create meaningfulness in life and boredom may ensue. Either path may cause some degree of anxiety or guilt, but it is in choosing the future that existential psychologists claim the individual finds and expresses strength.

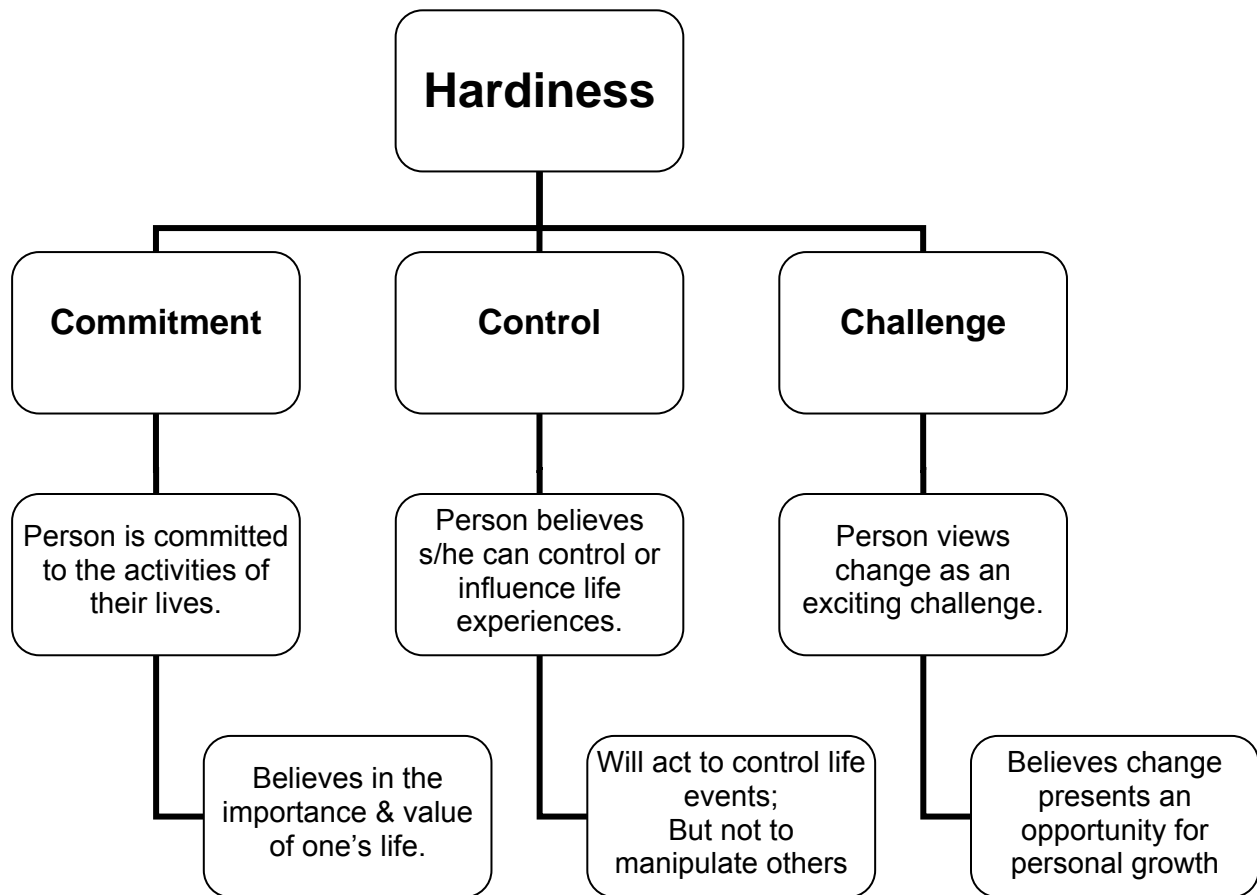
This strength was identified by existential theologian Kierkegaard as one’s faith (Maddi, 2004). Similarly Tillich, in *The Courage to Be* (1952), construed one’s strength

in choosing the future as “existential courage.” A common perspective in existential thinking is that “life is by its nature chaotic and threatening, and that persons live at their best if they react courageously” (Orr & Westman, 1990, p. 65). It is this existential courage that is the cornerstone of hardiness. This courage explains why a person makes a decision which involves a challenge in one’s future rather than one which fails to do so, thereby providing meaningful relationships in life. Ultimately, the image of the hardy person is one who is an “active, daring but circumspect and caring person” (p. 64).

#### *Hardiness Construct Formulation*

The ground-breaking study from which hardiness emerged occurred during a 12-year, longitudinal study of stress responses of managers at Illinois Bell Telephone (IBT) while Maddi (Maddi & Kobasa, 1984) was serving on the psychology faculty at the University of Chicago. At the outset of the IBT study Kobasa (1979), built on existing theories of stress, coping, and control. Also, Kobasa’s work incorporated Maddi’s (1976) categorization of major personality theories in which he identified fulfillment theories that have to do with future events. Kobasa considered the intersection of stress and coping with a future orientation and proposed that the hardy personality possessed three characteristics. Those who are hardy are expected to: 1) have an ability to feel involved with or be committed to the activities of their lives, 2) believe they can control or influence their life experience, and 3) view change as an exciting challenge. These key elements are commonly referred to as the 3 Cs of hardiness: commitment, control, and challenge. A concept map of hardiness and its three components is shown in Figure 1.

Figure 1. Hardiness concept map.



In the initial years of the IBT studies, Kobasa (1979) hypothesized that when individuals are stressed, those who feel committed are able to mitigate life stressors by calling on a belief system about one's sense of meaningful purpose in life. Committed individuals feel involved with others to a degree that they feel they can call upon others for assistance in demanding times. Second, those who perceive a greater sense of control in their lives, such that they can reasonably influence life events, report being healthier than those who feel powerless. Last, those individuals who perceive change as a challenge rather than a threat are hypothesized to remain healthier than those who are unwilling to explore new experiences or a change in their environment. Kobasa utilized several frequently used scales (e.g. Social Readjustment Rating Scale, the Seriousness of Illness Survey, the Internal-External Locus of Control Scale, and the Alienation Test) to measure the two variables of stress and illness. The resulting data had a significant Pearson product moment correlation of .24 between stress and illness (Kobasa, 1979). This finding, though a reportedly weak correlation, was consistent with those reported in the literature of the time regarding stress and subsequent illness.

At the mid-point in the 12-year IBT study, the United States telephone industry, under federal mandate, was deregulated. Within one year, between 1981 and 1982, IBT had reduced its employee base from 26,000 to 14,000 (Maddi, 2004). In the years following deregulation, two-thirds of the sample of 450 managers reported negative presentations of stress including suicides, violence, divorce, depression, anxiety, heart attack, and stroke. Conversely, the remaining one-third reported quite the opposite—they claimed to feel enlivened. They were experiencing deepening relationships, and were receiving rewarding upward movement either with IBT or another employer

(Maddi, 2004). These healthy outcomes, rather than illness outcomes for a large number of individuals, were the basis for theorizing the personality construct of hardiness. That is, for some individuals one's existential courage, or hardiness, reduces the tendency to perceive events in life as stressful thereby avoiding the negative physiological effects of stress in one's future.

### *Hardiness Research*

In the past three decades, hardiness has been shown to have a relationship with effective response styles in two manners. First, hardiness has shown a moderating effect in the relationship between stresses and illnesses. By moderating, or buffering negative life events, individuals view life events as less stressful (Rhodewalt & Zone, 1989; Bartone, 1999; Kobasa, Maddi, & Puccetti, 1982; Orr & Westman; 1990). Second, hardiness mediates stress and illness by buoying the way that those high in hardiness cope. Hardy individuals cope more effectively with life events (Maddi, 1999; Maddi & Kobasa, 1984). In short, hardy individuals both perceive life stressors as not as stressful as others report, and they adapt more effectively given the stressors.

Additionally, research of military bereavement personnel found that individuals high in both hardiness and social support reported a buffering effect on work stress (Bartone et al., 1989). In their study, a scale was developed based on the instrument used in early work (Kobasa, 1979). This measure, the Dispositional Resilience Scale, supports the hypothesis (Maddi & Kobasa, 1994) that hardiness is an index of mental health (Ramanaiah & Byravan, 1999).

Hardiness has not only been shown to have helped individuals cope with stressful events, but, in a more future-oriented perspective, it has been shown also to

increase an individual's task effectiveness (Sansone, Wiebe, & Morgan, 1999; Wiebe & Williams, 1992). Further, in one research study, high school basketball players completed a hardiness measure in the summer before the winter basketball season. At the conclusion of their basketball season, their hardiness score was found to predict five of six categories of game performance statistics. The only category in which hardiness did not achieve statistical significance in the study was on free-throw accuracy. The researchers explained that the only time in which the game is not rather chaotic is at the free-throw line (Maddi & Hess, 1992).

Additionally, in officer-training school, hardiness was found to predict participant successful completion rates (Westman, 1990). In the study, the Israeli Defense Forces officer cadets who reported higher levels of hardiness also reported experiencing less stress. Beyond self-reports, this study also utilized the scores of objectively scored rigorous performance outcomes by academy instructors. Further, performance appraisals during the officers' year-end review found that hardiness predicted performance both during training and through the first year on the job.

Furthermore, Maddi has developed an intervention program in which individuals are assessed for hardiness and, subsequently, receive hardiness training. Results are reported to have improved job satisfaction while reducing negative stress reactions such as anxiety and blood pressure (Maddi & Khoshaba, 1994). Of particular significance to the present study, Maddi and others have provided hardiness training programs for "several 2- and 4-year colleges offering hardiness assessment and training as regular credit courses" (Maddi, 2002, p. 182).

While hardiness is not a new construct in the psychological literature, it is a new avenue of inquiry in the communication literature. Likewise, explorations of how individuals cope and adapt to communication anxiety is not a new line of inquiry in the communication literature—however with regard to hardiness, it is. Specifically, the anxiety encountered during a public speaking event, and the degree to which individuals are impacted by the anxiety, given hardiness, are of interest in the present study. A summary of communication apprehension research is presented next.

### *Communication Apprehension*

#### *Background*

An individual's communication skills pervade all dimensions of life. The act of communicating allows individuals to connect with one another, satisfy a need for belonging, seek and exchange information, and both give and receive social support. Furthermore, in the academic environment, these communication activities are considered imperative for student success (McCroskey & Richmond, 2006; Pascarella, & Terenzini, 2005; McCroskey, Booth-Butterfield, & Payne, 1989; Tinto, 1987; & Astin, 1985). Yet, despite the pervasiveness of communication, and the drives and needs it satisfies, some individuals find communicating to be a source of apprehension (McCroskey, Daly, & Sorenson, 1976).

McCroskey has described communication apprehension as “an individual's level of fear or anxiety associated with either real or anticipated communication with another person” (1977, p. 78). It is a broad-based anxiety related to the act of communicating and is reported to be experienced, in some degree, by a large number of people (McCroskey et al., 1976). Those who experience high levels of communication anxiety



seek to avoid communication, report emotional distress regarding communication, and are perceived, both by others and themselves, to be less competent and less successful (McCroskey & Sheahan, 1978; McCroskey, Booth-Butterfield, Payne, 1989).

### *Higher Education Implications*

Communication apprehension has serious implications for students in higher education. Apprehensive individuals tend to avoid engaging in behaviors that facilitate success such as asking questions during class, meeting with instructors, and collaborating with peers. Students who fail to adopt academically supportive behaviors due to high communication apprehension are more likely to drop out of college than their peers (McCroskey et al., 1989). Similarly, in the higher education literature, two well known theories of college impact state that student involvement is paramount to student success and retention. Astin's (1985) Theory of Involvement states simply that students learn by becoming involved. The individual student plays a central role in determining the extent of growth experienced according to the nature of involvement with the their institution (Pascarella & Terenzini, 2005). Tinto's Theory of Student Departure (Tinto, 1987) contends that students enter postsecondary education with various personal and academic characteristics including predispositions regarding college attendance and goals. It is the students' interactions with the institution and its representatives, such as faculty and peers, which influence integration with the institution. Positive interactions are presumed to lead to better integration thereby reducing student attrition. Thus, a student's communication apprehension is of particular importance in courses where oral communication tasks are a basis for evaluation.

### *Early Approaches*

A large body of research addresses public speaking anxiety. In early studies, communication apprehension was measured as a single, uniform response occurring either physiologically, psychologically, or behaviorally. Research investigations were characterized by both neurobiological and psychological measures which explored communication anxiety as a static personality-type variable. This trait approach (that is, the anxiety is due to a rather stable personality characteristic) failed to account for a change in anxiety such as that experienced with a specific event such as when orally addressing a large audience. The dimensional nature of anxiety was uncovered when psychologist, Spielberg (1966) distinguished social anxiety as a manifestation of either a trait or a state. Accordingly, McCroskey (1997) notes: "Human behavior is the product of at least two interacting factors: characteristic predispositions of the individual (traits), and situational constraints on behavior at a given time (states). Individual traits are relatively enduring over time, whereas states are highly variable" (p. 192). Anxiety experienced as a state response, in contrast to a trait, is an episodic, temporary, transitory state which occurs in response to a specific stimulus.

### *Trait Anxiety*

Generally, communication apprehension as a trait is broadly categorized as the communication anxiety which occurs within the speaker when interacting with a small group of people, large group of people, and with just one other person. Researchers have investigated communication apprehension as a trait in which a person's biological makeup is believed to determine one's personality traits (Wrench, Brogan, McCroskey, & Jowi, 2006; Kelly & Keaten, 2000; Beatty, McCroskey, & Heisel, 1998; McCroskey et

al., 1976; Beatty, 1988; Behnke & Sawyer, 1998). Recent attention has been directed toward the role one's biology plays in explaining both personality and human behavior (Beatty, McCroskey, & Heisel, 1998). McCroskey et al. (1976) first identified personality correlates of individuals with communication apprehension. In general, those with high levels of communication apprehension were found to be negatively correlated with general measures of personality including emotional maturity, confidence, self-control, tolerance for ambiguity, and need to achieve.

Some researchers recently have taken a communibiological perspective in explaining a person's neurobiological structure as responsible for communication behaviors (McCroskey & Beatty, 2000). The communibiological paradigm draws on the work of Eysenck (1986) who asserts that three emotional systems are represented by communicative behaviors: extraversion, neuroticism, and psychoticism. The communibiology paradigm is in agreement with other dispositional approaches which contend that a person's behavioral differences are largely a result of neurobiological functioning (Beatty et al., 1998). Important to this line of research, however, is that, contrary to basic assumptions about a genetic-based model, people can—and do—change with proper cognitive information. Therefore, given the confines of a biological model, researchers assert that change, which is based on something other than one's temperament, can occur (McCroskey & Beatty, 2000).

Like the communibiological paradigm suggests, a person's trait does not account entirely for all behaviors. Some situational factors, that are transitory in nature, also play a role in a person's disposition. Of particular importance to the present study is the

literature which has investigated the situational context as a factor in communication apprehension.

### *State Anxiety*

Scholars have also focused communication apprehension research on an individual's state anxiety. These measurements have largely included three types of ratings: 1) the speaker's own perception of anxiety; 2) observer ratings of perceived speaker anxiety; and 3) physiological arousal levels.

Researchers contend that to measure the speaker's own perception of anxiety, the use of self-report measures is an appropriate approach to empirical studies. Self-report devices, when used to obtain information about the individual, are a preferred approach if the person both knows the answer and is willing to tell the truth (McCroskey, 1997). Self-report measures are the most commonly used ones for measuring communication apprehension. This approach is well suited to investigations into a person's perceived anxiety in that, logically, researchers argue that the best method of finding out something about a person is to ask (McCroskey, 1997). The researcher must proceed carefully, however, such that the respondent is not inclined to provide false answers due to either a lack of self-awareness or a need to present a socially desirable image. Empirical reports support that notion that: "Self-report measures are amenable to either trait or state concerns with communication apprehension. Respondents can report their general feelings, their feelings in broad categories of communication situations, and their feelings in specific situations with equal ease" (McCroskey, 1997, p. 197).

Several variables which affect the response style of an individual's public speaking state anxiety have been explored. As mentioned earlier, one factor which is relevant to the present study is a speaker's trait, or physiological predisposition, (Daly, McCroskey, Ayres, Hopf, & Ayres, 1997; Horvath, 1995). Also of importance is a speaker's pattern of anxiety, explained below (Winters, Horvath, Moss, Yarhous, Sawyer, & Behnke, 2007; Roberts, Finn, Harris, Sawyer, & Behnke, 2005; Fisher, Finn, McCrary, Sawyer, & Behnke, 2004; Horvath, Hunter, Weisel, Sawyer, & Behnke, 2004; Sawyer & Behnke, 2002; Behnke & Sawyer, 2001).

*Narrowbanding physiological responses.*

In an early investigation of state anxiety, an individual's physiologic arousal was explored (Behnke & Carlile, 1971). Speakers' heart rates were recorded at specific periods during the speech—before, during, and after. A well-delineated pattern of anxiety responses emerged from the data at four periods in time. In the first period, called anticipation, speakers were found to experience a heart rate slightly higher than resting level just prior to delivering the speech. The second period, confrontation, measured heart rate the moment the speaker addressed the audience. Here speakers experienced a more rapid heart rate than in the anticipation phase. At the third phase, adaptation, heart rate was found to have decreased to a level somewhat above the pre-speech measurement. Finally, in the last phase, release, heart rates had returned to a level at or below the pre-speech measurement.

*Narrowbanding psychological responses.*

In a similar, subsequent investigation into psychological responses of state public speaking anxiety, researchers utilized the State-Trait Anxiety Inventory (STAI) which is

designed to measure state anxiety in a variety of situations (Spielberger, Gorush, & Lushene, 1970). Again, a pattern of anxiety responses emerged in which anxiety peaked before the presentation and then declined throughout the speech and post-speech periods.

Some scholars have continued to focus public speaking research on the speaker's state anxiety (Behnke & Sawyer, 2004; Pörhölä, 2002; Behnke & Sawyer, 2001; Freeman, Sawyer, & Behnke, 1997). Behnke & Sawyer (1998) measured speakers' self-reported anxiety at different points of time during a public speaking assignment. From these key points, or *milestones*, variations in the level of anxiety were revealed. This narrowbanding approach segmented the speaking event into four phases: 1) anticipation—one minute before; 2) confrontation—first moment addressing the audience; 3) adaptation—last minute of the speech; and 4) release—immediately after the conclusion of the speech. Subjects reported anxiety levels similar to that uncovered in earlier physiological research, with the most anxious milestone occurring at the anticipatory phase immediately before delivering the speech. Thus, researchers have determined that not only is public speaking anxiety experienced differently among individuals, but the level of anxiety fluctuates throughout the duration of the experience (Behnke & Sawyer, 2004; Behnke & Sawyer, 2000; Behnke & Sawyer, 1999; Behnke & Sawyer, 1998).

#### *Habituation and sensitization.*

According to one theoretical explanation of an individual's state anxiety, two types of responses occur when a person experiences repeated exposure to an anxiety-arousing stimuli. Either an individual develops a less anxious response given repeated

exposure to a stimulus, or a more anxious response develops (i.e. phobic responses either get better or worse). Gray and McNaughton (2000), sought to explain this phenomenon as a biological process in which they identified *habituation* as the process whereby one's anxiety decreases over time given repeated or prolonged exposure to the stimuli. Alternately, *sensitization* occurs when an individual experiences an increase in anxiety given repeated exposure.

In recent narrowband public speaking anxiety research, two types patterns of psychological anxiety have been identified (Behnke & Sawyer, 2004; Behnke & Sawyer, 1999). In one pattern, habituation, a speaker's state anxiety peaks during the anticipation phase and then decreases during confrontation and the remainder of the speech. Behnke and Sawyer (2001) report that speakers who report anxiety according to this pattern are characterized by a monotonic decelerating pattern, as shown in Figure 2. Conversely, with the other pattern, sensitization, a speaker's state anxiety rises from resting level at the anticipation phase, peaks at confrontation and then declines throughout the duration of the speech. Speakers who fit this description are characterized by a quadratic V-shaped pattern. Figure 3 presents the characterization of this pattern.

Figure 2. Habituation pattern of public speaking state anxiety.

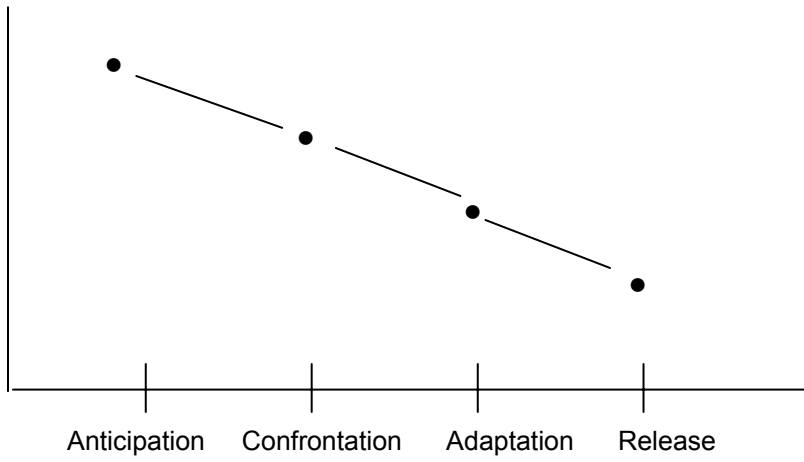
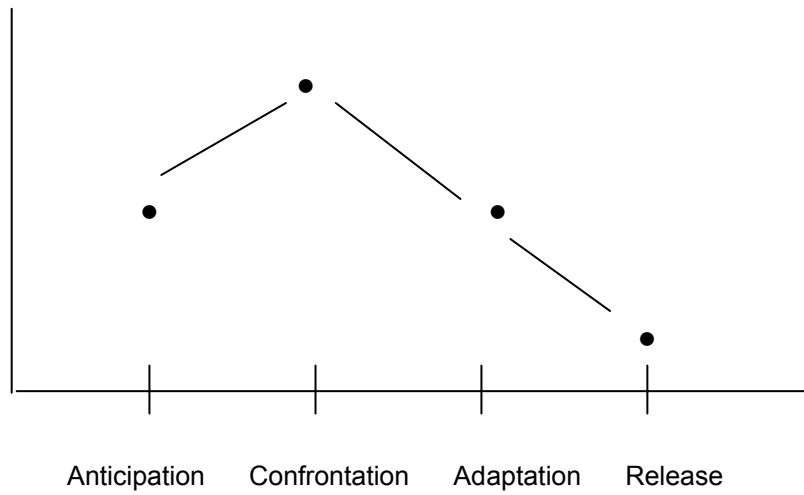


Figure 3. Sensitization pattern of public speaking state anxiety.





Further, college students more frequently report the habituation sequence when delivering a public speech in that they do experience a great deal of anxiety during the anticipation phase, but their anxiety level decreases throughout the remainder of the speech. A smaller number of college students report experiencing sensitization in which anxiety rises at some point during the public speech. This experience is certainly a less desirable public speaking experience.

### *The Current Study*

A common complaint among public speakers is a temporary state of anxiety. This is both an empirical and anecdotal finding across cultures suggesting both a dispositional and situational explanation of public speaking anxiety. Communication researchers agree that public speaking state anxiety is experienced differently between individuals. Additionally, within the individual, state anxiety is experienced in varying levels even during the speech.

In the present study, the trait personality characteristic of hardiness was measured. Likewise, communication apprehension as a dispositional characteristic was measured. Next, public speaking state anxiety which participants reported experiencing while delivering a public speech was measured.

Students in the present study were recruited from a basic communication course. College students across campuses are commonly required to complete a basic communication course to satisfy institutional core curriculum. This is often called, simply and appropriately, the Basic Communication Course. Commonly, the course is defined as the communication course which is either required or recommended for all or most undergraduates (Morreale, Hugenberg, & Worley, 2006). The content of the

course traditionally varies between three broad categories. “On some campuses, what is called the basic course may be solely the public speaking orientation. On other campuses, the basic course may be an interpersonal class...” (Morreale et al., 2006, p. 417). Oftentimes, though, the basic course is a hybrid model rather than exclusively either a public speaking or interpersonal model. In the hybrid model, the content covers both interpersonal and group communication in addition to the public speaking component. In this model, students both learn communication theory and practice the skills related to each of the three components of interpersonal, group, and public speaking. Commonly, the public speaking component of a hybrid course requires at least two speaking presentations including an informative and a persuasive presentation. This is the case for the present study participants.

## CHAPTER THREE

### Method and Procedures

#### *Design*

This study was a quasi-experimental, quantitative design (Campbell & Stanley, 1966; Gall, Borg & Gall, 2006). Two independent variables were examined: hardiness and public speaking trait anxiety. The dependent variable was public speaking state anxiety.

#### *Human Subjects Approval*

Prior to beginning this study, a request was made to the cooperating institution Institutional Review Board for permission to use human subjects. Upon receiving approval, a request was made to the University of North Texas Institutional Review Board for approval of the project. Following approval of the study, participants were recruited. All participants were required to sign a consent form as a condition for involvement in the study (see Appendix A).

#### *Participants*

Students enrolled in the Basic Speech Communication course at a medium-sized, private, four-year liberal arts university participated in the study. The course fulfilled an undergraduate, university requirement of oral communication competency and, consequently, students represented a broad range of declared and undeclared majors. Multiple sections of this course are offered twice each semester: during the first 8 weeks and, again, during the second eight weeks of a standard 16-week semester. Students in all sections of the Basic Speech Course in an 8-week term were recruited as volunteers. The 8-week class sections provided a substantially larger

population from which to draw a convenience sample. This strengthened the study by recruiting from a larger group since not all students enrolled were expected to volunteer to participate in the study. Participants were not compensated in any way.

A total of 156 students volunteered to submit the completed scales and participate in the research study. This accounts for more than 60 percent of the students enrolled in the 8-week Basic Speech Course. Six participants completed scales that were not useable. Therefore, a total sample size of 150 participants was obtained ( $n=150$ ).

### *Instruments*

A total of three instruments were administered to the participants. To measure the two independent variables of hardiness and trait communication anxiety, two scales were utilized as outlined below. One measure of public speaking state anxiety, completed multiple times, was employed to measure the dependent variable of public speaking state anxiety.

#### *Hardiness*

One of the measures used in this study was utilized to operationalize the independent variable of hardiness. A modified version of the short version of the hardiness measure developed by Bartone et al., (1989) called the Dispositional Resilience Scale (DRS) was employed. This is a 30-item scale which includes statements “about life that people generally feel differently about” (p. 327). The scale is comprised of three subscales which measure the three constructs of hardiness: commitment, control, and challenge. The instrument authors provide a short version (30 items) of an original 45-item scale.

A principal components factor analysis in the development of the DRS revealed the three factors of commitment, control, and challenge confirming the three-component model of hardiness as proposed by Kobasa (1979). The DRS has reported appropriate levels of convergent validity and high internal consistency for the composite hardiness scores. The Cronbach alpha coefficient is reported as .85 for the composite score of hardiness (Hanton, Evans, & Neil, 2003).

The short version of this instrument includes three 10-item subscales. The scale authors caution that the subscales should not be used individually by investigators who wish to measure a particular component of hardiness such as only commitment, control, or challenge. Rather, the use of all three subscales should be utilized in order to yield the composite score. However, Bartone et al. (1989) note that the subscale scores are appropriate to use for instructive purposes. Following the caution of the scale authors, data was collected for the 30-item scale and each subscale score was computed. A composite hardiness score was derived from the subscale scores. Scores for: 1) composite hardiness measure; 2) commitment subscale; 3) control subscale; and 4) challenge subscale were computed and analyzed such that types of hardiness strength or weakness according to subscale could reveal how public speaking is affected by hardiness.

## *Public Speaking and Communication Anxiety*

### *Communication anxiety.*

A second scale used in this study was McCroskey's (1982) Personal Report of Communication Apprehension-24 (PRCA-24). As in the present study, this instrument is widely employed to operationalize trait communication anxiety. Beatty (2004) reports that this iteration of the original PRCA is the most popularly used scale to measure contextual trait communication anxiety. Based on an earlier 30-item scale which measures public speaking trait anxiety exclusively, this scale measures communication apprehension more broadly. Respondents are asked to respond to statements on the 24-item, Likert-type instrument pertaining to communication apprehension across four contexts: small group, meeting, and interpersonal (dyad), and public speaking. Each context subscale presents six items. Instructions ask the respondent to report their agreement to statements about their feelings about communicating with others (e.g. "I am tense and nervous...", "I am very calm and relaxed..."). The subscale of particular interest to the present study is public speaking (e.g. "I have no fear of giving a speech." "...I get so nervous I forget facts...").

All context subscales and the total score were calculated and analyzed for full exploration of the public speaking and communication anxiety phenomena. The instrument is internally consistent. Reliability estimates for all 24 items range from .93 to .95 (McCroskey, Beatty, Kearney, & Plax, 1985). Several studies support the construct and criterion-related validity for the instrument (Rubin, Palmgreen, & Sypher, 2004). Factor analysis consistently finds this measure to be comprised of four factors of generalized-context communication apprehension.

Typically, the mean score for public speaking anxiety is somewhat higher than for each of the other subscales. Summing all four context subscores yields a total communication anxiety score ranging from a possible minimum score of 24 to a high of 120. According to the scale author, a high total score is >80.

#### *Public speaking anxiety.*

The A-State portion of the State Trait Anxiety Inventory (STAI; Spielberger, Gorush, & Lushene, 1970) is the third scale utilized in this study. This inventory was used to operationalize the dependent variable of public speaking state anxiety. The A-State STAI form is a widely used 20-item scale with considerable evidence of validity (Spielberger et al., 1970). It is the most frequently used measure of empirical research on public speaking anxiety published in communication journals. Statements ask respondents to describe how they felt (e.g. “confident,” “frightened”) during their public speech. The inventory has consistently reported high reliability and has performed according to theoretical expectations (Beatty, 1988; Beatty & Friedland, 1990; Behnke & Sawyer, 2000, 2001). The scale authors report coefficients for internal consistencies for the State scale as .93 (Spielberger, 1983).

#### *Procedures*

All students enrolled in the Basic Speech Course were eligible to participate in the study during one 8-week term. Prior to the study, and as part of the class requirements, all students were required to complete some class activities and assignments for a grade. One such assignment was to deliver a public speech in class. Then, following the speech each student was required to complete multiple copies of the A-State STAI reflecting on their own public speaking anxiety at various points of

time during the speech. All students were required to complete the forms as part of a reflective activity in the course.

Students were then recruited for participation in the present study. All volunteers were required to complete the Signed Consent Form prior to participating. After signing the consent form, participants were asked to complete a packet of scales. Included in the packet were the demographic Student Questionnaire form and the two scales for measuring the personality traits of hardiness (DRS) and communication apprehension (PRCA-24). The teaching assistant for each section distributed packets to students and then collected the completed participant packets during the early weeks of the 8-week term.

The dependent variable public speaking state anxiety was measured using the State-A version of the STAI following the first public speaking assignment as mentioned above, prior to students being recruited for study participation. (This scale was completed after each participant delivered the first required speaking assignment.)

To complete the STAI, instructions followed the milestone procedure outlined by Behnke and Sawyer (1998), where each participant completed the STAI a total of five times for each of four key points (milestones) in the speech. These milestones were defined as the four phases of the speech according to the following: anticipatory (one minute before the speech), confrontation (the first minute of the speech), adaptation (the last minute of the speech), and release (the one minute immediately following the conclusion of the speech). A fifth inventory was completed by participants regarding their overall level of anxiety during the speech (e.g. "Overall, how did you feel when presenting the speech?").



All STAI forms were completed following the conclusion of the speech. Participants were not interrupted during the speech to complete the forms at the milestones as any break in the speech would contaminate the anxiety results. Only study participant volunteers submitted the completed scales to the teaching assistant for research purposes. Therefore, in addition to completing the data collection packets, participants were also asked to submit the earlier completed STAI.

#### *Analysis of the Data*

Data were analyzed using SPSS 14.0. A visual inspection of the raw data for extreme scores or anomalies was conducted. Subjects who did not complete the Dispositional Resilience Scale were deleted from the data set (1%). Significance levels were set at  $\alpha = 0.05$ .

## CHAPTER FOUR

### Results

#### *Demographics*

Demographic data were collected from the study participants using the Student Questionnaire (Appendix B). The respondents were largely female (62%), compared to males (38%). The majority of the participants were classified as freshmen (59.3%). Sophomores represented the next largest group (30.7%). This combined group represented 90 percent of the participant group. Juniors and seniors together represented the remaining 10 percent. The age of the participants represents a traditional student population. The age range was 17 – 26 years with a mean age of 18.9.

Table 1 contains descriptive statistics for the sample demographic variables collected from the Student Questionnaire. In a course in which student evaluation is based to some degree on public speaking assignments, demographic characteristics are of particular importance for instructors who must address the learning needs of a class. The demographic data presented here may aid instructors such that they can anticipate the number of students who have limited higher education experience and, by extension, estimate the number of those who have limited public speaking experience.

Table 1

Demographic Characteristics

Gender	Frequency	Percent
Males	57	38.0
Female	93	62.0

Classification	Frequency	Percent
Freshman	89	59.3
Sophomore	46	30.7
Junior	7	4.7
Senior	8	5.3

Age	Frequency	Percent
17	2	1.3
18	66	44.0
19	54	36.0
20	15	10.0
21	9	6.0
22	3	2.0
≥ 23	1	0.7

Total	150	100.0
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### *Hardiness*

Participants in this study completed the 30-item version of the Dispositional Resilience Scale to measure the personality construct of hardiness ( $n=150$ ). As mentioned earlier, initially, raw data were visually inspected for anomalies. Additionally, any participant who did not complete the DRS for the hardiness measure was eliminated from the data set. Hardiness items were scored according to the scale instructions to derive subscale scores for commitment, control, and challenge. The composite score of hardiness was derived by summing all subscale scores.

Exploration of the data for extreme cases and outliers was performed next. Only six participants were purged from the set. Following cleaning of the data, a check for univariate normality was conducted using a Q-Q Plot which indicated normally distributed data.

The means and standard deviations for this measure were as follows: commitment 37.86 (4.33), control 35.89 (3.49), challenge 31.34 (4.56), and composite hardiness 105.1 (8.29). The scores for the composite hardiness ranged from 88 to 136. The means, medians, standard deviations, and range of scores are listed in Table 2. Cronbach alpha for internal consistency were as follows: Commitment .94, Control .94, Challenge .96, and Composite .84.

Table 2

Hardiness Composite and Subscale Means, Medians, *SD*, Scores, and Range

Scale	Mean	Median	<i>SD</i>	Minimum	Maximum	Range
Commitment	37.86	37	4.33	26.00	50.00	24.00
Control	35.89	36	3.49	28.00	47.00	19.00
Challenge	31.34	31	4.56	21.00	44.00	23.00
Hardiness Composite	105.1	105	8.29	88.00	136.00	48.00

For the purpose of full reporting the hardiness variable, Table 3 presents a frequency distribution of the DRS composite score revealing a rather even distribution of scores among participants.

Table 3  
Frequency Distribution of Dispositional Resilience Scale

Composite Score	Frequency	Percent
88	1	.7
89	1	.7
90	2	1.3
91	2	1.3
92	3	2.0
93	4	2.7
94	2	1.3
95	4	2.7
96	5	3.3
97	5	3.3
98	5	3.3
99	9	6.0
100	2	1.3
101	3	2.0
102	9	6.0
103	4	2.7
104	11	7.3
105	6	4.0
106	11	7.3
107	8	5.3
108	4	2.7
109	5	3.3
110	6	4.0
111	8	5.3
112	3	2.0
113	5	3.3
114	4	2.7
115	3	2.0
116	4	2.7
117	3	2.0
120	3	2.0
121	1	.7
123	2	1.3
127	1	.7
136	1	.7
Total	150	

### *Hardiness and Public Speaking State Anxiety (STAI)*

STAI items were summed according to the scale instructions. The STAI has traditionally reported high internal consistency. Following this, the bivariate relationship between the dependent variable hardiness and the independent variable of public speaking state anxiety using the overall score was explored (“Overall, how you felt during your public speech”) using a Pearson product moment correlation. Alpha reliability was .93. The DRS composite score and the STAI overall score were not statistically significantly correlated:  $r = -.045$  ( $p > .05$ ).

Additionally, each of the four milestones of public speaking state anxiety was correlated with hardiness. None of the four STAI reports completed at the milestone points (anticipation, confrontation, adaptation, and release) were statistically significantly correlated ( $p > .05$ ). For each measure (anticipation, confrontation, adaptation, and release), alpha reliability was: .94, .94, .96, and .96, respectively. Table 4 summarizes the correlation and shared variance for each of the pairs.

Table 4  
Correlation of Hardiness and Public Speaking State Anxiety

Milestone	Correlation	$r^2$
Anticipation	-.041	.002
Confrontation	-.070	.005
Adaptation	.057	.003
Release	.032	.001
Overall Score	-.045	.002

### *Hardiness and Public Speaking Trait Anxiety (PRCA-24)*

PRCA-24 items were scored on each subscale and summed to achieve the total score. Alpha reliability for internal consistency was .86. For the first research question, student responses to the public speaking items were of interest. Therefore, the bivariate relationship between the dependent variable hardiness and the independent variable public speaking trait anxiety, using only the public speaking subscale score, was explored using a Pearson product moment correlation. No statistically significant relationship was found using only the public speaking subscale. The DRS composite score and the PRCA-24 public speaking score correlation was  $-.152 (p > .05)$ .

### *Hardiness and Communication Anxiety (PRCA-24)*

To more fully explore communication anxiety beyond the narrower confines of public speaking anxiety, each of the subscales and the total PRCA-24 score was considered. Alpha reliabilities for each remaining subscale (Group, Meeting, and Interpersonal) were: .90, .91, and .83. Alpha reliability for the PRCA total score, achieved by summing all subscales, was .86. Means, standard deviations, and frequencies of each subscale are summarized in Table 5.



Table 5

## PRCA-24 Means, Medians, Standard Deviations, and Frequency

Scale	Mean	Median	Standard Deviation
Public Speaking	16.21	16	4.5
Group	14.17	14	4.49
Meeting	15.69	15	4.67
Dyad	14.06	14	3.38
Total	63.75	61	13.73

A correlation of the DRS score and the PRCA-24 total score was also conducted. A statistically significant relationship was found for the total score  $-.273$  ( $p < .001$ ). The negative relationship indicates that as hardiness increases, communication apprehension decreases. This was an expected finding in that both scales are measures of stable personality traits. High hardiness scores reflect an individual's resilience to stress. Low communication apprehension scores reflect low levels of reported apprehension. Therefore, as one's hardiness increases, communication anxiety decreases.

Additionally, a Pearson product moment correlation of each of the remaining three subscales (group, meeting, and interpersonal) of the PRCA-24 was run with hardiness. Unlike the public speaking subscale, each of the three subscales was found to be significantly correlated. Group  $-.236$  ( $p = .005$ ), Meeting  $-.177$  ( $p = .036$ ), Dyad  $-.037$  ( $p < .001$ ). This negative relationship indicates that as hardiness increases, communication apprehension with small groups, meetings, and with one other person

decreases. Interestingly, no statistically significant relationship was revealed for the variable of interest: public speaking anxiety. Table 6 summarizes the hardiness correlations of all PRCA-24 subscales.

Table 6

Correlation of Hardiness and Communication Anxiety

Comm. Apprehension	Correlation	<i>p</i>	<i>r</i> <sup>2</sup>
Public Speaking	-.139	.100	.01
Group	-.230**	.006	.06
Meeting	-.175*	.037	.03
Dyad	-.304**	.000	.09
Total	-.233**	.006	.05

\**p*<.05

\*\**p*<.01

Data were further analyzed by hardiness subscale to uncover possible trends among the communication anxiety subscales given the statistically significant results obtained using the composite hardiness score. Given that each of the hardiness subscale scores reflects a unique factor, teasing out the relationship among the variables could be instructive.

A bivariate correlation of the hardiness commitment subscale and communication apprehension subscales revealed one statistically significant relationship. Commitment and interpersonal communication (dyad) were found to be negatively correlated. This supports the commitment construct as pertaining to a person's engagement with others, particularly regarding social support. The results are summarized in Table 7.

Table 7

## Correlation of Hardiness Commitment and Communication Anxiety

Comm. Apprehension	Correlation	<i>p</i>	<i>r</i> <sup>2</sup>
Public Speaking	.108	.203	.01
Group	-.073	.387	.01
Meeting	-.057	.501	.01
Dyad	-.219*	.013	.05
Total	-.088	.302	.01

\**p*<.05

A bivariate correlation of the hardiness control subscale and communication apprehension subscales revealed a statistically significant relationship for public speaking (*p*<.01) and interpersonal (*p*<.05). Again, as with the commitment subscale, a negative, statistically significant relationship was revealed between the subscale and interpersonal communication. However, a positive statistically significant relationship was detected between hardiness control and public speaking. Results are summarized in Table 8.

Table 8

## Correlation of Hardiness Control and Communication Anxiety

Comm. Apprehension	Correlation	<i>p</i>	<i>r</i> <sup>2</sup>
Public Speaking	.232**	.006	.01
Group	-.086	.309	.06
Meeting	-.131	.123	.03
Dyad	-.196*	.020	.09
Total	-.068	.426	.05

\**p*<.05\*\**p*<.01

A bivariate correlation between the hardiness challenge and communication apprehension subscales revealed a statistically significant relationship for all subscales with the sole exception of public speaking: Group ( $p < .01$ ), Meeting ( $p < .05$ ), Interpersonal ( $p < .05$ , and Total  $p < .01$ ). The Group relationship contributes the most to the statistically significant total score. Table 9 reports the results of these relationships.

Table 9

Correlation of Hardiness Challenge and Communication Anxiety

Comm. Apprehension	Correlation	$p$	$r^2$
Public Speaking	-.026	.764	.00
Group	-.288**	.001	.08
Meeting	-.169*	.046	.03
Dyad	-.210*	.013	.04
Total	-.293**	.000	.09

\* $p < .05$

\*\* $p < .01$

*Hardiness Groups (High and Low) and Public Speaking State Anxiety (STAI)*

Using the STAI scores on five points of a public speech, an Analysis of Variance (ANOVA) was conducted to determine if individuals who are high in hardiness and those who are low in hardiness experience different levels of public speaking state anxiety.

As suggested by Winters et al. (2007), a median-split of composite hardiness scores was used to divide participants into a grouping variable of hardiness resulting in high ( $n=78$ ) and low ( $n=72$ ) groups. Following a Levene's Test for Equality of Variances to check for assumptions of homogeneity of variance, this method was rejected due to insufficient homogeneity calculations ( $p < .05$ ).

A more sensitive approach to obtaining the grouping variable was conducted next as suggested by Ramanaiah & Byravan (1999). Again, median scores on the three subscales (commitment, control, and challenge) were used to select participants for the grouping variable. However, in this approach unlike the median-split which employed the composite hardiness score, the High Hardiness group was obtained by selecting only the participants who scored above the median on all of the three subscales: 37, 36, and 31, respectively ( $n=35$ ). Likewise, the Low Hardiness group was obtained by selecting only those participants whose scores were below the median score on all three subscales ( $n=22$ ). The variances using this method of obtaining the grouping variable are assumed to be homogeneous following a Levene's Test for Equality of Variances ( $p>.05$ ). Therefore, the grouping variable was obtained ( $n=57$ , 38%) from the larger sample. Table 10 represents the hardiness subscale results for this split sample approach.

Table 10

High / Low Groups for Commitment, Control, and Challenge

Scales	Median Score	High on All Subscales	Low on All Subscales	Median Score
Commitment	37	} $n=35$	$n=22$ }	37
Control	36			36
Challenge	31			31

ANOVA, using hardiness as the independent variable and public speaking anxiety as the dependent variable, revealed that public speaking anxiety did not vary as a function of hardiness. Table 11 contains a summary of the ANOVA results.

Table 11

Public Speaking Anxiety as a Function of Hardiness					
	Mean	SD	df	F	p
Anticipation	53.20	12.02	1,54	.275	.602
Confrontation	54.51	13.06	1,55	.243	.624
Adaptation	46.7	14.74	1,55	.069	.793
Release	40.09	15.06	1,55	.329	.569
Overall	49.93	13.56	1,55	.431	.514

$p < .05$

*Hardiness and Trait Anxiety as Predictors for Public Speaking State Anxiety*

A multiple regression was employed to analyze the strength of the independent variables of hardiness and public speaking trait anxiety as predictors of public speaking state anxiety. Results indicated that together hardiness and trait anxiety are somewhat weak predictors of state anxiety,  $r = .42$ ;  $R^2 = .18$ . According to Cohen (1988), an effect size of .10 to .30 is a rather small effect. The effect size represented by  $R^2$  indicates that hardiness and trait anxiety combined to account for 18% of the variance in state anxiety—a rather small effect size  $F(2,138) = 14.6$ . Importantly, however, together these variables are better at predicting state anxiety than hardiness alone.

*Hardiness and Public Speaking Anxiety Pattern Type*

A descriptive analysis of the frequency of the high hardy/low hardy grouping variable and public speaking anxiety type, habituators and sensitizers, was conducted ( $n=56$ ). Public speakers are considered habituators if the four milestones of measured anxiety peak at the anticipation phase (the one minute before the speech) and decline throughout the remainder of the speech ( $n=80$ ). Sensitizers are those who peak sometime after the anticipation phase, typically in the confrontation phase which occurs in the first minute of the speech ( $n=68$ ). Frequency results are contained in Table 12.

A chi-square, cross-tabulation was conducted using the same grouping variables of high/low hardiness and public speaking anxiety type (habituators and sensitizers). Significance tests failed to show statistical significance ( $p=.76$ ).

Table 12

Frequency of High / Low Hardiness and Habituaors / Sensitizers Anxiety Type

	Habituator	Sensitizer	Total	Percent	Significance
Low Hardy	11 (50%)	11 (50%)	22	39%	
High Hardy	14 (41.2%)	20 (58.8%)	34	61%	
Total	25 (44.6%)	31 (55.4%)	56	100%	.76

## CHAPTER FIVE

### Summary of Findings, Discussion, Conclusions, and Recommendations

#### *Summary of the Findings & Discussion*

Five research questions guided this study. They were the following: 1) What is the bivariate relationship between hardiness and public speaking state anxiety? 2) What is the bivariate relationship between hardiness and public speaking trait anxiety? 3) Do hardy and non-hardy individuals experience different levels of public speaking state anxiety? 4) To what extent do hardiness and trait communication apprehension predict state anxiety levels at the four public speaking milestones? 5) What is the relationship between hardiness groups and public speaking state anxiety groups? The series of analyses presented in this report helped to answer these five questions and, in addition, provide an agenda for future research by raising additional questions.

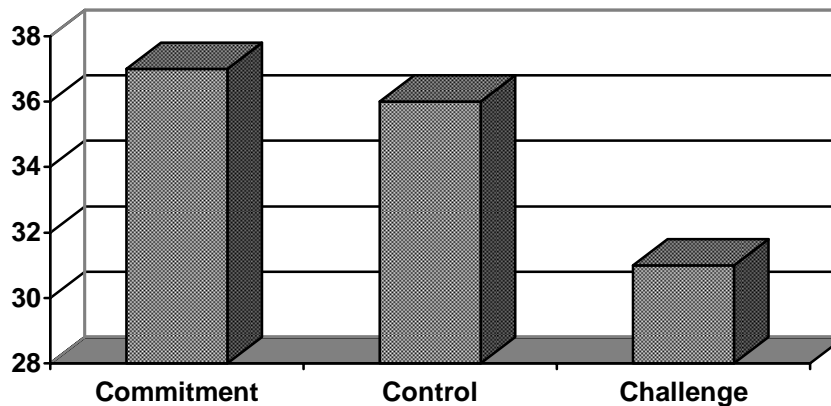
In reviewing the literature for the present study, the researcher found that the hardiness literature in the past three decades has reported hundreds of investigations with widely varying populations. The hardiness construct emerged from a study in which the participants were largely male, full-time adult employees. As explorations into the construct continued, other research participants were examined but, again, these were largely conducted with individuals in the employment sector. In recent years, hardiness explorations have been extended to a higher education base of participants. Conversely, the research on communication apprehension and public speaking anxiety has largely been conducted with higher education student populations. The intersection of the hardiness and communication anxiety literature is the exploratory research reported here.



## Hardiness

Hardiness is a trait measure comprised of three closely-related constructs of commitment, control, and challenge. The current hardiness measurement was derived from the Dispositional Resilience Scale. Prior to the data explorations pertaining to the research questions guiding this study, the first data analysis was conducted on the hardiness subscale and composite scores. As shown in Figure 4, Hardiness Subscale Median Scores, participants reported higher scores on Commitment and Control than Challenge.

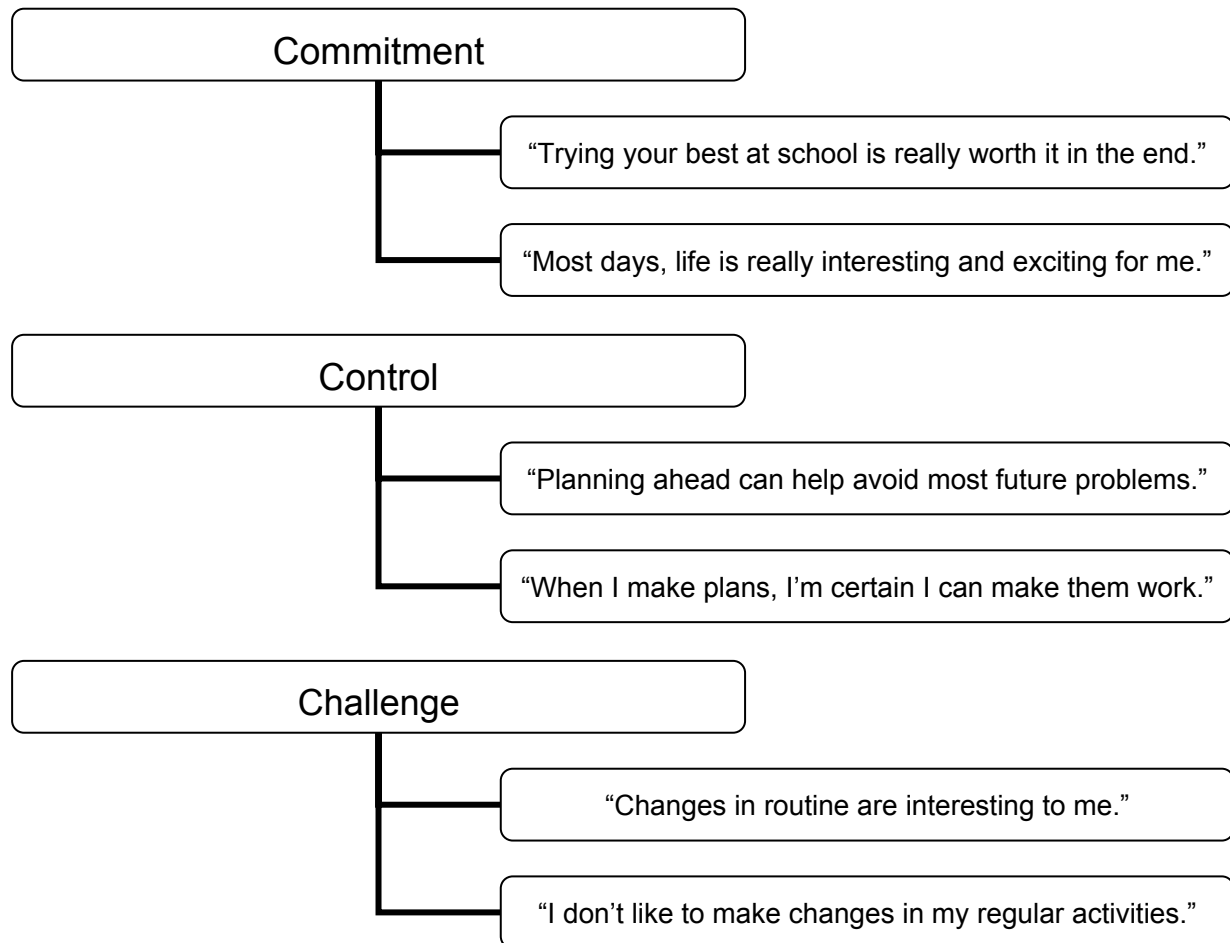
Figure 4. Hardiness subscale median scores.



One interpretation of the above results is that the median scores are consistent with theoretical expectations for the participants. In the present study, the sample represents a traditional student population at a selective-enrollment university that has a highly residential student population. The results indicate stronger beliefs in engagement with others and one's control over life events than preferences for change and uncertainty. These results are consistent with higher education theories of student engagement (Tinto, 1987). The findings suggest that students believe in an active

engagement with their environment. Participants also perceive an internal sense of control over events in their lives, but to a lesser degree than that of their engagement and commitment with their environment. Examples of items for each subscale (Bartone et al., 1989, pp. 327-328) are as shown in Figure 5, Hardiness Items.

Figure 5. Hardiness items.



Another possible explanation for the results of this sample is suggested by the demographic data. Since 90 percent of the sample were freshmen and sophomores, the subscale scores could be an artifact of class rank. According to Perry (1970) and Baxter-Magolda (1992), students in this class rank are more concrete, absolute knowers. That is, students perceive that the faculty member, not the student, has a relatively high level of authority (control), and the student's tolerance of ambiguity or uncertainty (challenge) is relatively low. Therefore, students in this class rank may perceive their own control and need for change as lower than their engagement or commitment with others.

#### *Hardiness and Public Speaking State Anxiety*

As stated above, the first research question investigated the relationship between hardiness and public speaking state anxiety. A bivariate correlation of the DRS and the overall STAI ("Overall, how you felt during your public speech...") was calculated. No statistically significant relationship was detected for these two variables ( $r = -.045$ ). Likewise, each of the four STAI for the milestone key points of the speech (anticipation, confrontation, adaptation, and release) found no statistically significant correlation with hardiness.

Even though no statistical significance was found between hardiness and the five public speaking state anxiety phases, the literature does support the findings (Behnke & Sawyer, 1998). Since hardiness is a trait measure of a person's attitude about one's commitment, control and challenge in life, a negative relationship between public speaking anxiety and hardiness is expected. This was the finding in the current study. Interestingly, a negative relationship was detected for the overall score, the anticipation

phase, and the confrontation phase, but not for the adaptation and release phase scores. This is an interesting point, but not unexpected. The literature reports that, for most people, the highest point of anxiety occurs in either the anticipation or the confrontation phase, as depicted earlier in Figures 2 and 3. Simply put, as hardiness goes up, public speaking state anxiety goes down, and vice versa. Specifically, the harder the individual, the lower their anxiety score. So, while a statistically significant relationship was not detected between the variables, the results do follow empirical logic—that is, a negative relationship exists when anxiety is at its highest and a positive relationship exists when anxiety levels have dropped.

One consideration to explore when a relationship between variables fails to achieve statistical significance, despite empirically-based reasoning, is whether the finding could be either incorrect or faulty. Therefore a consideration of the scales utilized was explored. Would results have been different if other scales had been used? For the STAI, which consistently performs exceedingly well, tests for internal consistency (Henson, 2001), were .94 and better, so this does not seem the case. Likewise, since the hardiness subscales performed exceedingly well (.94 and better), this does not seem the case. So, while the possibility exists for a Type II error due to other unknown factors, the chances of a faulty finding having occurred due to weaknesses in the scales seems quite unlikely.

#### *Hardiness and Trait Communication Anxiety*

The second research question explored the relationship between hardiness and public speaking trait anxiety. To begin exploring trait communication apprehension, each of the PRCA-24 subscales and the total score was used as a bivariate correlation

variable with hardiness. Interestingly, four scores were found to have a statistically significant relationship with hardiness: each of the three subscales (group, meeting, and interpersonal) and the total score. This is not surprising given that the DRS and the PRCA-24 both are trait measures—this is an expected finding.

An unexpected finding with these calculations is that public speaking failed to achieve a statistically significant correlation with hardiness. This suggests a couple of possibilities. One explanation is that the public speaking anxiety level reported by students is so substantial that it mitigates the buffering effect of hardiness. Certainly, this is a viable explanation given the limited speaking experience of students in a basic communication course. Empirical evidence shows that novice speakers report higher levels of public speaking anxiety than experienced ones. A second explanation is that a Type II error occurred with this particular subscale. The PRCA-24 public speaking subscale may not be sufficient to measure this variable for the purposes of this study. This is, possibly, a limitation of the present study.

Additionally, correlations of the three hardiness components (commitment, control, and challenge) were run with the PRCA-24 subscales. Results among the three subscales reveal a statistically significant negative relationship between hardiness and interpersonal communication. This indicates that, as a trait measure, hardiness seems to be functioning well for purposes of the present study.

Another interesting finding was that public speaking was significantly correlated with hardiness on the control variable. In other words, students who reported higher levels of perceived control also reported higher levels of trait public speaking anxiety. One interpretation of this finding is that individuals who perceive a more internal locus of

control than external also perceive public speaking as an anxiety-arousing event. Perhaps for the public speaking context, those who desire control feel they lose some internal control when delivering a public speech.

#### *High Hardy / Low Hardy Individuals and Public Speaking State Anxiety*

The third research question investigated differences in public speaking anxiety between individuals in the grouping variable of high hardiness and low hardiness. ANOVA results found no statistically significant relationship between individuals identified by the grouping variables of High Hardiness and Low Hardiness. The method of grouping participants could be a limitation with this calculation. The first grouping method, which used a median-split approach, was dismissed following a test for homogeneity of variance. This first method is the preferred approach given the sample size ( $n=150$ ). A median-split would have provided a sizeable group (75) for both the High Hardy and Low Hardy groups. Despite the increased split-sample size advantage, this method had to be rejected. The second grouping method, as reported earlier, satisfied the homogeneity of variance assumption. This approach had a much smaller set of participants ( $n=58$ ). While a smaller sample size is a possible limitation of the study, given the grouping methods used in previous research (Winters et al., 2007; Ramanaiah & Byravan, 1999), the approach employed in the ANOVA calculation is the methodologically sound one. No statistically significant differences were detected between High Hardy and Low Hardy groups on the state public speaking anxiety measure.

### *Hardiness and Trait Anxiety as Predictors for State Anxiety*

The fourth research question explored the hardiness and trait anxiety independent variables as predictors for state anxiety. The effect size is small for this finding (Cohen, 1988). However, an important finding here is that the two variables together produce a bigger effect size than hardiness alone. One approach to interpreting this finding is to reflect on earlier results presented here which revealed a relationship between hardiness and state public speaking anxiety which did not meet levels of statistical significance. Therefore, given the earlier finds, the present multiple regression finding is consistent.

Another approach to consider is that this finding suggests a more complex relationship existing between hardiness and state anxiety measures. Quite possibly, one's hardiness is suppressing anxiety levels at each of the public speaking milestone key points.

While the regression results do not indicate strong predictor variables, the results reveal practically significant results—that hardiness and trait anxiety together perform better to predict state anxiety than either measure does singly.

### *Hardiness as a Predictor for Habituation / Sensitization Groups*

The last research question investigated hardiness as a predictor for the type (or pattern) of public speaking state anxiety (habituator or sensitizer). To complete this analysis, two groups were compared using two variables. The High and Low Hardiness groups used in earlier data analysis were cross-tabulated with the two groups of speaker patterns (types). This exploration was an intuitively-based analysis given that researchers do not have empirical evidence of any hardiness and public speaking

anxiety relationship. While earlier data analysis reported here failed to achieve statistical significance when hardiness was correlated with state anxiety at each of the public speaking milestones, it is reasonable to suspect that this relationship might change when considering the pattern of public speaking anxiety (depicted in Figures 2 and 3). While some researchers contend that chi-square cross-tabulation results present too limited results, in the present study this was exactly the analysis required—that is, both grouping variables provide a holistic view of the hardiness variable and the state anxiety milestones. Empirical reports (Sawyer & Behnke, 2002; Behnke & Sawyer, 1999) demonstrate the value of viewing public speaking anxiety as a dynamic event. From data analysis of the milestones in the literature, a holistic understanding of types of public speaking anxiety has been revealed. In the present study, no statistically significant relationship was found between groups or grouping variables.

### *Recommendations*

This study has provoked a number of ideas for future research studies in the area of hardiness and public speaking anxiety. An obvious idea would be to replicate the study to see if the hardiness measure might reveal a statistically significant relationship with public speaking anxiety. Since the present study is an exploratory one, it is advised to replicate the study to determine if the results found were actually a function of the variables rather than some transient phenomenon.

A further exploration would be to replicate the study to see if a student's collegiate classification and collegiate experience are correlated with hardiness and public speaking anxiety. This study would be commenced at the start of a Fall semester when freshmen students are new to campus and have highly limited collegiate



experience. In an academic year at the institution of the current study, over 1200 students enroll in the 8-week course. With an entering freshman class of approximately 1600, the opportunity to measure hardiness, one's collegiate experience, and self-reports of public speaking anxiety might yield a different picture of hardiness. Since the Basic Communication Course is commonly found in the core curriculum across college campuses, and typically this is an introductory, freshman-level course, the study would provide an ideal condition for measuring higher education experience, hardiness, and anxiety-arousing stimuli such as public speaking.

Similar to the study suggested immediately above, a future study of this nature could employ a stratified sample of hardiness and undergraduate student classification (freshman, sophomore, junior, and senior). Since the basic communication course is typically an introductory level course—in the present study, 90 percent of the sample were freshmen or sophomores—a stratified sample would be the appropriate design to gather class rank data. The results of such a study could provide a view of student development changes with regard to hardiness. Perry (1970) found in his studies of Harvard College undergraduates that students change conceptually during the college years. His stage model of intellectual and ethical development supplies a schema for understanding the “structures which the students explicitly or implicitly impute to the world, especially those structures in which they construe the nature and origins of knowledge, of value, and of responsibility” (p. 1.) Similarly, student identity development was recently explored by Bartone (co-creator of the Dispositional Resilience Scale used in the present study) and others with a cohort of West Point cadets (Lewis, Bartone, Forsythe, Bullis, Sweeney, & Snook, 2005). Hardiness

measures could provide a lens through which to view student perceptions of individual academic responsibility.

Another variation of the present study might be to include a more complex study of hardiness and public speaking state anxiety. For example, the present study operationalized public speaking anxiety using the STAI and hardiness using the DRS, both of which are self-report measures. An added dimension in the future would be to include an observer rating of public speaking anxiety and its relationship with self-reports of hardiness. Additionally, an added measure of public speaking competence (a public speech grade) for one or more public speaking assignments would provide another layer of analysis for the hardiness construct.

Another obvious approach to replicating the current study is to do so using a different measure of public speaking trait anxiety. Since the Personal Report of Communication Apprehension (PRCA-24) uses only six items to measure the public speaking context, a measure designed exclusively for public speaking anxiety might produce different results. One such scale is the 30-item Personal Report of Public Speaking Anxiety, which was the scale antecedent to the PRCA.

A related idea is to utilize an additional measure of hardiness—one that is unique to the higher education environment. The Revised Academic Hardiness Scale (RAHS) is an 18-item instrument which, following its recent revision, is a promising measure of college student hardiness beliefs and behaviors (Benishek, Feldman, Shipon, Mecham, & Lopez, 2005). While this is also a self-report measure like the DRS, unlike the DRS which measures a person's beliefs and attitudes, the RAHS solicits responses to a student's beliefs and behaviors. The degree to which students will engage in behaviors

that support their academic progress, such as meeting with faculty outside of class or asking questions when confused, is perhaps a better indicator of one's academic hardiness. Potentially, this measure may be more meaningful to higher education in that administrators can better address matriculation and retention efforts. As discussed earlier, students who fail to adopt academically supportive behaviors, which are largely communication-based, are more likely to drop out of college than their peers. Academic hardiness may help a large set of stakeholders, including students, faculty, and administrators, improve retention efforts. Likewise, a longitudinal study of hardiness and student success (such as grade point average and graduation rates) would be especially valuable to these stakeholders.

Since the correlation between interpersonal communication and hardiness revealed a statistically significant relationship, an obvious line of inquiry would be to include additional measures of the relationship between hardiness and interpersonal competence, both self-perceived and other-perceived. Again, the PRCA-24 offers a limited number of items (six) for the interpersonal context. Given that a course in interpersonal communication is commonly found on college campuses, this would be an appropriate study to provide potentially valuable data of communication trait anxiety.

On yet another tack, future research might include hardiness measures along with the Locus of Control Scale (Rotter, 1966). As discussed earlier in the present study, the hardiness construct is a constellation of closely related of three subconcepts— one of which is control. The Locus of Control Scale was used by Kobasa (1979) to inform the early construction of a hardiness measure. For study purposes, it is reasonable to suspect that a students' perceived control over the public

speaking assignment could potentially mitigate some anxiety. Therefore, locus of control and hardiness, together, might better predict public speaking state anxiety than either measure would alone.

Another approach to hardiness research is to recall that the findings from this study indicated no statistically significant relationship between hardiness and public speaking state anxiety. Future studies might reveal that hardiness is actually acting as a suppressor variable and does, indeed, have a practically significant relationship with state anxiety. Specific statistical tests using sophisticated software could provide this analysis of future data sets.

Yet another future investigation might be to approach one's hardiness and communication from a neurobiological perspective. Some recent reports in the communication literature explain the neurobiological perspective for communication apprehension in which cerebral functioning plays an important role in a person's communication and social behavior. That is, teaching content rather than modifying behaviors is an effective approach. "Through teaching of content...we can get people to understand [the] communication behaviors [which] can lead to more effective communication" (McCroskey & Beatty, 2000, p. 4).

Finally, hardiness may serve to inform explorations into public speaking apprehension therapies. The success of those who conduct hardiness training (Maddi, 2004; Bartone, 2006), and the neurobiological approach mentioned above (McCroskey & Beatty, 2000), support the notion that hardiness training can help individuals buffer the effects of life events. Likewise, an already established public speaking anxiety therapy suggests a connection with the personality constructs of

hardiness: commitment, control, and challenge in that it takes a future-oriented approach. Motley's Communication-Orientation Motivation approach (Ayres, Hopf, & Peterson, 2000) contends that people experience public speaking anxiety when they adopt a performance-based orientation to public speaking rather than a conversation-based orientation. Speakers who adopt the former position assume that any imperfection in the performance will be judged negatively. Conversely, those who adopt a more optimistic, conversation-based position view the public speaking experience as a sharing of viewpoints rather than a judgment of performance. Future explorations of hardiness should include research designs which will result in new plans of therapy so that the investigations are of practical significance.

### *Conclusions*

The current study explored the relationship between the personality trait of hardiness and the situational state of public speaking anxiety. The study began with the idea that hardiness explains a person's resilience against stress. A common anxiety-arousing complaint among individuals is the anxiety experienced when delivering a public speech. While hardiness research has been conducted in a wide variety of settings and groups of people, a limited number of published reports exist for students in higher education. Given that students in higher education are expected to acquire an oral communication competency, and their academic success is largely based on some communicative activity, an investigation into hardiness and public speaking anxiety at the collegiate setting was most appropriate.

Importantly, this study was an initial exploration into two previously unlinked variables. The findings here were valuable in informing future research. Hardiness,

and its links to communication anxiety and public speaking anxiety, should continue to be explored. While the present findings did not achieve the statistical significance level on the independent variable, they did provide practically significant and instructive conclusions.

Some variables have been studied extensively in the communication literature as contributing to anxiety, or reduction in anxiety, and new variables of interest are continually sought as the complexity of communication anxiety continues to elude research scholars. Hardiness research should be continued. Future studies yielding information about student hardiness may provide an effective measure with which to predict some student public speaking anxiety levels. With this information, communication instructors will be better able to prepare treatment measures that are best suited to students (Cronbach, 1957). Purposefully viewing communication anxiety through the lens of a hardiness model promises to break new ground in untangling the multi-dimensional complexity of public speaking anxiety such that an effective approach to predicting public speaking trait anxiety might be uncovered.

## APPENDICES

### Appendix A

#### Texas Christian University Institutional Review Board

#### Signed Informed Consent Form

*Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the purpose and benefits of the study and how it will be conducted.*

**Title of Study:**

An Examination of Public Speaking Anxiety Treatment in the Basic Speech Course.

**Principal Investigator:**

Debi Iba, Instructor, TCU Department of Communication Studies

**Purpose of the Study:** You are being asked to participate in a research study regarding public speaking anxiety which involves completing three (3) written forms during the semester in which you are enrolled in the Basic Speech Communication Course.

**Study Procedures:** During the Basic Speech Communication Course, you will be required to complete public speaking assignments. If you agree to participate in this research study, you will be asked to volunteer 20 – 30 minutes of your time to complete three (3) written forms. Your participation is completely voluntary, and you may withdraw at any time without penalty or any effect whatsoever.

**Foreseeable Risks:** No foreseeable risks are involved in this study.

**Benefits to the Subjects or Others:** We expect the project to benefit you, and other students who enroll in the Basic Speech Communication Course, by providing important information about activities that may reduce public speaking anxiety.

**Procedures for Maintaining Confidentiality of Research Records:**

Your responses will be totally anonymous, and you will not be individually identified in any way. The data you provide will be combined with responses from other students and analyzed as a group. The signed consent forms and completed questionnaires will be kept in a locked cabinet will be kept in separate locations which can be accessed only by the researcher. The confidentiality of your individual information will be maintained in any publications or presentations regarding this study.

Questions about the Study: If you have any questions about the study, you may contact Debi Iba at telephone number 817-257-5676 or Prof. Amber Finn (817-257-5675).

Review for the Protection of Participants: This research study has been reviewed and approved by the TCU Institutional Review Board (IRB). Any questions regarding the rights of research subjects can be directed to Dr. Tim Hubbard (TCU Committee on Safeguards of Human Subjects) at 817-257-7410 or Ms. Jan Fox (TCU Office of Research and Sponsored Projects) at 817-257-7516.

Research Participants' Rights: Your signature below indicates that you have read or have had read to you all of the above and that you confirm all of the following:

- Debi Iba has explained the study to you and answered all of your questions. You have been told the possible benefits and the potential risks and/or discomforts of the study.
- You understand that you do not have to take part in this study, and your refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits. The study personnel may choose to stop your participation at any time.
- You understand why the study is being conducted and how it will be performed.
- You understand your rights as a research participant and you voluntarily consent to participate in this study.
- You have been told you will receive a copy of this form.

\_\_\_\_\_  
Printed Name of Participant

\_\_\_\_\_  
Signature of Participant

\_\_\_\_\_  
Date

For the Principal Investigator or Designee: I certify that I have reviewed the contents of this form with the participant signing above. I have explained the possible benefits and the potential risks and/or discomforts of the study. It is my opinion that the participant understood the explanation.

\_\_\_\_\_  
Signature of Principal Investigator or Designee

\_\_\_\_\_  
Date



Appendix B

TCU Basic Speech Communication Course

Student Questionnaire

A. Write in the last four digits of your student ID number: \_\_\_\_\_

B. Lab Time: \_\_\_\_\_

C. Circle your lab room#:            300            345

D. Circle your TCU classification: Freshman    Sophomore    Junior    Senior

E. Indicate your sex (circle one): Male            Female

F. Write in your age:            \_\_\_\_\_

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