Quality of Life in Young Adults with Specific Phobia

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Abstract

The current study examined the effects of specific phobia on an individual's quality of life (QOL) and life satisfaction. To that end, 29 individuals with *DSM-IV* diagnoses of specific phobia and 30 control participants with no current diagnosable psychopathology completed several widely utilized self-report questionnaires and an interview on QOL. Trained and reliable clinicians also completed ratings of participants QOL. Results were divided into participant-rated QOL findings and clinician-rated QOL findings. Participant-rated findings suggested phobic individuals experienced significantly more dissatisfaction with their ability to learn and acquire new skills than did controls. Phobic participants, however, also rated themselves as having less impairment than controls from pain—presumably related to their phobic avoidance. Clinician-rated findings suggested significant distress and impairment in phobic individuals' QOL relative to controls across a variety of domains (e.g., school, family, etc.). Discrepant findings between participant ratings and clinician ratings were explained using a cognitive dissonance model. Implications for future QOL research in those individuals with specific phobia as well as implications for their treatment were discussed.

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And finally,
my grandma put it best…

Proverbs 3: 5-6

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Quality of Life in Young Adults with Specific Phobia

"Quality of life" is a construct that historically has been ill-defined and under-researched in mental health. The concept evolved from the medical field in response to changing views on health. Growing medical technologies and therapies in the mid 1900's led to an increased ability to preserve and extend life, but neglected patients' basic needs, autonomy, and well-being (Katschnig, 1997). As a result, "health" was no longer considered mere vigor and freedom from physical illness, but entailed other factors. Health was reconceptualized as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" (WHO, 1948). Over time, this broader conceptualization of health emerged in the fields of psychiatry and psychology with similar results.

As a result, a central component of most mental disorders is disability—defined to be "impairment in one or more important areas of functioning" (American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders-4th edition, 1994, p. xxi; *DSM-IV*). In particular, *DSM-IV* criteria usually require the clinician to determine the clinical significance of the client's symptoms (i.e., "clinically significant distress or impairment in social, occupational, or other important areas of functioning;" p.7). This interference and the related concept of quality of life have been studied in various psychiatric populations; however, very little has been done to examine the quality of life in individuals with specific phobia.

Quality of Life

The term "quality of life" has been difficult to define. The most widely cited definition describes "quality of life" as:

> a loosely related body of work on psychological well-being, social and emotional functioning, health status, functional performance, life satisfaction, social support and standard of living, whereby normative, objective and subjective indicators of physical, social, and emotional functioning are all used (Katschnig, 1997, p. 6).

Defined thus, quality of life becomes a broad-based amalgam of health, satisfaction/well-being, socio-economic status, and other variables which include interference in both functioning and in daily life that is directly attributable to psychopathology, but extends beyond that limited domain to other areas of life. Additionally, "quality of life" suggests more than mere impairment or psychopathological decrement; in fact, quality of life typically is used to refer to "aspects of life that make life particularly fulfilling and worthwhile" (Quilty, Van Ameringen, Mancini, Oakman, & Farvolden, 2003, p. 406).

Conceptual and Assessment Issues. Several conceptual and assessment issues exist when attempting to examine quality of life. Most commonly, these issues pertain to the use of subjective versus objective measurement, the examination of different components of quality of life (i.e., well-being/satisfaction, functional status, environmental/contextual factors), the need for assessment to occur in multiple life domains, the problem of overlap between some quality of life assessments and aspects of psychopathology, and the potential effects of illness/psychopathology/stressor duration and quality of life reports (Katschnig, 1997).

Subjective versus Objective Measures. By definition, quality of life research emphasizes the subjective views of the patient (Katschnig, 1997; Mogotsi, Kaminer, & Stein, 2000). Quality of life research, however, has been criticized for this emphasis and the potential influence of affective fallacy (i.e., current emotional states influence the way

in which individuals complete self-report measures; Katschnig, 1997). One criticism of quality of life research has been its emphasis on subjective measures. In response, quality of life researchers have adopted a multi-informant response scheme which has resulted in several instruments that allow for an external review of an individual's subjective quality of life ratings (i.e., objective assessments). For example, Schneier et al. (1994) developed a brief clinician-rated quality of life interview called the Disability Profile. Even with these developments, however, the construct of quality of life inherently focuses on the individual's own subjective impression of his or her own life (Mendlowicz & Stein, 2000).

The Components of Quality of Life. Katschnig (1997) has suggested three important components to quality of life: well-being and satisfaction, functional status, and environmental/contextual factors. Well-being and satisfaction have typically been the focus of quality of life research: an individual's subjective impressions of happiness and life. However, social functioning and, especially, environment/context have been relatively neglected areas of investigation. These two components focus more on an individual's current environmental limitations and assets and that individual's ability to interact effectively with the environment. For example, a depressed individual may experience a great deal of dissatisfaction with life (i.e., well-being/satisfaction), a lack of socialization skills to enhance social support (i.e., social functioning), and a lack of financial resources to meet basic needs (i.e., contextual). Overall, incorporation of social and material factors is recommended in the assessment of quality of life (Katschnig, 1997).

The Need for Multi-Domain Assessment. Quality of life measurement must not

only consider the types of impairment, but must also consider the various domains in which impairment can occur. For example, impairment in satisfaction with friendships may not evidence itself in the workplace. As a result, a quality of life assessment specific to the workplace would not detect impairment in other domains. Simply stated, the potential for quality of life to fluctuate across domains should be expected and evaluated (Katschnig, 1997).

The Overlap Between Quality of Life and Psychopathology. Quality of life measurement originally assessed the satisfaction and well-being of the general population and of medical patients. Given this purpose, dimensions related to emotional well-being and emotional functioning were frequently included. This addition, however, created a particularly difficult conundrum when quality of life measures were applied to mental health—overlap and redundancy between quality of life and psychopathological interference (Gladis, Gosch, Dishuk, & Crits-Christoph, 1999, Katschnig, 1997, Mezzich & Schmolke, 1997). Quality of life, by encompassing measures of several areas of functioning and well-being, correlated with psychopathology; in fact, many measures of quality of life actually included questions which directly probed psychopathological issues (Katschnig, 1997, Mezzich & Schmolke, 1997). Disentangling these constructs has been a major emphasis of research. Central to this issue is the investigator's intentions and needs in a quality of life instrument.

Quality of life can be examined from three distinct perspectives: a general quality of life framework, a health-related quality of life framework, and a disease-specific quality of life framework (Lehman, 1997). The goal of the general framework has been to "derive a social perspective about the status and well-being of various groups of

people, and the values that they and their societies place upon various aspects of life experience;" whereas the health-related framework "emphasizes the specific impacts that the prevention and treatment of disease and injury have on the value of survival" and recognizes the impact that disease can have on quality of life (Lehman, 1997). The disease-specific framework is a more diagnostically focused version of the health-related framework.

Based upon the framework used to couch an assessment, different questions are being posed in different ways. In mental health, the health-related and disease-specific frameworks are commonly employed. As a result, quality of life is frequently tied to psychopathology by the degree to which a disorder is functionally impairing (e.g., according to *DSM-IV* criteria). Disease-specific measures probe comparisons of quality of life in particular domains given a certain disorder. For example, anxiety disorders detract from quality of life through distress and worry, avoidance behavior, and social stigma (Schneier, 1997). These pathways may be probed specifically (i.e., disease-specific; e.g., to what extent does panic impact your relationships) or broadly (i.e., health-related; e.g., to what extent have emotional problems interfered with relationships). The actual research questions being queried in these two examples are distinctly different. The first question draws a direct comparison between quality of life and a disorder, whereas the other seeks to determine if relationships have been impacted by psychological well-being; however, both rely upon the subjective impressions of the individual. The main difference between these frameworks and what is typically considered clinically significant interference in standard multi-axial diagnosis is 5-fold: 1) a focus on the person as an individual who is more than an illness, 2) a subjective

perspective which emphasizes the individual's own goals and abilities, 3) an emphasis on positive health which affirms the individual's relative strengths and attempts to identify assets, 4) a tendency for greater cultural sensitivity by placing the emphasis on the individual's subjective ratings, and 5) a holistic approach which goes beyond typical multi-axial diagnostic schemes to include functioning in more domains (Mezzich & Schmolke, 1997).

The Duration of Problems and Quality of Life. An important issue to consider with the assessment of quality of life is the standard drift fallacy (Katschnig, 1997). Succinctly, the standard drift fallacy suggests that the longer individuals have a disorder the more likely it is that their standards are adapted downwards to their current conditions. When faced with unattainable goals, patients are forced to either change their circumstances and environment or change their goals. For example, individuals with Social Phobia tend to rate their quality of life as being worse in the past than in the present: presumably because these individuals are satisfied with their progress and achievements, even though these achievements were below those of the general population (Wittchen & Beloch, 1996).

Recommendations. In attempting to address the five issues considered problematic to quality of life measurement, Katschnig (1997, p.15) suggested the following guidelines for the assessment of quality of life:

1. Whenever feasible, at least three assessments should be carried out: one by the patient, one by a family member or friend, and one by a professional.
2. Three components of quality of life should be distinguished, subjective well-being/satisfaction, functioning in roles, and external living

conditions.

3. Different life domains should be assessed separately, since a person's quality of life might be excellent in one (e.g., family) and inferior in another life area (e.g., work); also, helping actions [interventions] have to address those segments of life which are most in need of assistance.
4. The inclusion of psychopathological symptoms in quality-of-life instruments should be made explicit [and the influence of these symptoms should be carefully considered depending upon the framework of quality of life assessment used (i.e., general, health-related, or disease-specific)].
5. The assessment of change of quality of life should consider the different "speeds" of change inherent in the different components (well-being/satisfaction, functional status, contextual factors) and the possible downward drift of standards to which patients with persistent mental illness compare their actual situation.

Based upon these recommendations, quality of life measurement should be a thoughtful, multi-method, multi-domain approach to examining the lives of individuals. In particular, multiple informants should be used to counter the affective fallacy, quality of life should be examined as potentially different components influencing different life-domains, psychopathological symptoms should be studied separately from general quality of life issues, and the effects of time on attitudes and beliefs should be considered as a factor in the alteration of quality of life ratings.

Quality of Life and Psychiatric Disorders

Though the use of quality of life measures in mental health has become

increasingly common, quality of life seems to be used most frequently to assess depression and anxiety disorders. Early quality of life assessments also attempted to determine aspects of functioning for those with severe and persistent psychoses within inpatient settings and after transitions to less restrictive environments; however, the results of these investigations were mixed (Lehman, 1997).

In addition to psychoses, researchers began examining quality of life and depression. Results have supported the notion of pervasive and debilitating effects from depression. In the seminal work on this subject, Wells et al. (1989) reported on over 11,000 patients with depression or depressive symptoms in the Medical Outcomes Study. Their results suggested that patients with depression had worse physical functioning, social functioning, role functioning, perceived current health, and bodily pain than patients with no chronic conditions. Additionally, individuals with either depressive symptoms or full depression were found to function no better than or even worse than many other chronic medical conditions (e.g., hypertension, diabetes, arthritis). In yet another example, Gaynes, Burns, Tweed, and Erickson (2002) investigated the impact of depression and chronic health problems. Their findings suggest that depression impairs quality of life to the same extent as arthritis, diabetes, and hypertension; moreover, they found that depression can interact with serious medical conditions to amplify the effects of the illness. Studies examining depression, such as these, are relatively common in the quality of life literature; and, as a result, depression has become a common group with which to draw comparisons (Mendlowicz & Stein, 2000).

Quality of Life and The Anxiety Disorders

More recently, quality of life researchers have begun investigating the anxiety

disorders. In particular, research has focused on panic disorder, social phobia, and post-traumatic stress disorder, with little to no investigation occurring with obsessive-compulsive disorder, generalized anxiety disorder, and specific phobia (Mendlowicz & Stein, 2000; Mogotsi et al., 2000; Quilty et al., 2003). While varying degrees of impairment have been identified for the anxiety disorders, several studies have begun to make relative comparisons among them.

For example, Schonfeld et al. (1997) examined the quality of life in individuals with untreated major depressive disorder or anxiety disorders. Results suggested that quality of life was impacted the most by major depressive disorder, followed by post-traumatic stress disorder (PTSD) and panic disorder (PD). Moreover, results suggested differential impact in quality of life: PTSD impacted vitality and physical health, with mental health disrupting daily activities, while PD impacted bodily pain with physical health disrupting daily activities. Additionally, the impact of untreated anxiety disorders on quality of life was suggested to be equivalent to, or greater than, several medical conditions (e.g., heart disease, arthritis, diabetes). In another study, Olfson et al. (1997) compared the relative impairment imposed by several psychiatric disorders. Results suggested that impairment increased with increasing comorbidity; also, after adjusting for demographic variables, comorbidity issues, and perceived health, results suggested that only bipolar disorder, major depressive disorder, phobias, and substance use had significant negative impacts on work, family, and social functioning. While investigations like these are becoming more frequent and demonstrating significant impairment associated with anxiety disorders and "phobias" (i.e., a grouping of social phobia, specific phobia, and agoraphobia), the impairment associated particularly with

specific phobia still remains largely unexplored. In addition, research has focused primarily on functioning and tended to exclude measures of satisfaction and well-being.

Quality of Life and Specific Phobia

A specific phobia is an intense, enduring fear of an identifiable object or situation that leads to anxiety symptoms, distress, and avoidance (*DSM-IV*). According to the *DSM-IV*, fears cued by particular objects, situations, or places evolve into specific phobias when they are persistent and excessive (criterion A), lead to undue physiological arousal (criterion B), and cause distress or avoidance (criterion D). In addition, there must be an understanding (in adults) that their fears are irrational and excessive (*DSM-IV*). Defined as such, research examining the quality of life in individuals diagnosed with specific phobia (or "simple" phobia) has been scarce. A review of the literature reveals only four studies examining this population.

Magee, Eaton, Wittchen, McGonagle, and Kessler (1996) investigated the effects of simple phobia, social phobia, and agoraphobia on various indicators of life functioning using data from the National Comorbidity Survey. Their results suggested that simple phobia is more common among those with less education, those who are unemployed (e.g., students, homemakers, and others), and those who live with their parents (Magee et al., 1996). Additionally, simple phobia was related to significantly increased work absences in men, significantly less social support, and more perceived role impairment than agoraphobia (as assessed by a single question asking if the phobia interfered "a lot," "some," "a little," or "not at all" with activities and life); however, simple phobia was not related to income. Overall, these findings suggest marked impairment in a variety of domains for those with simple phobia, commensurate with those individuals diagnosed

with social phobia or agoraphobia (Schneier, 1997).

Goisman et al. (1998) attempted to expand the literature in this area by examining the impact of a comorbid diagnosis of simple phobia. Goisman et al. (1996) examined 711 participants with anxiety disorders (115 of whom were comorbid with simple phobia) on a variety of demographic and quality of life measures. Results suggested no significant differences between those diagnosed either currently or in the past with panic disorder, agoraphobia, generalized anxiety disorder, social phobia, or obsessive-compulsive disorder and those diagnosed with similar disorders as well as a comorbid simple phobia. Though interesting, the study by Goisman et al. (1998) had several limitations. Specifically, participants in this study seeking treatment for simple phobia were turned away because the study was conducted as part of a larger research enterprise. As a result, a pure simple phobia group was not included in the study. This sample also reflected participants who were comorbid, specifically presented for treatment of those comorbid disorders, and did not possess a primary diagnosis of simple phobia. As a result, the results of Goisman et al. (1998) are limited.

Roy-Byrne, Milgrom, Khoon-Mei, Weinstein, and Katon (1994) compared participants with pure dental phobia to those with dental phobia and other comorbid axis I and II disorders. No comparison was made to determine if pure phobics differed significantly from a normal comparison group. Results suggested, however, no difference in the degree of impairment in physical functioning and bodily pain reported by pure dental phobics and the comparison group of comorbid dental phobics. This finding suggests pure phobics subjectively reported the same amount of impairment in physical functioning and the same amount of pain as those phobics who were comorbid

with much more pervasive disorders (e.g., the comparison group contained more severely impairing diagnoses such as eating disorders, depression, borderline personality disorder, schizotypal, paranoid, schizoid, etc.). On measures of role functioning, social functioning, mental health, and health perceptions, however, the pure dental phobics were significantly less impaired.

The results of this study regarding domains of functioning seem consistent with a diagnosis of dental phobia (i.e., increased pain, increased limitations in physical functioning). Additionally, it is not surprising that the presence of a pure phobia did not interfere with quality of life to the extent that various other disorders did combined. The degree of impairment in quality of life relative to a no-diagnosis control group or to normative guidelines was not attempted leaving the degree of impairment compared to undiagnosed individuals unexplored.

Finally, Meyer, Rumpf, Hapke, and John (2004) recently examined life satisfaction in 142 pure and 131 comorbid German adults with specific phobia (i.e., 18-64 years of age and born between 1932 and 1978) as part of a larger study on psychiatric disorders. The five-item Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) was used to assess global life satisfaction: Items were 1) In most ways my life is close to my ideal; 2) The conditions of my life are excellent; 3) I am satisfied with my life; 4) So far I have gotten the important things I want in life; and 5) If I could live my life over, I would change almost nothing. Participants rated these global items on a scale from 1 (i.e., strongly disagree) to 7 (i.e., strongly agree). Results from this study suggested no significant differences between individuals with pure specific phobia and those with no disorder; however, those comorbid with specific phobia did experience

more impairment in life satisfaction than no disorder controls.

As a whole, the four studies suggest that those comorbid with specific phobia do experience as much impairment as those with other disorders without comorbid phobia and more impairment than those with no disorder. Findings from Meyer et al. (2004) suggest, however, that no difference exists between global life satisfaction in phobics and no-diagnosis controls. This finding is not unexpected given the circumscribed nature of specific phobia and the global scope of the life satisfaction measure used in this study.

Impaired Quality of Life as an Inability to Inhibit Anxiety

Anxiety can be broadly construed as the inability to inhibit. This lack of inhibition can be described as an inability to inhibit cognitive process, biochemistry, psychophysiology, or even behavior. Of particular theoretical interest to the present study are the various works toward a psychophysiologic model of anxiety by Friedman and Thayer (1998a, 1998b, and Thayer & Friedman, 2002) and the work on an information processing model of anxiety by Beck and Clark (1997). Broadly, these two models address the same topic, anxiety, using different approaches (i.e., psychophysiology vs. cognitive theory) that are not necessarily exclusive, and actually complementary. Taken together, these models suggest that individuals with anxiety disorders (including specific phobia) possess a deficiency that can be construed as an inability to inhibit cognitive and physiological processes. These models both suggest vulnerabilities, respectively (i.e., cognitive and psychophysiologic), which would be expected to create impairment in daily functioning and quality of life.

Friedman and Thayer (1998a, 1998b, and Thayer & Friedman, 2002) proposed a dynamical systems model of inhibition and sensitization. This model asserts that anxious

individuals are unable to inhibit inappropriate responses and come to be locked in a positive feedback loop that perpetuates anxiety. A lack of inhibition for attending to innocuous stimuli leads to a feedback loop in which worry is increased and potential opportunities for disconfirming experience are minimized or avoided completely. This lack of inhibition is described on a variety of levels in various domains of functioning (e.g., physiologic, cognitive, and behavioral). On a cognitive level, the failure to inhibit neural processes can lead to hypervigilance and fear. Physiologically, anxiety has repeatedly been linked to decreased "vagally mediated heart rate variability" (p. 125, Thayer & Friedman, 2002). As a result, anxious individuals have been shown to exhibit less heart rate variability and higher heart rates (e.g., Friedman & Thayer, 1998b). From the perspective of this model, these deficits in inhibition lead to an anxious presentation. This state is characterized by the inability to inhibit repetitive, negative thoughts (i.e., worry) and a physiologically sensitized and hypervigilant state in which physiological symptoms are more pronounced, even to panic-like magnitudes.

Beck and Clark (1997) provide additional insight into the cognitive processes involved (from a less psychophysiologic perspective). According to Beck and Clark's (1997) model, the key feature of anxiety is a biased or inaccurate schema which leads to the interpretation of benign stimuli as dangerous or threatening. Additionally, they suggest that more than a maladaptive schema is at fault: there is also a concomitant underestimate of coping ability and of safety signals. As such, anxiety exists as a complex amalgam of cognitive, physiological, affective, and behavioral features that can be described in a three-stage model (Beck & Clark, 1997).

Stage I or Initial Registration is an orienting state in which information is

processed with automaticity (i.e., quickly, involuntarily, and outside of consciousness). Information processed at this stage is broadly considered positive, negative, or neutral. Initial registration may also serve as a negative attentional bias in anxiety. Stage II: Immediate Preparation continues the analysis of information using a mixture of automatic and elaborative processes. It is in this stage that the threat mode initiates a variety of responses in order to maximize survival and minimize danger (e.g., autonomic arousal, behavioral mobilization, primal thinking-a narrowing of focus to the threat stimulus, subjective fear, and hypervigilance). Processing may still occur outside of awareness; however, the initiation of responses should be observed by the individual (Beck & Clark, 1997). During this stage, cognitive processes narrow leading to inaccuracies, overestimation of threat, and catastrophic thinking and negative automatic thoughts emerge. Finally, Stage III or Secondary Elaboration involves the application of metacognitive processes. Purportedly, insufficient processing at this level maintains anxiety. Anxiety may escalate due to a lack of reflection and processing which would normally serve to inhibit the dominant primal threat mode of Stage II. Anxiety becomes "the excessive and/or inappropriate generation of threat meaning assignment in response to stimuli or situations that are innocuous" (p. 56, Beck & Clark, 1997). This excess results from a negative attentional processing bias and is maintained by a dominant and insufficiently inhibited primal threat mode which thwarts attempts at more elaborative processing.

Consistent with these models, anxious individuals (and to a lesser degree phobic individuals) should engage the world with negative attentional biases (i.e., negative processing schemas or uninhibited, non-habituating fear responses to stimuli) which lead

to chronic cognitive, attentional, and physiological hypervigilance. Given this, it was hypothesized in the current study that uninhibited cognitive and physiological processes and subsequent hypervigilance would lead to impairment in quality of life. Therefore, the models above would suggest that phobic individuals experience greater hypervigilance and less inhibition of physiological symptoms than individuals with no discernable diagnoses. Subsequently, one could expect this lack of inhibition is associated with impairment in quality of life, life-satisfaction, and functioning.

Based on of the literature reviewed above, this study investigated the degree of impairment in QOL related to specific phobias in young adults and examined potential mediators of any effects that were observed. The impact of *DSM-IV* specific phobias (excluding blood-injection-injury type due to psychophysiological differences) on several measures of quality of life were examined relative to a control group. Following the recommendations by Katschnig (1997), this study incorporated QOL assessments made subjectively by the individual and clinically by a professional (i.e., recommendation 1), assessments encompassed the three primary components of QOL (i.e., subjective well-being/satisfaction, functioning, and external living conditions; recommendation 2), assessments examined multiple life domains instead of only a single area of functioning (i.e., recommendation 3), and assessment included instruments that assessed both QOL generically and QOL in the context of the specific phobia (i.e., recommendation 4).

Given the proposed models suggesting a lack of inhibition in individuals with specific phobia, it was predicted that phobic individuals would be significantly more impaired in general and specific QOL and life-satisfaction than would be persons who do not have a *DSM-IV* diagnosis (i.e., control participants). Also, individuals with specific

phobia would be significantly more impaired in the specific domains of role functioning (school/work), social functioning, physical functioning, and health than would be control participants. It was not anticipated, however, that phobic individuals would differ significantly from controls in the environmental/contextual component of QOL. Neither of the reviewed models would explicitly lead one to predict that phobics would differ from controls in environmental/contextual characteristics (e.g., lack of inhibition leading to impaired socioeconomic status or less income). Moreover, the existing literature does not support environmental/contextual impairment in the anxiety disorders (Magee et al., 1996).

Mediators of Quality of Life Impairment

Consistent with the proposed models of cognitive and psychophysiological interference, it was predicted that anxiety symptoms (i.e., cognitions and body sensations) would mediate the proposed impairment in QOL. Mediational hypotheses are frequently tested through a series of 4 regression equations (e.g., Baron & Kenny, 1986; Holmbeck, 1997). For a successful mediational test, the independent variable must be significantly associated with mediating variable, the independent variable must be significantly associated with the dependent variable, the mediating variable must be significantly associated with the dependent variable, and the effect of the independent variable upon the dependent variable must be reduced when the mediator is entered simultaneously in the same equation (i.e., controlled for; see Figure 1).

Utilizing this procedure, two mediational models were proposed (see Figure 2) to test the theory that lack of inhibition leads to impaired QOL in phobic individuals. The first mediational model proposed that a diagnosis of specific phobia would be positively

associated with self-reported psychophysiological symptoms which in turn would be negatively associated with QOL. The second mediational model proposed that a diagnosis of specific phobia would also be positively associated with self-reported anxious cognitions that would, in turn, be negatively associated with QOL.

Method

Participants

Fifty-nine college undergraduate students enrolled in Psychology courses at Virginia Polytechnic Institute and State University served as participants (30 male, 29 female; age range = 18-23 years; M = 19.36 years; SD = 1.86). The sample was 83.1% Caucasian, 8.5% African American, 5.1% Asian, and 3.4% Hispanic, and self-reported income ranged from $0.00 to $30,000 (M = $7,211). These participants were identified via a larger online screening process. This online process occurred over three consecutive academic semesters and recruited approximately 3000 participants. From this pool, 95 candidates were invited to participate in Phase II. Of these 95 candidates, 59 participants met specific inclusion and exclusion criteria for Phase II as described below. The 59 participants were assigned to one of two groups based on diagnoses obtained from semi-structured diagnostic interviews (i.e., ADIS-IV): a specific phobia group (n=29; 13 male, 16 female; age range = 18-22 years; M = 19.10 years; SD = 1.01) and a no-diagnosis control group (n=30; 17 male, 13 female; age range = 18-23 years; M = 19.60 years; SD = 1.30). All participants were eligible to receive extra credit in their respective Psychology courses for their participation.

Online Screening Measures (Measures completed by all participants online)

Demographic Questionnaire (Appendix A). For purposes of the present study, a

questionnaire was developed which probed typical demographic areas (e.g., name, age, race, gender, SES) and included 25 additional questions designed to provide a broad overview of functioning and allow for the recruitment of the study's groups. This instrument was based largely upon the "Parent Information Form" and the ADIS-IV (described below) which are both already used by the Child Study Center at Virginia Tech.

RAND 36-item Health Survey 1.0 (RAND; a.k.a. Medical Outcomes Study 36-Item Short-Form Health Survey; MOS-SF-36; Ware & Sherbourne, 1992; Appendix B). The RAND is a 36-item, generic, health-related QOL instrument. This self-report assessed functioning in eight domains: physical functioning, role limitations because of physical health problems, bodily pain, social functioning, general mental health, role limitations because of emotional problems, vitality (energy/fatigue), and general health perceptions. Alpha coefficients have varied from .68 to .96 with test-retest correlations varying from .60 to .80 (2-week) and .43 to .90 (6-month) (Mendlowicz & Stein, 2000). The RAND is currently regarded as the most widely used generic measure of QOL, and has been validated in several normal and clinical populations (McHorney, Ware, Lu, & Sherbourne, 1994; McHorney, Ware, & Raczek, 1993; Mendlowicz & Stein, 2000). This generic QOL measure was administered online and used to assess participants' subjective ratings of overall mental and physical health.

Agoraphobic Cognitions Questionnaire and the Body Sensations Questionnaire (ACQ & BSQ; Chambless, Caputo, Bright, & Gallagher, 1984; Appendix C). The ACQ is a 14-item instrument designed to assess the frequency of catastrophic cognitions experienced when one is frightened or nervous. It is composed of 6 behavioral/social

items and 8 physiological items and has been found to have an overall alpha of .80. Test-retest reliability after approximately 2 weeks for the ACQ has been found to be .86. The BSQ is a 17-item measure which examines how much fear one experiences because of physiological symptoms (e.g., "heart palpitations"). Properties of the BSQ include an alpha of .87 and a test-retest coefficient of .67. These measures were also administered online and were used as potential mediators of QOL impairment.

Clinic Session Measures (Measures administered during clinic interview sessions)

Anxiety Disorders Interview Schedule for DSM-IV: Adult Version (ADIS-IV; Brown, DiNardo, & Barlow, 1994). The ADIS-IV is a widely known and frequently utilized semi-structured diagnostic interview. The ADIS-IV covers most *DSM-IV* diagnoses; however, it is especially designed to assess current episodes of anxiety disorders. Diagnoses were given clinical severity ratings by interviewing clinicians on a scale from 0 to 8 (4 and above indicate clinical significance). Previous versions (i.e., *DSM-R*; DiNardo, Moras, Barlow, Rapee, & Brown, 1993) have been found to have adequate test-retest reliability (.57 to .82) for *DSM-III-R* diagnoses. Additionally, they have been found to have high inter-rater reliability and internal consistency (DiNardo, O'Brien, Barlow, Waddel, & Blanchard, 1983). In the present study, the ADIS-IV was used to obtain diagnoses of specific phobia and other psychiatric disorders. Participants indicating clinically significant levels of psychopathology (including suicidal ideation or intent) were assessed and referred to local mental health facilities for treatment. Interviews were video-taped for inter-rater reliability. The interview was administered individually to screened participants.

Quality of Life Inventory (QOLI; Frisch, Cornell, Villanueva, & Retzlaff, 1992;

Appendix D). The QOLI is a 32-item self-report which probes respondents subjective ratings of life-satisfaction in 16 different areas of functioning (e.g., health, self-esteem, goals-and-values, play). Participants indicated degree of satisfaction in a particular domain and how important that domain was to them for their happiness. As a result, weighted scores were obtained which attempted to address the degree to which any one domain contributed to life-satisfaction. For example, one may have found himself very dissatisfied with his health; however, if he does not place a great deal of importance on health then the overall effect on life-satisfaction would not be great. For undergraduate students, a 2-3 week test-retest reliability coefficient of .80 has been obtained; Cronbach's alpha for the QOLI as administered to undergraduate students was .77 (Frisch et al., 1992). Additionally, the QOLI has been correlated significantly with several different measures of well-being and satisfaction; in addition, it has been negatively correlated with measures of anxiety and depression (Frisch et al., 1992). The present study used the QOLI to examine life-satisfaction in the phobic undergraduates.

Disability Profile (DP; Schneier et al., 1994; Appendix E). The DP is an 8-item clinician rated instrument. Clinicians rated current impairment (i.e., the past 2 weeks) and most severe impairment (i.e., during participant's lifetime) in QOL due to a particular emotional problem. Eight domains were rated: school, work, family, marriage/dating, friendships, other interests (e.g., hobbies, religion), activities of daily living, and suicidal behavior (NOTE: individuals indicating suicidal thoughts/intent were referred for treatment to a local mental health facility). Alpha coefficients of .87 and .90 have been found for current and lifetime ratings respectively, with adjusted item to total correlations of r=.53 - .81 for current ratings and r=.45 - .88 for lifetime ratings (Mendlowicz & Stein,

2000; Schneier et al., 1994). Additionally, total scores on the DP have been significantly higher for patients with social phobia than for controls for both current and lifetime ratings (Mendlowicz & Stein, 2000; Schneier et al., 1994). In the present study, this specific QOL measure was used to assess participants' degree of disability caused by a specific phobia as determined by the diagnostician. As such, it provided an external measure of QOL. The DP was videotaped and administered at the conclusion of the ADIS-IV.

Liebowitz Self-Rating Disability Scale (LSRDS; Schneier et al., 1994; Appendix F). The LSRDS is an 11-item self-report questionnaire. The LSRDS measures QOL specific to particular emotional problems and psychiatric disorders, and particularly has been used to study social phobia. Various areas of QOL were assessed for current functioning (i.e., the past 2 weeks) and for the worst impairment during a participant's lifetime: including school, work, family, marriage/dating, friendships, other interests (e.g., hobbies, religion), activities of daily living, suicidal behavior, alcohol abuse, drug abuse, and mood dysregulation (individuals indicating suicidal thoughts/intent were immediately referred for treatment to a local mental health facility). Alpha coefficients of .92 have been found for both current and lifetime ratings, with adjusted item to total correlations of r=.51 - .84 for current ratings and r=.39 - .81 for lifetime ratings (Mendlowicz & Stein, 2000; Schneier et al., 1994). Additionally, total scores on the LSRDS for both current ratings and lifetime ratings have been significantly higher for social phobics than for controls (Mendlowicz & Stein, 2000; Schneier et al., 1994). In the present study, this specific QOL measure was used to assess participants' subjective ratings of their degree of disability caused by a specific phobia.

Procedures

General Procedures

The present study was conducted in two phases. Phase 1 involved an online screening of participants using the self-report measures indicated above. Phase 2 involved recruiting participants from the online screening to present for clinic assessment sessions. The candidates contacted for Phase 2 completed the online questionnaires in such a way as to indicate a high probability of belonging to one of the two desired diagnostic groups (i.e., candidates who were likely to have pure diagnoses of specific phobia or no diagnosis at all). Participants eligible for Phase 2 completed additional self-report measures related to their QOL and had a semi-structured, diagnostic interview administered to them (i.e., ADIS-IV).

Phase 1

Phase 1 involved the online screening of participants. Participants completed the initial informed consent (see Appendix G), the demographic questionnaire, the ACQ & BSQ, and the RAND online. A portion of the demographic questionnaire was adapted from the ADIS-IV and designed to serve as a screening tool (in conjunction with other information from the screener) for the presence or absence of anxiety, depression, and specific phobia. Inclusion criteria for Phase 2 based upon participants' responses to the online screening were as follows:

For Phobic Participants

1) High reported levels of environmental or situation type phobia

2) High reported levels of animal type phobia

For Control Participants

1) Low reported levels of anxiety, depression, and phobia

Exclusion criteria for Phase 2 were as follows for both groups:

1) Elevated reported levels of depression

2) High levels of other type or blood-injection-injury type phobia,

3) Reported substance use or use of medications prescribed for mental illness

4) Reported participation in active psychotherapeutic intervention

5) Reported history of severe chronic mental or physical illness

6) Reported history of attention-deficit hyperactivity disorder or a learning disability

Based upon responses given on the demographic questionnaire, suitable candidates were contacted and invited to participate in Phase 2.

Phase 2

Those individuals identified from the screening process in Phase 1 were subsequently invited to the Child Study Center at Virginia Tech for a 2- to 3-hour assessment session during Phase 2. Upon arrival, participants were provided with the appropriate informed consent (Appendix H). Eligible and consenting participants completed the ADIS-IV and the DP with an examiner and completed the remaining QOL self-reports: the QOLI and the LSRDS. At the conclusion of the assessment session, participants were thanked for their participation and any necessary referrals and interventions were made in accordance with ethical research guidelines.

Results

Analytic Plan

Three series of analyses were conducted. The first set of analyses was descriptive

and examined the properties of the instruments used and any unpredicted group differences which might need to be controlled for in subsequent analyses (e.g., age, gender, and race). The second set of analyses were a series of multivariate analyses of variance (MANOVAs) to examine the differences in QOL between individuals with diagnoses of specific phobia and those without current diagnosable psychopathology. In addition, separate MANOVAs were performed for participant-rated QOL measures and the clinician-rated QOL measure (i.e., the DP) so as not to mix respondents and preserve multi-informant ratings. Subsequent univariate analyses were pursued as appropriate. Finally, a third series of analyses were performed to test the two proposed mediational models. These tests consisted of two series of multiple regression analyses (as per Baron & Kenny, 1986; Holmbeck, 1997).

Descriptive Analyses

Instruments. Means and standard deviations for each instrument were calculated and compared to published descriptive data (see Table 1). Data in the current study were found to be broadly consistent with published findings. Differences were observed; however, these discrepancies could be attributed to the characteristics of the samples being compared (e.g., published data for the RAND were based upon a sample that included severe physical diseases and ailments bringing their means down; published control data for the clinician-rated DP and participant-rated LSRDS are based upon only 14 control participants). Other examinations suggested very good comparability when sample characteristics were similar (e.g., the QOLI has published normative data for college undergraduate students that are nearly identical to those found in the current study). Finally, diagnostic characteristics of the phobic group are also presented (see

Table 2). Data from the ADIS-IV are summarized to describe the type of phobias, phobia severity, degree of avoidance, degree of interference, and degree of distress in the study's sample.

In addition to the comparisons described above, the present study employed two additional clinical examiners (i.e., 3 examiners total). As a result, 33% of ADIS-IV and DP interviews with participants were independently re-rated by the primary investigator to determine inter-rater reliability (the primary investigator has 5 years experience using ADIS interviews to diagnose anxiety and has personally conducted over 250 such interviews). Interviews to re-rate were chosen at random by a random number generator. Results from examination of the ADIS-IV interviews suggested excellent inter-rater reliability for the presence or absence of a specific phobia: $\kappa = 1.0$, $p = .014$. Inter-rater reliability results from the clinician-rated DP were also very good, $r\ (76) = .66$, $p < .001$.

Gender. Prior to examining the hypothesized group differences, a series of 15 one-way analyses of variance (ANOVAs) was conducted to identify any potential gender differences between the QOL and proposed mediator measures (see Table 1). Subsequent examination of the results, with a Bonferroni correction ($\alpha = .05$; .05 / 15 =.003), suggested no significant differences by gender.

Race. A series of 15 ANOVAs was also conducted to determine if QOL and proposed mediator scores differed significantly by race. Results after Bonferroni correction suggested no significant racial differences; however, several groups did have small sample sizes and should be interpreted with caution.

Age. In a similar fashion, a series of 15 corrected ANOVAs was conducted to determine if QOL and the proposed mediator measures differed significantly by age. The

results of these analyses suggested no significant age differences.

QOL Differences between Groups

QOL total scores. Three MANOVAs were conducted to test the hypothesis that broad measures of QOL would suggest impairment in those with specific phobia. In order to determine if those with a diagnosis of a specific phobia experienced more impairment in broad indices of general QOL than those individuals without any diagnosable *DSM-IV* psychopathology, a MANOVA was conducted which included the QOLI total score and the Rand's 8 summary scores (both completed by the participant). This analysis did not suggest a significant difference in general QOL between the two groups, F (9, 49) = 1.314, *ns*.

A second MANOVA examined the summary scores of specific measures of QOL in those with and without a specific phobia diagnosis. This analysis included the total recent and lifetime scores for the participant-rated LSRDS. This analysis did not suggest a significant difference, F (2, 56) = 0.431, *ns*.

Finally, a third MANOVA was performed in order to determine differences in specific QOL between the two groups as rated by clinicians on the DP. This analysis was conducted on the recent and lifetime scores from the clinician-rated DP. The results suggested a significant multivariate effect, F (2, 56) = 33.462, p <.001. Subsequent ANOVAs suggested that those participants with a diagnosis of specific phobia experienced significantly more recent and lifetime impairment in their functioning than controls as measured by the clinician-rated DP. In order to better examine clinical significance and impairment, effect sizes for these and any subsequent differences were calculated using Cohen's *d* (Cohen, 1988; Cohen, 1992). Effect sizes for the clinician-

rated DP recent and lifetime scores were considerably large, with the phobic's mean for the former being at more than the 98th percentile of the distribution (i.e., $d = 2.14$) for controls and the latter being at the 95th percentile of controls (i.e., $d = 1.61$; see Table 3 and Figure 3; i.e., effect sizes can be interpreted as average percentile standings with an effect size of 0.0 being equal to the 50th percentile; Cohen, 1988). Following these summary analyses, additional MANOVAs were conducted to determine the impact of specific phobia in specific domains of functioning and satisfaction.

Role functioning and satisfaction. Two MANOVAs were performed to examine the effects of specific phobia on role functioning and role satisfaction. The MANOVA for participant-rated role functioning included satisfaction with Goals, Money, and Work from the QOLI (3 weighted subscales) and impairment in School (both recent and worst in one's lifetime) and Work (only the worst in one's lifetime—this scale suggests not rating recent if one is a full-time student) from LSRDS (3 items). The results of this MANOVA were not significant, F (6, 52) = 0.804, *ns*. As a result, subsequent univariate analyses were not interpreted.

The second MANOVA, which examined clinician ratings of role functioning, was conducted on the recent and lifetime scores from the DP. Specifically, the 3 items School (recent and lifetime) and Work (lifetime) were used in the analysis. The results of this MANOVA suggested phobics experienced significant impairment in role functioning, F (3, 53) = 8.541, $p < .001$. Subsequent univariate analyses suggested phobics experience significantly more impairment in school (both recent and lifetime) than their undiagnosed counterparts (see Table 3). Results suggested large effects for school impairment with the recent mean for phobics being at the 86th percentile of the distribution for controls

(i.e., $d = 1.13$) and the lifetime mean being at the 90th percentile of controls (i.e., $d = 1.34$; see Table 3).

Social functioning and satisfaction. In order to examine the effects of a specific phobia on social functioning and satisfaction with social situations and relationships, two MANOVAs were performed which included 12 different items and 7 subscales. For participant-rated QOL, these subscales and items included the Social Functioning subscale from the RAND; the Play, Helping, Love, Friends, Children, and Relatives subscales from the QOLI; and the Family (recent and lifetime), Dating/Romantic Relationship (recent and lifetime), and Friends (recent and lifetime) items from the LSRDS. The resulting analysis of participant-rated social functioning suggested no significant differences between the groups, $F(12, 46) = 0.826$, *ns*.

The second MANOVA on items included the Family (recent and lifetime), Dating/Romantic Relationship (recent and lifetime), and Friends (recent and lifetime) items from the clinician-rated DP. Results from this analysis again suggested phobics were more impaired than controls, $F(6, 51) = 7.191$, $p < .001$. Univariate analyses suggested that phobics were significantly more impaired in both their recent and lifetime functioning with family and friends. For family functioning, there were medium (i.e., $d = 0.77$; 78th percentile) and large (i.e., $d = 1.21$; 88th percentile) effect sizes for the recent and lifetime scores respectively. Large effects were observed for both the recent (i.e., $d = 1.48$; 93rd percentile) and lifetime (i.e., $d = 1.32$; 90th percentile) differences in friendships.

Physical functioning and satisfaction. A MANOVA examining subscales from the RAND (i.e., Physical Functioning and Pain) and QOLI (i.e., Learning and Creativity),

and items from the LSRDS (i.e., items related to impairment in Activities of Daily Living, i.e., ADLs, and the Pursuit of Other Interests) suggested a significant multivariate effect, F (8, 50) = 2.924, p = .009. Subsequent univariate analyses, revealed two significant differences. Consistent with hypotheses, phobics reported significantly more dissatisfaction than controls with their ability to learn and gain new skills. Contrary to study predictions, however, phobics reported significantly less impairment in functioning from pain than did controls—perhaps due to their avoidance. Medium effect sizes are observed in both domains with the mean for phobic's learning satisfaction being at the 73rd percentile of control's (i.e., d = 0.60) and the phobic's mean for impairment from pain being at the 24th percentile of control's (i.e., d = -1.10).

As with previous domains, a second MANOVA examined items derived from the clinician-rated DP to examine physical functioning (i.e., ADLs and the pursuit of other interests). Physical functioning was suggested to be significantly more impaired in phobics than controls, F (4, 53) = 17.190, $p < .001$. Univariate analyses suggested phobics reported significantly more impairment in recent and lifetime completion of ADLs and participation in other interests and hobbies. Large effect sizes above the 87th percentile (i.e., d's $\geq$ 1.20) were observed for both domains at all time periods (see Table 3).

Health and satisfaction. Those participants with a diagnosis of specific phobia were also compared to controls on subscales and items examining health and one's satisfaction with health. The resulting MANOVA on 4 subscales (General Health, Energy/Fatigue, and Limitations Due to Physical Health from the RAND and Health satisfaction from the QOLI) suggested no significant differences between the two groups,

F (4, 54) = 0.721, *ns*. No clinician-rated health questions are included on the DP so no independent rating can be analyzed for comparison.

Mental Health and satisfaction. Additionally, a MANOVA examining mental health impairment and satisfaction was not significant, F (9, 49) = 1.965, *ns*. No difference was suggested between phobics and controls on the 9 subscales and items included: Limitations Due to Emotional Problems and Emotional Well-Being from the RAND; satisfaction with Self-Esteem from the QOLI; and items related to alcohol, substance use, and overall mood from the LSRDS. As with the analysis for the health domain, no mental health items are included in the clinician-rated DP.

Environmental/Contextual functioning and satisfaction. Finally, one MANOVA examining participants reported total income, dwelling (i.e., dorm, apartment, or house), and satisfaction with their Home, Neighborhood, and Community (all are subscales from the QOLI) suggested no significant difference between those with a phobia and controls, F (5, 43) = 0.840, *ns*. No independent ratings or reports of these areas were available for further consideration.

Mediators of QOL

Cognitions. In order to examine potential mediators of impaired QOL, the current study employed the ACQ and BSQ as measures of the frequency of catastrophic cognitions and the intensity of experienced physiological symptoms. As per the previously reviewed theories, it was hypothesized that the frequency of phobics' catastrophic cognitions and the severity of their physiological symptoms would lead to impairment in QOL. Results from the previous multivariate analyses suggested use of the DP total scores (both recent and lifetime) and the QOLI's Learning scale as the

dependent variables in mediational modeling. As a result, 6 mediational models were considered (3 with the ACQ and 3 with the BSQ). In the interest of space and clarity, these results are summarized in Table 4 and Figures 4 through 9. As per Baron and Kenny (1998) and Holmbeck (1997), the first equation for each of the three models examined the relationship between the study groups (dummy coded) and the proposed mediator (i.e., the ACQ). These regressions, however, were not significant. The second set of equations examined the relationship between the study groups and the dependent variables (i.e., 1 equation examining DP recent scores, 1 examining DP lifetime scores, 1 examining Learning scores) were all significant. Finally, the third set of equations examining the relationships between the proposed mediators and the dependent variables failed to reach significance. As a result, these findings suggested further mediational modeling would be inappropriate as the proposed mediator was not associated with the groups or dependent measures in question (see Table 4 and Figures 4-9).

Body sensations. Analyses examining participants' experience of physiological symptoms were also performed as specified above using the data from the DP, QOLI, and BSQ. Subsequently, the first mediational tests were competed by regressing the total score from the BSQ onto the dummy coded group variable (i.e., those with a diagnosis of specific phobia vs. those with no current diagnosable *DSM-IV* psychopathology). The resulting analysis suggested no significant relationship (see Table 4). The second equations, regressing the dependent variables onto the independent variable, were all significant as reported above. Finally, the third set of equations regressing the dependent variable onto the BSQ scores also failed to reach significance. As a result, further mediational analysis was not possible as again the proposed mediator was not

significantly associated with the study groups or the dependent variable.

Discussion

This study is the first attempt at an in-depth analysis of QOL in individuals with specific phobia and also represents the first effort to identify ways in which anxiety may affect QOL. A priori hypotheses indicated that total QOL and various domains of functioning and satisfaction (role, social, physical, health, and mental health, but not environmental/contextual) would be impaired in those with specific phobia compared to controls. Moreover, it was predicted that a lack of cognitive and physiological inhibition resulted in this impairment. Essentially, it was hypothesized that an inability to control catastrophic cognitions and physiological symptoms would lead to impairment in functioning and satisfaction. These hypotheses were only partially substantiated.

Quality of Life Findings

Synopsis. Consistent with the aims of this study, a diagnosis of specific phobia was found to be significantly impairing in the general domains of role functioning, social functioning, physical functioning, and total functioning when considering the specific phobia diagnosis (i.e., specific QOL). Also consistent with hypotheses, no significant difference was found in environmental/contextual measures of QOL. Even so, the impact of these findings is qualified in as much as significant results were primarily associated with the clinician-rated DP. With the exception of the MANOVA for participant-rated physical functioning, participants' own ratings of QOL generally did not support the study's QOL impairment hypotheses. In general, phobic participants did not believe themselves to be any more or less impaired or satisfied than control participants who had no diagnosable *DSM-IV* psychopathology.

In this respect, the current study corroborates the findings from Meyer et al. (2004) suggesting no significant difference in participant-rated QOL between phobics and no-diagnosis controls. This study also calls the interpretation of QOL findings from the extant specific phobia literature into question. Previous studies examining the effects of a comorbid phobia may have inaccurately concluded that a specific phobia significantly impaired QOL without performing the analyses necessary to partial out the effects of other diagnoses to examine the impact of just the phobia (e.g., Goisman et al., 1998; Meyer et al., 2004).

Participant-rated QOL. Phobics in the current study did, however, rate themselves as being statistically and clinically significantly different from controls in two areas: impairment in functioning from pain, F (1, 57) = 7.208, p = .009, and satisfaction with learning and skill acquisition, F (1, 57) = 5.204, p = .026. On the RAND, the pain scale is composed of two questions: "How much bodily pain have you had during the last four weeks," and "During the past four weeks, how much did pain interfere with your normal work (including work outside the home and housework)?" Closer examination of the items composing this scale suggested that the result is largely related to responses to the first question. Specifically, two ANOVAs corrected for multiple analyses suggested that phobics reported experiencing significantly less bodily pain over the 4 weeks preceding completion of the RAND, F (1, 57) = 7.001, p = .011.

Interestingly, this result is counter to the current study's hypotheses. Potentially, this finding resulted from the aptitude phobics demonstrate for avoidance. It may be the case that their theorized lack of inhibition of cognitive, behavioral, and psychophysiological processes may lead them to attend warily to innocuous stimuli, as

proposed, and avoid perceived threats. Presumably, control participants would encounter more potentially dangerous and painful situations by not avoiding these small threat cues. Though speculative, it may be this avoidance of innocuous stimuli which leads phobic individuals away from common painful situations (e.g., certain household chores, sports, etc.). Further examination of the data offer some support to this possibility as phobics were rated by clinicians as significantly more impaired in their ability to complete activities of daily life, do chores, participate in hobbies, and compete in sports and the like. Even so, it would seem unlikely that a circumscribed fear would have this impact. As a result, more study into the eccentricities of phobic avoidance is necessary to corroborate this hypothesis.

The finding with respect to phobics being dissatisfied with their ability to learn and acquire new skills is also interesting but not without precedent in the literature. Several studies have suggested objective, clinically significant, impairment in intellectual functioning and achievement (i.e., not self-report as with QOL but based upon objective testing) among those diagnosed with an anxiety disorder compared to those with other disorders (Hodges & Plow, 1990; Davis & Ollendick, 2005). This effect, however, remains unexamined in those with more circumscribed anxiety as in pure specific phobia.

Briefly, it has been suggested that, consistent with Beck's theory described above, preoccupation with anxious cognitions interferes with processing and performance (Davis & Ollendick, 2005). This hypothesized interference has yet to be formally evaluated and investigation of the generalization of this effect to other situations beyond the psychoeducational testing environment has not been conducted (i.e., classroom tests, broader learning deficits, etc.). Somewhat consistent with this theory, however, Davis

(2005) did find that college undergraduates reporting a learning disability diagnosis experienced statistically significant impairment in general QOL that was mediated by ADIS-type self-reported ratings of anxiety. These results suggest that anxiety impairs QOL in those with existing learning difficulties. Taken together, the current finding may be explained as tentative support for the generalization of this anxiety-related intellectual decrement and the metacognitive awareness of this deficit in phobics. Even so, this effect requires more systematic observation and experimentation.

Clinician-rated QOL. In the present study it was primarily the clinicians interviewing the participants who were able to discern impairment in QOL experienced by and reported by phobics (see Table 3). Participants with a specific phobia were rated as being more impaired than controls by interference from the specific phobia (i.e., impairment in specific QOL and not general QOL). In particular, phobics' ability to function at school, with family, and with friends, and their ability to complete activities of daily life and other hobby/interest related chores and activities were all impaired. This difference in functional impairment due to the presence of a phobia was suggested to exist over the course of participants' lifetimes (i.e., during one's "Lifetime/ worst impairment") when the phobia symptoms were reported to be at their greatest. Even so, on average these ratings did not move beyond the level of "distress but not clear impairment." This low rating of functional impairment, however, is not unexpected due to the circumscribed nature of specific phobia. The present study hypothesized significant effects compared to controls, but not effects similar to other more pervasive *DSM-IV* disorders (e.g., major depressive disorder).

Participants with specific phobia were also found to have experienced greater

recent functional impairment compared to controls (i.e., within the "Past 2 weeks"). This recent impairment occurred in all of the domains reported above. Individuals with a specific phobia diagnosis on average again experienced "distress" but not severe or extreme forms of impairment.

Even though statistically significant results have been reported, it remains important not to equate statistical significance with clinical significance. The clinical significance of the QOL findings of this study were evaluated using Cohen's *d* to calculate effect sizes (see Table 3). The findings reported above signify clinically significant impairment as large effect sizes were observed in 4 of the 6 recent clinician-rated domains (note: work does not receive a recent rating) and in 5 of the 7 lifetime domains. In fact, medium to large effect sizes were observed for all clinician-rated domains with the exceptions of marriage/dating. Effect sizes for statistically significant differences suggested the means for phobic's scores ranged from the 78th to the 97th percentile of the respective distribution for control's scores. As a result, the differences between clinically-rated specific QOL domains for phobics and controls are both statistically and clinically significant (with exception of the domains noted previously).

Even so, an interesting paradox exists as QOL is, by definition, a measure of impairment from the perspective of the participant. The QOL literature does provide for instances in which the report of the individual may be skewed and require further clarification from external examiners and reporters (e.g., with schizophrenics and severely impaired perceptions of reality). In particular, Katschnig (1997) warns of a standard drift fallacy in which one's goals and norms are adjusted downward to become consistent with functioning. In the current study, two plausible explanations exist which

might explain these contradictory findings.

Potential Explanations for Discrepant Findings

Quality of life is not impaired. First, QOL may not be impaired in individuals with specific phobia—essentially, the findings then would support the null hypothesis. The discrepancy between participant-rated and clinician-rated measures is the result of inaccurate or biased clinician ratings. Potentially, examiners became biased in assigning their DP ratings by having completed the ADIS-IV shortly before with the participant (i.e., while examiners were blind to whether a participant was a phobic or control candidate upon the candidate's arrival, the examiner needed to know what diagnosis to rate for the disease-specific DP). This may have resulted in artificially high scores for the phobic participants and articificially low scores for controls, consistent with rater knowledge of diagnostic condition. However, while this explanation (i.e., experimenter bias) may be the most parsimonious resolution of the participant-clinician discrepancy, this explanation does not seem plausible given certain methodological checks (e.g., interviewer training, acceptable inter-rater reliability), *DSM-IV* criteria, and the data from the study.

Data from the ADIS-IV suggested that phobic participants reported on average "a lot" of fear (6.17 on a scale from 0.00 to 8.00) and "a lot" of avoidance (6.03; see Table 2). These ratings in combination with other participant supplied information led clinicians to assign an average clinician severity rating of 5.38 (4.00 and above is considered within the clinically significant range). This rating suggests that phobics in the study were, on average, diagnosed with specific phobias in the "Markedly Disturbing/Disabling" range.

The clinicians' QOL ratings should also be considered. Closer examination of the mean clinician ratings for phobic and control participants suggest ratings for phobic individuals of 0.41 to 1.28 across domains and 0.00 to 0.14 for control participants. With one exception, these means are between "No impairment from this disorder" (i.e., 0 on the 0 to 4 DP rating scale) and "Distress but not clear impairment" (i.e., 1 on the 0 to 4 DP rating scale). As a result, the statistically and clinically significant differences between these two groups reference increased distress and impairment but impairment that is short of "Moderate impairment" (i.e., 2 on the DP rating scale) in phobic participants. Taken together, these results suggest clinicians reliably rated phobic participants as having phobias of moderate severity with minimal but significant distress and impairment across five QOL domains.

Results are consistent with specific phobia diagnostic criteria and descriptions (cf. *DSM-IV*). A specific phobia is an intense, enduring fear of an identifiable object or situation that leads to anxiety symptoms, distress, and avoidance. A phobia is also suggested to impact QOL: "The avoidance, anxious anticipation, or distress in the feared situation(s) interferes significantly with the person's normal routine, occupational (or academic) functioning, or social activities or relationships, or there is marked distress about having the phobia" (i.e., Criterion E; *DSM-IV*). In sum, this data would suggest the need for an alternative hypothesis for the QOL discrepancy.

Avoidance, attitudes about interference, and cognitive dissonance. Second, it may be that phobics are misinterpreting or understating the significance of the interference associated with their phobias. Phobic individuals do not experience the degree of impairment associated with a psychotic disorder. They may, however, exhibit

subtle cognitive misinterpretations or attitudinal changes consistent with the standard drift fallacy—the resolution of cognitive dissonance.

In their classic study, Festinger and Carlsmith (1959) tested two derivations of cognitive dissonance theory:

> 1) If a person is induced to do or say something which is contrary to his private opinion, there will be a tendency for him to change his opinion so as to bring it into correspondence with what he has done or said [and]
>
> 2) The larger the pressure used to elicit the overt behavior (beyond the minimum needed to elicit it) the weaker will be the above-mentioned tendency. (p. 210)

This early and seminal study had three groups (i.e., control and 2 experimental groups) of male undergraduate students participate in 60 minutes of monotonous tasks. Subsequently, members from the two experimental groups were individually invited to become faux confederates for the experimenter by reporting their "enjoyment" of the boring task to the next participant (i.e., the real study confederate). Participants believed they would be paid either $1.00 or $20.00 for speaking with the next participant creating the two experimental groups. Following their discussion with the student confederate, participants were then covertly interviewed about their participation to assess their attitudes about participation (i.e., an experimenter said to be completing a participant-satisfaction evaluation of the psychology department's experiment system). Results suggested participants receiving $1.00 were significantly more likely to rate the monotonous study as enjoyable and were more willing to participate in a similar study than were participants receiving $20.00. Results were interpreted to support the theory that an uncomfortable or aversive internal state (i.e., dissonance) arose from displaying

behavior that countered the participants' true attitudes (i.e., lying about how enjoyable the study was conflicted with the belief that it was boring). Festinger (1957) suggested dissonance arose from several sources including conflicts between attitudes and behaviors, logical inconsistencies, and clashes between personally held attitudes and socially accepted norms. It was hypothesized that dissonance for the group receiving $1.00 was resolved though attitudinal change—changing the attitude to bring it into correspondence with the dissonant behavior displayed (Festinger & Carlsmith, 1959). As a possible explanation of the current study's QOL findings, phobic avoidance will be framed within cognitive dissonance theory.

Phobic individuals receive negative reinforcement for avoiding fear-inducing stimuli—presumably through the withdrawal of physiologic symptoms, worry, and aversive fear states. This amount of negative reinforcement should vary inversely to the proximity and valence of the stimulus. For example, a very aversive and close experience with a phobic stimulus resulting in an individual fleeing a traumatic event would create a great deal of negative reinforcement. Conversely, phobic individuals receive smaller amounts of negative reinforcement for more adept and subtle acts of avoidance (e.g., avoiding real stimuli at a distance, avoiding imagined but plausible stimuli/situations all together). As a result, and consistent with Festinger and Carlsmith's (1959) notion, phobic individuals adept at avoidance would experience increasing levels of dissonance as their avoidant behavior increasingly violated social norms and beliefs about typical interactions with stimuli. Simultaneously, phobic individuals access decreasing levels of negative reinforcement with greater and more adept avoidance. Consequently, dissonance theory would predict attitudinal change.

As an illustration, a dog phobic would experience differing intensities of fear and physiologic arousal (e.g., heart rate, heart rate variability) in a situation involving exposure to an unleashed, looming, aggressive dog in close proximity than in a situation involving a leashed, unthreatening, and uninterested dog at a distance (see Figure 10). Presumably, there would also be differing amounts of negative reinforcement for avoiding these situations. In the first instance (i.e., aggressing dog), a larger amount of negative reinforcement is received for avoiding a dog in a situation that is consonant with socially accepted norms. Being afraid of and avoiding a large, unrestrained, attacking dog is understandable and such avoidance is reinforced with escape from intense sensations of fear and physiology (cf. Festinger & Carlsmith's, 1959, $20.00 group). Moreover, such an experience is temporarily likely to generate a great deal of readily apparent interference in QOL domains (e.g., avoiding that road, avoiding similar dogs, difficulty collecting oneself, etc.).

In the second instance (i.e., passive dog), a small amount of negative reinforcement is received for avoiding a dog in a situation that is dissonant with socially accepted norms (e.g., crossing the street to avoid the dog or even walking a block around the dog). Being afraid and avoiding a distant, restrained, and uninterested dog is more difficult to resolve internally and such avoidance is negatively reinforced with relatively less reduction in aversive sensations (cf. Festinger & Carlsmith's, 1959, $1.00 group). Consequently, a phobic individual's behavior with the first aggressive dog is consonant and so attitudes about phobic interference remain unchanged. However, the same phobic individual's avoidance of the passive dog is dissonant with personal attitudes about normative avoidance. As a result, cognitive dissonance theory would predict a change in

the belief that the avoidance is interfering to bring the dissonant attitude into correspondence with behavior. The hypothesized result would be a belief that the avoidance does not interfere with the phobic individual's life.

An adept phobic individual's avoidance may maximize the conditions for attitudinal change by approximating the threshold for maximal dissonant behavior for minimal reward—avoiding at greater distances produces the least reward but is increasingly at odds with personal understandings of normative behavior. Other characteristics of the specific phobia itself may serve to intensify this effect (e.g., the degree to which the fear and anxiety from the phobia accentuates the "dissonant experience"). It is in this way that the denial of the aversive and monotonous effects of participating in the Festinger and Carlsmith (1959) study mimics a phobic individual's denial of the aversive and distressing effects of fear and avoidance. If so, the corresponding attitudinal change required to reduce the dissonant state is an attitude that minimizes the degree of impairment in QOL for these behaviors.

Recent research and theoretical forays into cognitive dissonance theory lend additional support to the proposed model. For example, Stone and Cooper (2001) suggested a Self-Standards Model of Cognitive Dissonance in which "dissonance begins when people commit a behavior and then assess the behavior against some meaningful criterion of judgment" (p. 228). Their model asserts that dissonance emerges from the interpretation following a behavior. Further, they propose that two standards of interpretation are used: personal standards (i.e., "behavior…compared to one's own, idiosyncratic expectancies) and normative standards (i.e., "behavior is compared to the perception of what most people in the culture believe is foolish or immoral;" p. 231).

This distinction between normative and personal standards matches well with the current study's description. Even so, a significant sequence of research would be needed to substantiate the current study's model. Still, the possibility is an intriguing one.

Mediational Model Findings

A final consideration is the outcome of the mediational hypotheses. Guided by the proposed model of inhibition (Friedman & Thayer, 1998a, 1998b; Thayer & Friedman, 2002), differences were predicted between the control and phobic groups. These proposed differences were not born out in mediational tests. Control and phobic groups did not differ significantly in their report of the frequency of catastrophic symptoms or the intensity of body sensations. Also, neither mediator was associated with their respective models' dependent variables. As a result, there was no support for the proposed mediators' associations with QOL or a diagnosis of specific phobia.

Two possible explanations for this result seem plausible. First, it may be that QOL impairment in those with specific phobia is not mediated by cognitions or psychophysiology. In this instance, it is necessary to search for other potential mediators of this effect. However, this conclusion and the findings from this study would also question the findings of a considerable amount of literature (e.g., Friedman & Thayer, 1998a, 1998b; Thayer & Friedman, 2002) and also the diagnostic features of specific phobia in the *DSM-IV*. As a result, this explanation seems unlikely.

Second, and more plausible, it may be that the problem lies in the use of self-report. The current study incorporated instruments designed to assess a more generalized type of anxiety (i.e., agoraphobia and panic) and may not have been sensitive enough to detect differences in a circumscribed phobia. Also, the current study lacked objective

replication of the cognitive and psychophysiologic self-reports. In particular, the intensity of a phobic individual's physiological symptoms and the frequency of his or her cognitions may mediate impairment in QOL, but not in such a way as is readily detectable to that individual outside of a phobic situation. Objective assessments with participants engaged in the phobic behavior, including psychophysiologic (e.g., heart rate) and cognitive (e.g., subjective units of distress) components, would be ideal and should be considered before discounting the proposed mediators.

Limitations and Future Directions

While interesting and potentially important, the present study did have several limitations. First, the results of this study were limited by the sample employed. This study examined QOL in college undergraduates diagnosed with specific phobia. The degree to which results generalize to other age groups (e.g., children, older adults) and other environments remains unexplored. In addition, the current study examined QOL in a individuals who all had "specific phobia." Researchers have suggested that phobia types are heterogeneous and the intensity and quality of symptoms may differ by type (e.g., Antony, Brown, & Barlow, 1997). It may also be the case that QOL differs by phobia type. Trends in data from the current study support this hypothesis. Trends in participant's distress ratings from the ADIS-IV (0 to 8 scale) suggested animal type phobics experience less distress from their phobia than did environmental/situational type (1.80 compared to 4.56). Participant's interference ratings from the ADIS-IV suggested similar trends: Interference for animal type was 2.05 while interference for environmental/situational type was 3.56. Future investigators should consider separating phobia types in subsequent studies.

Second, the results of this study could be expanded using different methodology. Results of this study emphasize the need for multi-method, multi-informant methodology. To that end, the current study would have benefited from a third informant on participant's QOL. Corroborating reports from a friend or family member would have lent additional support to one of the two interpretations of the discrepant QOL findings. In addition, the current study methodology examines only a single point in time. Future investigators should consider a longitudinal design to better understand the effects of a phobia on QOL over time.

Third, the results of this study suggest the simultaneous assessment of a dissonance paradigm may be fruitful. For example, a dissonance paradigm utilizing the typical counterattitudinal essay procedure (i.e., participants are asked to write an essay evoking dissonance under a variety of experimenter controlled conditions) could be created to investigate the hypothesized change in interference. Investigators could also examine the interference ratings of phobic participants immediately following close proximity and distant exposures to evocative stimuli. The proposed model would suggest ratings for proximal encounters should be higher than for distal exposures. The degree to which the symptoms of specific phobia contribute to or enhance dissonance should also be investigated. As of yet, any application of cognitive dissonance theory to avoidance and attitude change in specific phobia remains unexplored.

Implications

Implications from the current study are two-fold. First, results from the current study suggested individuals with a specific phobia experienced significant distress and impairment in their QOL compared to those with no current *DSM-IV* diagnosis. This

study served to expand the literature on QOL in those with anxiety disorders by employing a no-diagnosis control comparison group, using multi-informant assessment, and by examining multiple domains of function and satisfaction. As a result, this study represented the first attempt to systematically capture the degree of impairment inflicted from specific phobia and the domains affected from both the participant's and clinician's points of view.

Second, the discrepant QOL results have implications for subsequent treatment. Results of this study suggested phobic individuals do not believe they suffer impairment from their fear and avoidance. This attitude may serve to prevent phobic individuals from seeking therapy for an easily treatable condition (e.g., Öst, 1997 detailed a treatment that takes as little as 3 hours). Moreover, to what extent does this belief hamper treatment itself? Is a part of treatment changing a phobic individual's beliefs about the degree of interference? Research has suggested dissonance may play a key role in the actual reduction of phobic avoidance. For example, MacDonough, Adams, and Tesser (1973) found that desensitization treatments for snake-phobic women were most successful when the students had more perceived choice during the exposure, which was thought to cause more dissonance.

In conclusion, this study adds to the growing literature on QOL in psychiatric disorders and anxiety in particular. This study attempted to assess the degree of impairment across multiple domains using multiple informants. A lingering issue following from this study involves the desirability of using multiple informants. Given the discrepancy between the clincian and participant and QOL's focus on the participant him/herself, is this methodology appropriate? Perhaps, the resolution is in distinguishing

between the individual's self-rated QOL and the clincian's rated impairment—essentially a comparison between subjective and objective observations. In the final analysis, the issue which should be emphasized is not the mental illness diagnosed by the professional and the potential for overpsychopathologizing, but the participants' potential for greater mental health and growth that might be realized as a result of this process.

Future investigations would do well to continue these approaches as several unique findings were observed that would otherwise have been lost. In addition to suggesting the distressing effects of specific phobia on QOL, this study also proposed a unique model of attitude change related to phobic avoidance—by way of cognitive dissonance. Future research should continue to investigate the veracity of this proposed model, the QOL of anxious and fearful individuals, and the impairments and strengths of those with specific phobia.

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Appendix A

Demographic Questionnaire

(All personal information will be kept strictly confidential, will not be released to anyone outside of the current project except as required for safety or legal issues, and shall be destroyed at the conclusion of this investigation)

Date: _____

Name: _____

Age: _____ **Date of Birth**: _____ **Sex**: _Female _Male

Dwelling (please describe where you live):

Type:	Floor on Which You Live:	
_House	_1st	_4th
_Apartment	_2nd	_5th
_Dormitory	_3rd	_6th or greater

Did you choose your residence, at least in part, to avoid heights or snakes? _Yes _No

Race: _Caucasian _Hispanic _Other: _____
_African American _Asian

Telephone: (home)_____ Best Times to Call: _____

(cell)_____ Best Times to Call: _____

Marital Status: _Single _Married _Separated _Remarried
_Engaged _Divorced _Widowed

Are you currently in a romantic relationship? _Yes _No

Is this relationship exclusive? _Yes _No

Current Grade Point Average (as displayed in unofficial transcripts in Hokie Spa): _____

Please Provide Your IRS Income (as reported on your last filing with the IRS): _____

Please Estimate Your Total Income (above IRS + loans + parents' help/gifts/etc.): _____

How far did your mother go in school?

_less than 7th grade
_completed 9th grade
_partial high school education (10th or 11th grade)
_graduated from high school
_graduated from trade school or business school
_attended college or specialized training program
_graduated from college
_completed graduate school

What is her job title? _____

How far did you father go in school?

__less than 7th grade
__completed 9th grade
__partial high school education (10th or 11th grade)
__graduated from high school
__graduated from trade school or business school
__attended college or specialized training program
__graduated from college
__completed graduate school

What is his job title? _____

Questions-Please answer the following to the best of your abilities.

1. Are you currently at Virginia Tech? __Yes __No

If Yes, what description best captures you (choose one answer)?
__Freshman
__Sophomore
__Junior
__Senior
__Graduate/Other Student
__Faculty/Staff

If Yes, how long have you been at Virginia Tech (choose one answer)?
__< 6 months
__6 months to 1 year
__1 to 2 years
__2 to 3 years
__3 to 4 years
__4 to 5 years
__> 5 years

2. Are you employed during this current academic semester? __Yes __No

If Yes, please provide your job title and a brief description of your duties:
Job Title: _____

Duties: _____

If Yes, how many hours per week do you work on average (choose one answer)?
__0-10
__11-20
__21-30
__31-40
__> 40

3. Were you employed during this past summer? __Yes __No

If Yes, please provide your job title and a brief description of your duties:
Job Title: _____

Duties: _____

If Yes, how many hours per week do you work on average (choose one answer)?

__0-10
__11-20
__21-30
__31-40
__> 40

4. Have you ever been hospitalized (inpatient) for an emotional difficulty? __Yes __No

5. Have you ever received psychiatric or psychological treatment (outpatient)? __Yes __No

If Yes, please provide a brief history of treatment:
1)When?:_____ For what reason?:_____

Nature of treatment?: _____

Result of treatment?:_____

2)When?:_____ For what reason?:_____

Nature of treatment?: _____

Result of treatment?:_____

6. Have you ever taken medication for an emotional difficulty/problem? __Yes __No

If Yes, please provide a brief history of treatment:
1)What Medication?:_____ When?:_____

For what reason?:_____ Result?:_____

2)What Medication?:_____ When?:_____

For what reason?:_____ Result?:_____

7. Have you ever been diagnosed with a major medical problem/disease? __Yes __No

If Yes, please provide a brief description:
1)What Diagnosis?:_____ When?:_____

Result of treatment?:_____

2)What Diagnosis?:_____ When?:_____

Result of treatment?:_____

8. Have you ever been diagnosed with a learning disability? __Yes __No

9. Have you ever been diagnosed with ADD or ADHD? __Yes __No

10. Do you drink alcohol? __Yes __No

11. Do you use substances? __Yes __No

12. Do you consider yourself an anxious person? __Yes __No

13. How anxious do you feel during an average 2-week period?

_0 _1 _2 _3 _4 _5 _6 _7 _8
No Anxiety *A Little* *Some* *A Lot* *Very Anxious*

14. Do you consider yourself a sad/depressed/hopeless person? _Yes _No

15. How sad/depressed/hopeless do you feel during an average 2-week period?
_0 _1 _2 _3 _4 _5 _6 _7 _8
No Sadness *A Little* *Some* *A Lot* *Very Sad*

16. Have you been convicted of anything other than minor traffic offenses? _Yes _No

17. Do you believe you have (choose one answer):
_More friends than most people your age
_The same number of friends as most people your age
_Fewer friends than most people your age

18. How many "good" friends do you have (choose one answer)?
_0
_1-3
_4-6
_>6

19. How many people consider YOU one of their "good" friends (choose one answer)?
_0
_1-3
_4-6
_>6

20. Do you wish you had more friends? _Yes _No

21. How would you rate your overall "quality of life?"
_0 _1 _2 _3 _4 _5 _6 _7 _8
Very Poor *Poor* *Average* *Good* *Very Good*

22. Are you more afraid of HEIGHTS than other people your age? _Yes _No

If YES, how long have you been afraid? _____ Years _____ Months

If YES, how long has your fear been problematic? _____ Years _____ Months

23. How afraid of HEIGHTS are you?
_0 _1 _2 _3 _4 _5 _6 _7 _8
No Fear *A Little* *Some* *A Lot* *Very Fearful*

24. Are you more afraid of SNAKES than other people your age? _Yes _No

If YES, how long have you been afraid? _____ Years _____ Months

If YES, how long has your fear been problematic? _____ Years _____ Months

25. How afraid of SNAKES are you?
_0 _1 _2 _3 _4 _5 _6 _7 _8
No Fear *A Little* *Some* *A Lot* *Very Fearful*

For the following questions, please rate each of the following:

26. Animals (for example, snakes, spiders, dogs, bees/insects)

a. How FEARFUL are you of certain kinds of ANIMALS or INSECTS?

0	1	2	3	4	5	6	7	8
No Fear		Mild Fear		Some Fear		Severe Fear		Very Severe Fear

b. How often do you AVOID these ANIMALS or INSECTS?

0	1	2	3	4	5	6	7	8
Never Avoid		Rarely Avoid		Sometimes Avoid		Often Avoid		Always Avoid

c. How much are you BOTHERED by this fear or how much has it INTERFERED in your life (whichever rating is higher; check none if no fear)?

0	1	2	3	4	5	6	7	8
None		Mild		Some		Severe		Very Severe

d. Do you experience FEAR or ANXIETY almost every time you are in a situation with that animal or insect (check no if no fear)?

YES or NO

27. Natural Environment (for example, heights, storms, water, dark)

a. How FEARFUL are you of certain kinds of ENVIRONMENTS or PLACES?

0	1	2	3	4	5	6	7	8
No Fear		Mild Fear		Some Fear		Severe Fear		Very Severe Fear

b. How often do you AVOID these ENVIRONMENTS or PLACES?

0	1	2	3	4	5	6	7	8
Never Avoid		Rarely Avoid		Sometimes Avoid		Often Avoid		Always Avoid

c. How much are you BOTHERED by this fear or how much has it INTERFERED in your life (whichever rating is higher; check none if no fear)?

0	1	2	3	4	5	6	7	8
None		Mild		Some		Severe		Very Severe

d. Do you experience FEAR or ANXIETY almost every time you are in that environment or place (check no if no fear)?

YES or NO

28. Blood/Injection/Injury (for example, seeing blood, getting an injection, having blood drawn)

a. How FEARFUL are you of BLOOD, INJECTIONS, or NEEDLES?

0	1	2	3	4	5	6	7	8
No Fear		Mild Fear		Some Fear		Severe Fear		Very Severe Fear

b. How often do you AVOID INJECTIONS, NEEDLES, or MEDICAL CARE?

0	1	2	3	4	5	6	7	8
Never Avoid		Rarely Avoid		Sometimes Avoid		Often Avoid		Always Avoid

c. How much are you BOTHERED by this fear or how much has it INTERFERED in your life (whichever rating is higher; check none if no fear)?

0	1	2	3	4	5	6	7	8
None		Mild		Some		Severe		Very Severe

d. Do you experience FEAR or ANXIETY almost every time you see blood or have to get an injection (check no if no fear)?

YES or NO

29. Situational (for example, flying, driving, elevators, small enclosed spaces)

a. How FEARFUL are you of certain kinds of SITUATIONS or PLACES?

0	1	2	3	4	5	6	7	8
No Fear		Mild Fear		Some Fear		Severe Fear		Very Severe Fear

b. How often do you AVOID these SITUATIONS or PLACES?

0	1	2	3	4	5	6	7	8
Never Avoid		Rarely Avoid		Sometimes Avoid		Often Avoid		Always Avoid

c. How much are you BOTHERED by this fear or how much has it INTERFERED in your life (whichever rating is higher; check none if no fear)?

0	1	2	3	4	5	6	7	8
None		Mild		Some		Severe		Very Severe

d. Do you experience FEAR or ANXIETY almost every time you are in that situation (check no if no fear)?

YES or NO

30. Other (for example, seeing doctor/dentist, choking, vomiting, getting an illness, costumes)

a. How FEARFUL are you of certain kinds of OTHER FEARS (see list above)?

0	1	2	3	4	5	6	7	8
No Fear		Mild Fear		Some Fear		Severe Fear		Very Severe Fear

b. How often do you AVOID these OTHER FEARS (see list above)?

0	1	2	3	4	5	6	7	8
Never Avoid		Rarely Avoid		Sometimes Avoid		Often Avoid		Always Avoid

c. How much are you BOTHERED by this fear or how much has it INTERFERED in your life (whichever rating is higher; check none if no fear)?

0	1	2	3	4	5	6	7	8
None		Mild		Some		Severe		Very Severe

d. Do you experience FEAR or ANXIETY almost every time you are in that situation or see the thing (see list above; check no if no fear)?

YES or NO

Appendix B

RAND 36-item Health Survey 1.0

Please circle the number of the response which best describes you.

1. In general, would you say your health is:

1	2	3	4	5
Excellent	Very Good	Good	Fair	Poor

2. Compared to one year ago, how would you rate your health in general now?

1	2	3	4	5
Much Better	Somewhat Better	About the Same	Somewhat Worse	Much Worse

3. The following are about activities you might do during a typical day. Does your health limit you in these activities? If so, how much?

a. Vigorous activities, such as running, lifting heavy object, participating in strenuous sports

1	2	3
Yes, Limited a lot	Yes, Limited a little	No, Not Limited at all

b. Moderate activities such as moving a table, pushing a vacuum cleaner, bowling, or playing golf

1	2	3
Yes, Limited a lot	Yes, Limited a little	No, Not Limited at all

c. Lifting or carrying groceries

1	2	3
Yes, Limited a lot	Yes, Limited a little	No, Not Limited at all

d. Climbing several flights of stairs

1	2	3
Yes, Limited a lot	Yes, Limited a little	No, Not Limited at all

e. Climbing one flight of stairs

1	2	3
Yes, Limited a lot	Yes, Limited a little	No, Not Limited at all

f. Bending, kneeling, or stooping

1	2	3
Yes, Limited a lot	Yes, Limited a little	No, Not Limited at all

g. Walking more than one mile

1	2	3
Yes, Limited a lot	Yes, Limited a little	No, Not Limited at all

h. Walking several blocks

1	2	3
Yes, Limited a lot	Yes, Limited a little	No, Not Limited at all

i. Walking one block

1	2	3
Yes, Limited a lot	Yes, Limited a little	No, Not Limited at all

j. Bathing or dressing yourself

1	2	3
Yes, Limited a lot	Yes, Limited a little	No, Not Limited at all

---

4. During the past four weeks, have you had any of the following problems with your work or regular daily activities as a result of your physical health?

	YES	NO
a. Cut down on the amount of time you spent on work or other activities	1	2
b. Accomplished less than you would like	1	2
c. Were limited in the kind of work or other activates	1	2
d. Had difficulty performing the work or other activities (e.g., it took extra effort)	1	2

---

5. During the past four weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

	YES	NO
a. Cut down on the amount of time you spent on work or other activities	1	2
b. Accomplished less than you would like	1	2
c. Didn't do work or other activities as carefully as usual	1	2

---

6. During the past four weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?

1	2	3	4	5
Not at All	Slightly	Moderately	Quite a Bit	Extremely

---

7. How much bodily pain have you had during the last four weeks?

1	2	3	4	5	6
None	Very Mild	Mild	Moderate	Severe	Very Severe

---

8. During the past four weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?

1	2	3	4	5
Not at All	A Little Bit	Moderately	Quite a Bit	Extremely

9. These questions are about how you feel and how things have been with you during the past four weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past four weeks

a. Did you feel full of pep?

1	2	3	4	5	6
All the Time	Most of the Time	A Good Bit of the Time	Some of the Time	A Little Bit of the Time	None of the Time

b. Have you been a very nervous person?

1	2	3	4	5	6
All the Time	Most of the Time	A Good Bit of the Time	Some of the Time	A Little Bit of the Time	None of the Time

c. Have you felt so down in the dumps that nothing could cheer you up?

1	2	3	4	5	6
All the Time	Most of the Time	A Good Bit of the Time	Some of the Time	A Little Bit of the Time	None of the Time

d. Have you felt calm and peaceful?

1	2	3	4	5	6
All the Time	Most of the Time	A Good Bit of the Time	Some of the Time	A Little Bit of the Time	None of the Time

e. Did you have a lot of energy?

1	2	3	4	5	6
All the Time	Most of the Time	A Good Bit of the Time	Some of the Time	A Little Bit of the Time	None of the Time

f. Have you felt downhearted and blue?

1	2	3	4	5	6
All the Time	Most of the Time	A Good Bit of the Time	Some of the Time	A Little Bit of the Time	None of the Time

g. Did you feel worn out?

1	2	3	4	5	6
All the Time	Most of the Time	A Good Bit of the Time	Some of the Time	A Little Bit of the Time	None of the Time

h. Have you been a happy person?

1	2	3	4	5	6
All the Time	Most of the Time	A Good Bit of the Time	Some of the Time	A Little Bit of the Time	None of the Time

i. Did you feel tired?

1	2	3	4	5	6
All the Time	Most of the Time	A Good Bit of the Time	Some of the Time	A Little Bit of the Time	None of the Time

10. During the past four weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friend, relatives, etc)?

1	2	3	4	5	6
All the Time	Most of the Time	A Good Bit of the Time	Some of the Time	A Little Bit of the Time	None of the Time

---

11. How true or false is each of the following statement for you?

a. I seem to get sick easier than other people

1	2	3	4	5
Definitely true	Mostly true	Don't know	Mostly false	Definitely false

b. I am as healthy as anybody I know

1	2	3	4	5
Definitely true	Mostly true	Don't know	Mostly false	Definitely false

c. I expect my health to get worse

1	2	3	4	5
Definitely true	Mostly true	Don't know	Mostly false	Definitely false

d. My health is excellent

1	2	3	4	5
Definitely true	Mostly true	Don't know	Mostly false	Definitely false

Appendix C

Agoraphobic Cognitions Questionnaire and the Body Sensations Questionnaire

Part A: Cognitions Questionnaire
Below are some thoughts or ideas that may pass through your mind when you are nervous or frightened. Please indicate how often each thought occurs when you are nervous. Rate from 1-5 using the scale below.

1 – Thought never occurs
2 – Thought rarely occurs
3 – Thought occurs during half of the times I am nervous
4 – Thought usually occurs
5 – Thought always occurs when I am nervous

___ 1. I am going to throw up.

___ 2. I am going to pass out.

___ 3. I must have a brain tumor.

___ 4. I will have a heart attack.

___ 5. I will choke to death.

___ 6. I am going to act foolish.

___ 7. I am going blind.

___ 8. I will not be able to control myself.

___ 9. I will hurt someone.

___ 10. I am going to have a stroke.

___ 11. I am going crazy.

___ 12. I am going to scream.

___ 13. I am going to babble or talk funny.

___ 14. I will be paralyzed by fear.

___ 15. Other not listed (please describe and rate them).

Part B: Body Sensations Questionnaire
Below is a list of specific body sensations that may occur when you are nervous or in a feared situation. Please mark down how afraid you are of these feelings. Use a five point scale from not worried to extremely frightened. Please rate all items.

1 – Not frightened or worried by this sensation
2 – Somewhat frightened by this sensation
3 – Moderately frightened by this sensation
4 – Very frightened by this sensation
5 – Extremely frightened by this sensation

___ 16. Heart palpitations

___ 17. Pressure or a heavy feeling in chest

___ 18. Numbness in arms or legs

___ 19. Tingling in the fingertips

___ 20. Numbness in another part of your body

___ 21. Feeling short of breath

___ 22. Dizziness

___ 23. Blurred or distorted vision

___ 24. Nausea

___ 25. Having "butterflies" in your stomach

___ 26. Feeling a knot in your stomach

___ 27. Having a lump in your throat

___ 28. Wobbly or rubber legs

___ 29. Sweating

___ 30. A dry throat

___ 31. Feeling disoriented and confused

___ 32. Feeling disconnected from your body: Only partly present

___ 33. Other not listed (please describe and rate them).

Appendix D

Quality of Life Inventory (QOLI; Frisch, Cornell, Villanueva, & Retzlaff, 1992), p. 68-74, was removed Nov. 8, 2011 GMc

Appendix E

Disability Profile

A. Main disorder being rated: _____

B. Rate impairment due to the disorder relative to the patient's desired/potential level of functioning. Use all available information. Sample Probes: "if you were free of this problem, would anything be different in your [work] performance? If you didn't have this problem, would you still [be at the same job]?"

---

1. SCHOOL

Lifetime (worst impairment)	Past 2 weeks (see below)
_____	_____

0 – No impairment from this disorder
1 – Distress but not clear impairment
2 – Moderate: impaired performance (e.g., lower grades), but disorder does not prevent completing desired level of education
3 – Severe: Dropped out temporarily, but able to complete desired level of education
4 – Extreme: Dropped out, unable to complete desired level of education

Complete **PAST 2 WEEKS** rating for item 1 only if patient is now in school full time or if would be in school full time if had not dropped out due to emotional problem

---

2. WORK (OUTSIDE OR INSIDE THE HOME)

Lifetime (worst impairment)	Past 2 weeks (see below)
_____	_____

0 – No impairment from this disorder
1 – Distress but not clear impairment in job appropriate for patient's abilities
2 – Moderate impairment in job appropriate for patient's abilities (e.g., occasional absenteeism, moderate criticism from boss, avoidance of seeking an appropriate promotion, failing to do various household chores or doing them poorly)
3 – Severe impairment in job appropriate to patient's ability (e.g., frequent absenteeism or other behavior that could jeopardize employment, largely unable to complete household chores); or Underemployed (employed at a job beneath a patient's abilities/qualifications)
4 – Extreme: Unemployed or completely unable to function as homemaker or severe impairment in job beneath abilities

Complete **PAST 2 WEEKS** rating for item 2 only if patient is not a full-time student (i.e., only if you do not rate PAST 2 WEEKS for item 1).

---

3. FAMILY
Lifetime Past 2 weeks
(worst impairment)

_____ _____

0 – No impairment from this disorder in relationships with relatives
1 – Distress but not clear impairment
2 – Moderate: Intact but impaired relationships with relatives (e.g., argues, too independent, avoids contacts)
3 – Severe: Severed relationships with a close relative or avoids most contacts
4 – Extreme: Severed relationships with most of family

---

4. MARRIAGE/DATING
Lifetime Past 2 weeks
(worst impairment)

_____ _____

0 – No impairment from this disorder
1 – Distress but no impairment in dating or marriage
2 – Moderate impairment (e.g., dating somewhat less frequently than desired, mildly impaired functioning on dates, or minor marital problems)
3 – Severe impairment (e.g., dating infrequently, markedly impaired functioning on dates, major marital problems, separation or divorce)
4 – Extreme: Unable to date or marry

---

5. FRIENDSHIPS
Lifetime Past 2 weeks
(worst impairment)

_____ _____

0 – No impairment from this disorder
1 – No clear impairment, but distress in initiating or maintaining friendship
2 – Moderate: Has a few close friends and more acquaintances, but fewer than desired
3 – Severe: No close friends or distress in most activities with acquaintances
4 – Extreme: No close friends and distress in almost all activities with acquaintances

---

6. OTHER INTERESTS (RELIGIOUS ACTIVITIES, CLUBS, HOBBIES, SPORTS, ETC.)
Lifetime Past 2 weeks
(worst impairment)

_____ _____

0 – No impairment from this disorder in pursuing other interests
1 – Distress but no impairment
2 – Moderate impairment: Participates in activities but avoids some or does not participate fully
3 – Severe impairment: Participates in fewer activities than desired, is quite limited in ability to participate (e.g., attends church only sporadically despite desire to be active)

4 – Extreme: Unable to pursue any interests

---

7. ACTIVITIES OF DAILY LIVING (E.G., PERSONAL HYGENE, SHOPPING, HOUSEHOLD CHORES)

Lifetime (worst impairment) _____ Past 2 weeks _____

0 – No impairment from this disorder
1 – Distress but no impairment
2 – Moderate impairment: Delays in ADL, minor dysfunction or avoidance of ADL
3 – Severe impairment: Major dysfunction or avoidance. Needs some assistance.
4 – Extreme: Needs assistance in most ADL tasks

---

8. SUICIDAL BEHAVIOR

Lifetime (worst impairment) _____ Past 2 weeks _____

0 – Never considered suicide due to this disorder
1 – Considered suicide, but no intent
2 – Seriously considered suicide
3 – Attempted suicide – nonlethal gesture.
4 – Attempted suicide – potentially lethal method

Appendix F

Liebowitz Self-Rating Disability Scale

How much does your emotional problem limit your ability to do each of the following? Circle 0, 1, 2, or 3 on each line.

	Problem does not limit me at all	Problem limits me slightly	Problem limits me a moderate extent	Problem limits me severely
1. Drinking alcohol in moderation (without overdoing it)? Circle 0 if you do not drink at all.				
During the past 2 weeks:	0	1	2	3
Lifetime/When I was at my worst:	0	1	2	3
2. Avoiding use of nonprescribed drugs?				
During the past 2 weeks:	0	1	2	3
Lifetime/When I was at my worst:	0	1	2	3
3. Mainly being in a good mood when things are going well?				
During the past 2 weeks:	0	1	2	3
Lifetime/When I was at my worst:	0	1	2	3
4. Going as far in school as my money and intelligence permit?				
During the past 2 weeks: (complete this item for the past 2 weeks only if you are currently a full-time student)	0	1	2	3
Lifetime/When I was at my worst:	0	1	2	3
5. Keeping a job (housework or work outside of the home) that allows me to work to my highest ability?				
During the past 2 weeks: (complete this item for the past 2 weeks only if you are **NOT** a full-time student)	0	1	2	3
Lifetime/When I was at my worst:	0	1	2	3
6. Having mostly comfortable interactions with the member of my family?				
During the past 2 weeks:	0	1	2	3
Lifetime/When I was at my worst:	0	1	2	3

	Problem does not limit me at all	Problem limits me slightly	Problem limits me a moderate extent	Problem limits me severely
7. Having a satisfying romantic/ intimate relationship?				
During the past 2 weeks:	0	1	2	3
Lifetime/When I was at my worst:	0	1	2	3
8. Having at least a few close friends and a small group of acquaintances?				
During the past 2 weeks:	0	1	2	3
Lifetime/When I was at my worst:	0	1	2	3
9. Pursuing hobbies and other interests (e.g., religion, sports, etc.)?				
During the past 2 weeks:	0	1	2	3
Lifetime/When I was at my worst:	0	1	2	3
10. Taking care of personal shopping, household chores, and personal hygiene (e.g., bathing, showering, brushing your teeth, etc.)?				
During the past 2 weeks:	0	1	2	3
Lifetime/When I was at my worst:	0	1	2	3
11. Wanting to live and not thinking about suicide for more than a rare moment?				
During the past 2 weeks:	0	1	2	3
Lifetime/When I was at my worst:	0	1	2	3

Appendix G

Informed Consent Document for Phase I

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Informed Consent for Participants in Research Projects Involving Human Subjects

Title of Project: Specific Phobias in Young Adults: I
Investigators: Thomas Ollendick, Ph.D., Thompson Davis, M.S., and Cristian Sirbu, Ph.D.

I. The Purpose of Research:
The purpose of Phase I of this study is to examine the relations among a variety of variables thought to be associated with fear, as well as the prevalence and nature of such fears in a college sample of young adults.

II. Procedure and Duration of Participation:
You will be asked to complete several self-report questionnaires on-line. These questionnaires will involve you answering questions about general level of fear, attitudes, anxieties, and quality of life. Filling out these questionnaires should take about 90 minutes.

III. Risks:
Participation in this study is not expected to have risks, other than those associated with filling out questionnaires about your self. If you report significant fears, and you qualify for participation, you will be invited to participate in a laboratory assessment (Phase II) and potentially in a novel treatment of fears in Phase III of this project. You are under no obligation to participate in Phases II or III, however.

IV. Benefits of this Study:
While you will accrue no personal benefits from your participation, the information gathered in this study will aid us in understanding the prevalence and nature of fears and their relations to other variables of interest.

V. Extent of Anonymity and Confidentiality:
All the information that you provide will be confidential and access to your data will be restricted to the primary investigators. Your data, along with that of others, will be stored in a secure location. Your student ID number will be collected to assign you extra credit. This information will be encrypted and will not be a part of your data file.

VI. Compensation:
For your participation in this study, you will receive the equivalent of two hours of extra credit in any one course that offers extra credit for participation in psychological experiments. Contact your course instructor regarding alternative means of obtaining extra credit. If your course does not offer extra credit, you should understand that no compensation is provided.

VII. Freedom to Withdraw:
You are free to withdraw from the study any time you choose by closing the web page. If you choose to withdraw you will not be penalized by losing extra credit hours.

VIII. Approval of Research:
This research project has been approved, as required, by the Institutional Review Board for Research Involving Human Subjects at Virginia Polytechnic Institute and State University as well as the Human Subjects Committee of the Department of Psychology.
IRB Approval Date: November 24, 2003
Approval Expiration Date: May 31, 2005

IX. Participant's Responsibilities:
I voluntarily agree to participate in this study. I have the following responsibility: To fill out the questionnaires honestly and to the best of my ability.

X. Participant's Permission:
I have read and understand the Informed Consent and conditions of this project. I hereby acknowledge the above and give my voluntary consent for participation in this project. If I participate, I may withdraw at any time without penalty by closing the web page. I agree to abide by the rules of this project. Should I have any questions abut this research or its conduct, I may contact:

Thomas Ollendick, Ph.D. 231-6451
Primary Researcher

Thompson Davis, M.S. 231-3514
Co-Researcher

Cristian Sirbu, Ph.D. 231-8511
Co-Researcher

D. Harrison, Ph.D. 231-6581
Chair Human Subjects Committee

David M. Moore, DVM 231-4991
Chair Institutional Review Board
Office of Research Compliance
Research & Graduate Studies

This Informed Consent is valid from November 24, 2003 to May 31, 2005.

Appendix H

Informed Consent Document for Phase II

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Informed Consent for Participants in Research Projects Involving Human Subjects

Title of Project: Specific Phobias in Young Adults: II
Investigators: Thomas Ollendick, Ph.D., Thompson Davis, M.S., and Cristian Sirbu, Ph.D.

I. The Purpose of Research:
The purpose of Phase II of this study is to examine the relations among a variety of variables thought to be associated with fear, as well as the prevalence and nature of such fears in a college sample of young adults.

II. Procedure and Duration of Participation:
This phase will involve up to two sessions (2-3 hours each) of assessment. In the first session all participants will be administered a few self-report measures and a structured diagnostic interview. Depending upon your response in the first session you might be asked to participate in session 2. If you qualify, you will be asked to perform several computer generated tasks which will be demonstrated to you. These tasks require you to respond as quickly and accurately as possible to visual stimuli when they appear on the screen. You will be given time to practice the task. Also two behavioral approach tests (one in a real environment-In Vivo-and one involving Virtual Reality-VR) designed to determine the extent of your fear will be administered. For the In Vivo behavioral approach test, you will be asked to experience various situations related to your fear under the direction and support of an examiner. These situations will be presented gradually beginning at the bottom of your fear hierarchy and you will be allowed to discontinue at any time (the purpose is to measure your existing fear and not expose you to uncomfortably high levels of fear). AT NO TIME WILL YOU BE ASKED TO PROCEED WHEN YOU DO NOT WANT TO. For the VR behavioral approach test, the same experience will be conducted using VR equipment. Electrodes for measuring your heart rate and skin conductance will be attached and a 5-minute baseline will be obtained. Then you will be familiarized with the VR equipment. You will be asked to wear the VR helmet and will be encouraged to interact in VR. During VR and In Vivo exposure your heart rate and skin conductance will be continuously monitored. Normal or corrected vision is required. All sessions will be video-recorded in order to ensure the best quality of assessment for you. These data will be stored in a locked location and will only be viewed by researchers involved in this project.

III. Risks:
Participation in this treatment is not expected to have risks except possible temporary feelings of anxiety during behavioral approach tests. These tests may cause anxiety because we ask you to experience various height situations. You will always be in control, however and you will never be asked to do something you choose not to do. In

addition, some individuals may experience motion sickness-like side effects due to being in the VR environment. Possible side effects include minor discomfort, blurred vision, disorientation. If such symptoms occur, you will be asked to stay with the experimenter for a while before leaving the Clinic. All symptoms should dissipate during this rest period, typically within 10 to 15 minutes.

IV. Benefits of this Study:
While you will accrue no personal benefits from your participation, the information gathered in this study will aid us in understanding the prevalence and nature of fears and their relations to other variables of interest.

V. Extent of Anonymity and Confidentiality:
You will be identified only by a subject number in data analysis. No written results of this study will be traceable to a participant by name.

VI. Compensation:
For your participation in this study, you will receive the equivalent of six hours of extra credit (3 per session provided to you at the beginning of each session) in any one course that offers extra credit for participation in psychological experiments. Contact your course instructor regarding alternative means of obtaining extra credit. If your course does not offer extra credit, you should understand that no compensation is provided.

VII. Freedom to Withdraw:
You are free to withdraw from this study at any time without penalty. If you choose to withdraw, you will be compensated for the portion of time of the study completed, rounded up to the hour. You are free to not answer to any questions or to not respond to any experimental situations that you choose without penalty.

VIII. Approval of Research:
This research project has been approved, as required, by the Institutional Review Board for Research Involving Human Subjects at Virginia Polytechnic Institute and State University as well as the Human Subjects Committee of the Department of Psychology.
IRB Approval Date: November 24, 2003
Approval Expiration Date: May 31, 2005

IX. Participant's Responsibilities:
I voluntarily agree to participate in this study. I have the following responsibility: To fill out the questionnaires honestly and to the best of my ability.

X. Participant's Permission:
I have read and understand the Informed Consent and conditions of this project. I hereby acknowledge the above and give my voluntary consent for participation in this project. If I participate, I may withdraw at any time without penalty by closing the web page. I agree to abide by the rules of this project. Should I have any questions abut this research or its conduct, I may contact:

Thomas Ollendick, Ph.D. 231-6451
Primary Researcher

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Co-Researcher

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Chair Human Subjects Committee

David M. Moore, DVM 231-4991
Chair Institutional Review Board
Office of Research Compliance
Research & Graduate Studies

This Informed Consent is valid from November 24, 2003 to May 31, 2005.

Table 1

Descriptive Statistics for Specific Phobia and Control Groups

Scale	Subscale	Published Mean (SD)	Control Mean (SD)	Phobia Mean (SD)
RAND	Physical Functioning	70.6 (27.4)	M: 92.4 (20.6) F: 88.8 (24.2) Total: 90.8 (21.9)	M: 96.8 (6.26) F: 92.5 (16.2) Total: 94.4 (12.8)
	Role Funct/Physical	53.0 (40.8)	M: 98.5 (6.1) F: 90.4 (28.0) Total: 95.0 (19.0)	M: 100.0 (0.0) F: 96.9 (8.5) Total: 98.3 (6.5)
	Role Funct/Emotional	65.8 (40.7)	M: 94.1 (17.6) F: 76.9 (34.4) Total: 86.7 (27.1)	M: 92.3 (14.6) F: 83.3 (32.2) Total: 87.4 (25.8)
	Energy/Fatigue	52.2 (22.4)	M: 58.6 (13.0) F: 59.2 (12.9) Total: 58.9 (12.7)	M: 65.0 (15.5) F: 55.3 (16.2) Total: 59.7 (16.4)
	Emotional Well-Being	70.4 (22.0)	M: 74.6 (10.1) F: 80.0 (11.0) Total: 76.9 (10.6)	M: 77.5 (10.7) F: 74.0 (12.2) Total: 75.6 (11.5)
	Social Functioning	78.8 (25.4)	M: 92.3 (9.8) F: 89.8 (14.7) Total: 91.2 (12.0)	M: 94.0 (8.7) F: 92.0 (12.2) Total: 92.9 (10.7)
	Pain**	70.8 (25.5)	M: 82.2 (12.9) F: 79.4 (15.9) Total: 81.0 (1.1)	M: 91.3 (8.6) F: 88.9 (13.5) Total: 90.0 (11.5)
	General Health	57.0 (21.1)	M: 75.9 (13.8) F: 65.9 (16.8) Total: 71.6 (15.7)	M: 76.9 (10.9) F: 76.9 (14.2) Total: 76.9 (12.6)
ACQ		2.32 (0.07)	M: 1.48 (0.87) F: 1.32 (0.26) Total: 1.41 (0.67)	M: 1.50 (0.36) F: 1.42 (0.35) Total: 1.46 (0.35)
BSQ		3.05 (0.86)	M: 1.41 (0.43) F: 1.70 (0.68) Total: 1.54 (0.56)	M: 1.81 (0.64) F: 1.88 (0.85) Total: 1.85 (0.75)
QOLI		2.63 (1.11)	M: 2.73 (1.08) F: 3.01 (1.05) Total: 2.85 (1.06)	M: 2.70 (1.33) F: 3.07 (0.69) Total: 2.90 (1.02)
DP	Recent ***	0.50 (0.80)	M: 0.18 (0.73) F: 1.62 (2.60) Total: 0.80 (1.90)	M: 4.62 (1.85) F: 5.94 (2.54) Total: 5.34 (2.32)
	Lifetime ***	1.20 (1.40)	M: 0.12 (0.49) F: 0.62 (1.19) Total: 0.33 (0.88)	M: 2.62 (1.85) F: 3.63 (2.63) Total: 3.17 (2.33)

LSRDS	Recent	0.20 (0.60)	M: 1.12 (1.87) F: 0.92 (1.55) Total: 1.03 (1.71)	M: 0.77 (1.59) F: 0.81 (1.68) Total: 0.79 (1.61)
	Lifetime	0.40 (0.70)	M: 2.35 (2.60) F: 2.62 (3.38) Total: 2.47 (2.90)	M: 2.23 (3.37) F: 1.44 (1.90) Total: 1.79 (2.64)

* = $p < .05$
** = $p < .01$
*** = $p < .001$

Table 2

Diagnostic Characteristics from the ADIS-IV for those with Specific Phobia

ADIS-IV Data	Statistics	All Phobics (n = 29)	Animal (n = 20)	Environmental/ Situational (n = 9)
Clinician Severity Rating	Mean	5.38	5.25	5.67
	(SD)	1.08	1.12	1.00
	Min-Max	4 to 7	4 to 7	4 to 7
Participant Reported Fear	Mean	6.17	5.95	6.67
	(SD)	1.51	1.50	1.50
	Min-Max	3 to 8	3 to 8	4 to 8
Participant Reported Avoidance	Mean	6.03	6.10	5.89
	(SD)	1.80	1.71	2.09
	Min-Max	2 to 8	3 to 8	2 to 8
Participant Reported Distress	Mean	2.66	1.80	4.56
	(SD)	2.14	1.54	2.13
	Min-Max	0 to 7	0 to 5	1 to 7
Participant Reported Interference	Mean	2.52	2.05	3.56
	(SD)	1.70	1.64	1.42
	Min-Max	0 to 5	0 to 5	1 to 5

Table 3

Disability Profile Descriptive Statistics for Specific Phobia and Control Groups

Subscale	Time Period	Published Mean (SD)	Control Mean (SD)	Phobia Mean (SD)	Cohen's *d* (%^{ile}; Effect Size)
School	Recent ***	0.30 (0.60)	0.11 (0.32)	0.66 (0.61)	1.13 (86th; Large)
	Lifetime ***	0.40 (0.60)	0.14 (0.36)	0.93 (0.75)	1.34 (90th; Large)
Work	Recent	0.00 (0.00)	N/A	N/A	N/A
	Lifetime	0.10 (0.30)	0.11 (0.32)	0.41 (0.78)	0.50 (69th; Medium)
Family	Recent ***	0.10 (0.30)	0.07 (0.37)	0.41 (0.50)	0.77 (78th; Medium)
	Lifetime ***	0.10 (0.30)	0.14 (0.58)	0.90 (0.67)	1.21 (88th; Large)
Marriage/ Dating	Recent	0.20 (0.60)	0.07 (0.26)	0.14 (0.35)	0.23 (58th; Small)
	Lifetime	0.50 (0.80)	0.14 (0.44)	0.21 (0.49)	0.15 (56th; N/A)
Friendships	Recent ***	0.00 (0.00)	0.03 (0.19)	0.59 (0.50)	1.48 (93rd; Large)
	Lifetime ***	0.00 (0.00)	0.10 (0.41)	0.76 (0.58)	1.32 (90th; Large)
Other Interests	Recent ***	0.10 (0.50)	0.03 (0.19)	0.76 (0.69)	1.45 (92nd; Large)
	Lifetime ***	0.10 (0.60)	0.10 (0.41)	1.28 (0.75)	1.95 (97th; Large)
Activities of Daily Living	Recent ***	0.00 (0.00)	0.00 (0.00)	0.62 (0.73)	1.20 (88th; Large)
	Lifetime ***	0.00 (0.00)	0.00 (0.00)	0.86 (0.88)	1.39 (92nd; Large)
TOTAL SCORES	Recent ***	0.50 (0.80)	0.80 (1.90)	5.34 (2.32)	2.14 (>98th; Large)
	Lifetime ***	1.20 (1.40)	0.33 (0.88)	3.17 (2.33)	1.61 (95th; Large)

* = $p < .05$
** = $p < .01$
*** = $p < .001$

Table 4

Results of the 6 Mediational Models Tested

Model	Regression	β	*t*	*F*
1. Cognitions mediate impaired specific QOL (recent)	ACQ onto Groups	.041	*t* (57) = .313, n.s.	*F* (1, 57) = .098, n.s.
	DP onto Groups	.738	*t* (57) = 8.246, *p*<.000	*F* (1, 57) = 67.989, *p*<.000
	DP onto ACQ	.003	*t* (57) = .021, n.s.	*F* (1, 57) = .000, n.s.
2. Cognitions mediate impaired specific QOL (lifetime)	ACQ onto Groups	.041	*t* (57) = .313, n.s.	*F* (1, 57) = .098, n.s.
	DP onto Groups	.636	*t* (57) = 6.225, *p*<.000	*F* (1, 57) = 38.757, *p*<.000
	DP onto ACQ	-.018	*t* (57) = -.135, n.s.	*F* (1, 57) = .018, n.s.
3. Cognitions mediate dissatisfaction with learning	ACQ onto Groups	.041	*t* (57) = .313, n.s.	*F* (1, 57) = .098, n.s.
	Learning onto Groups	-.289	*t* (57) = -2.281, *p*<.026	*F* (1, 57) = 5.204, *p*<.026
	Learning onto ACQ	-.069	*t* (57) = -.519, n.s.	*F* (1, 57) = .269, n.s.
4. Body sensations mediate impaired specific QOL (recent)	BSQ onto Groups	.232	*t* (57) = 1.802, n.s.	*F* (1, 57) = 3.248, n.s.
	DP onto Groups	.738	*t* (57) = 8.246, *p*<.000	*F* (1, 57) = 67.989, *p*<.000
	DP onto BSQ	.108	*t* (57) = .822, n.s.	*F* (1, 57) = .675, n.s.
5. Body sensations mediate impaired specific QOL (lifetime)	BSQ onto Groups	.232	*t* (57) = 1.802, n.s.	*F* (1, 57) = 3.248, n.s.
	DP onto Groups	.636	*t* (57) = 6.225, *p*<.000	*F* (1, 57) = 38.757, *p*<.000
	DP onto BSQ	-.066	*t* (57) = -.502, n.s.	*F* (1, 57) = .252, n.s.
6. Body sensations mediate dissatisfaction with learning	BSQ onto Groups	.232	*t* (57) = 1.802, n.s.	*F* (1, 57) = 3.248, n.s.
	Learning onto Groups	-.289	*t* (57) = -2.281, *p*<.026	*F* (1, 57) = 5.204, *p*<.026
	Learning onto BSQ	-.101	*t* (57) = -.769, n.s.	*F* (1, 57) = .592, n.s.

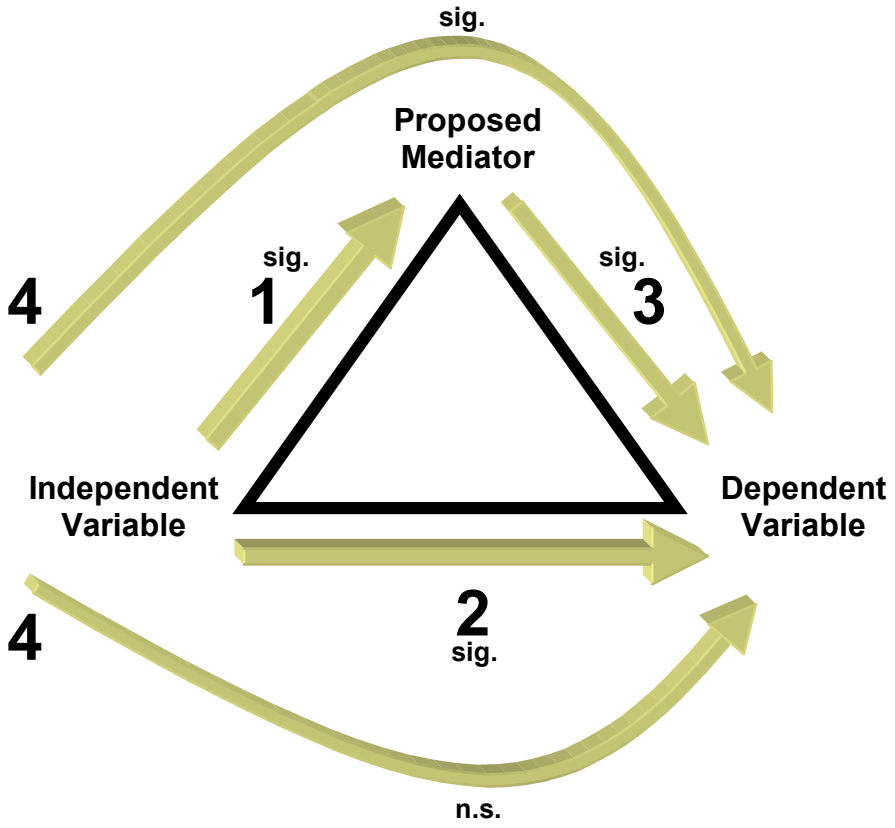

Figure 1. General mediator model with labeled paths indicating the 4 conditions necessary to consider mediation.

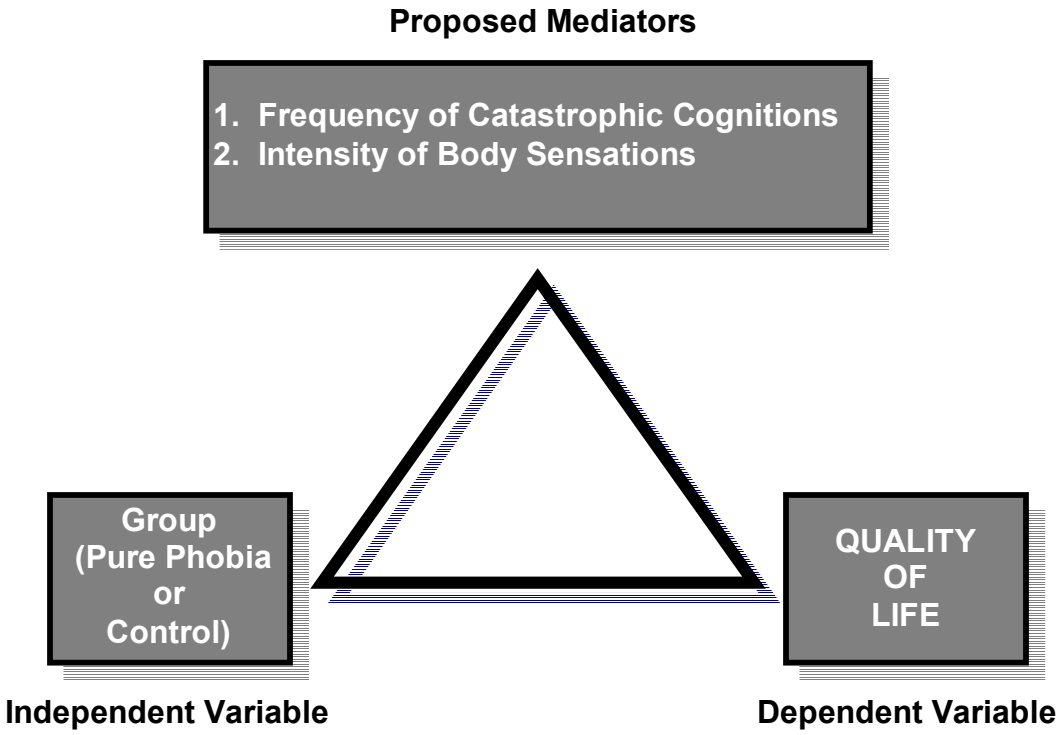

Figure 2. Diagram of the proposed mediational models.

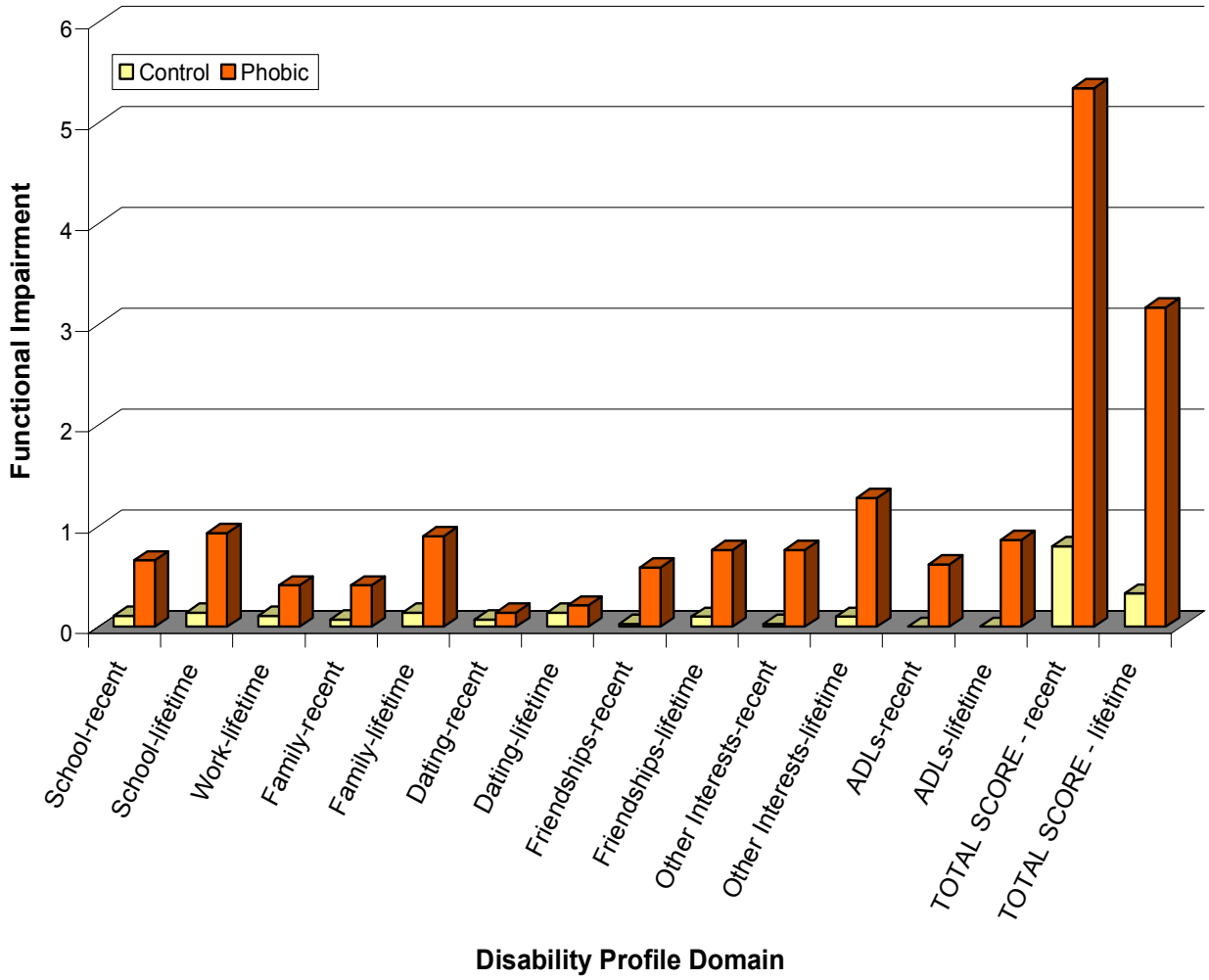

Figure 3. Functional impairment by domain for those with and without a diagnosis of specific phobia as rated by clinicians using the Disability Profile.

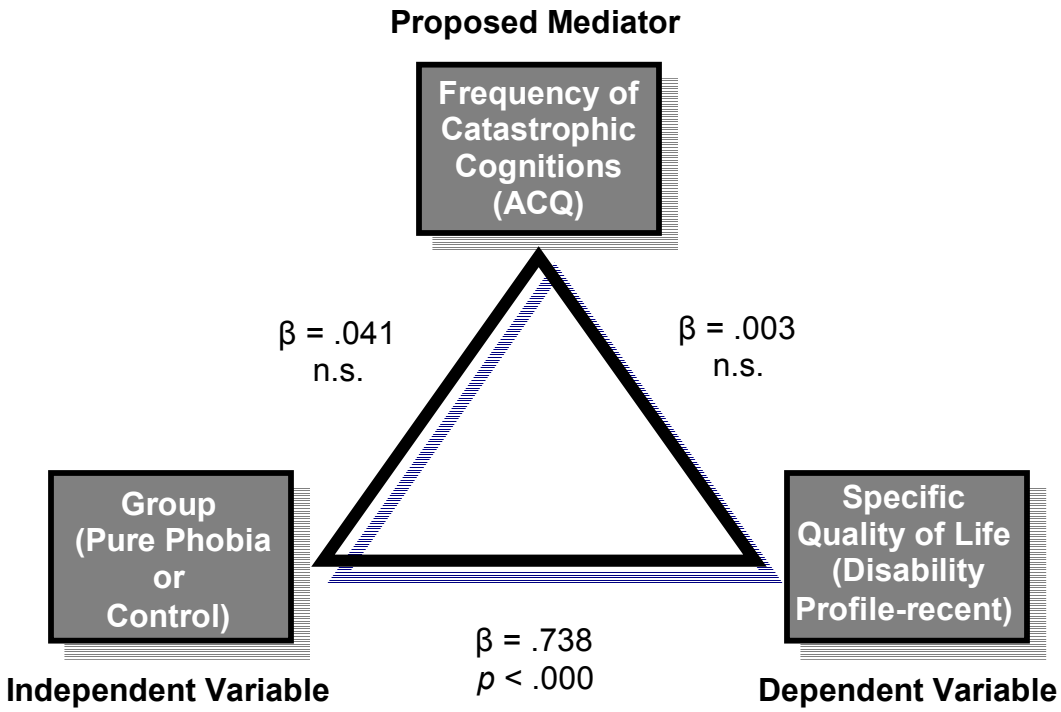

Figure 4. Diagram of the mediational model examining the degree to which cognitions mediate impaired specific quality of life (recent) in those with a specific phobia.

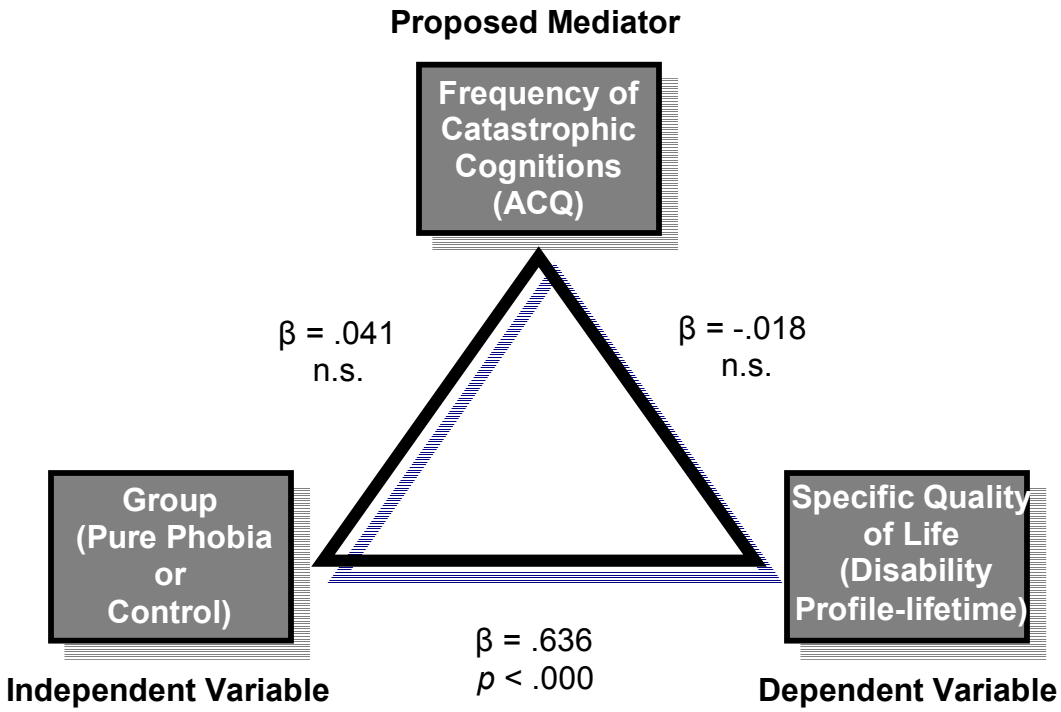

Figure 5. Diagram of the mediational model examining the degree to which cognitions mediate impaired specific quality of life (lifetime) in those with a specific phobia.

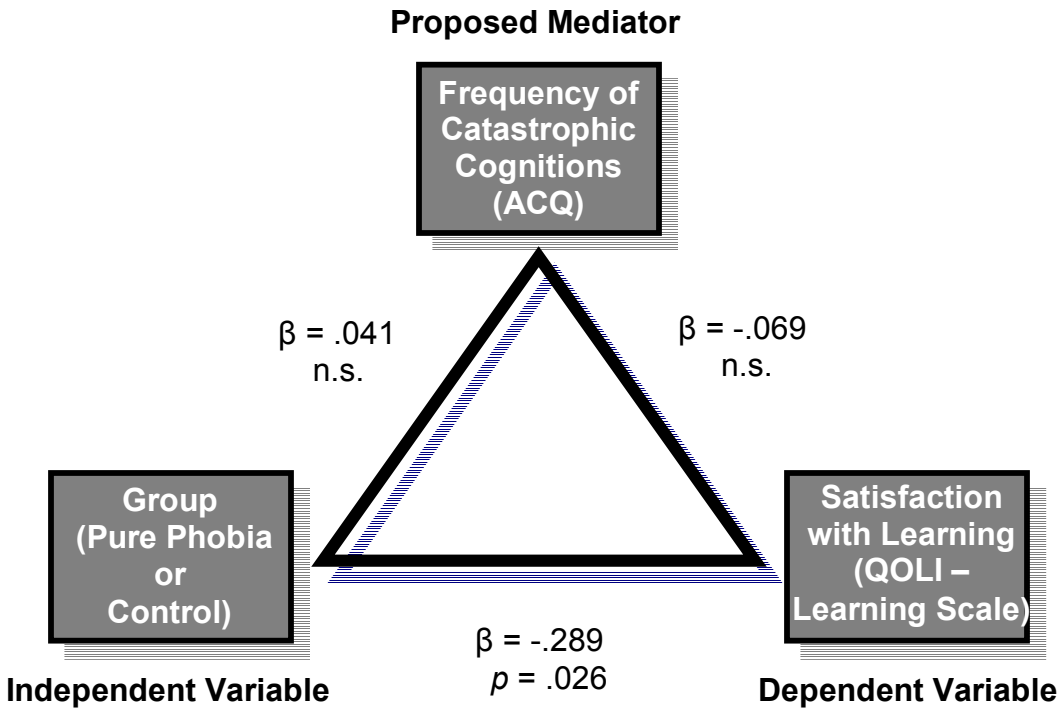

Figure 6. Diagram of the mediational model examining the degree to which cognitions mediate dissatisfaction with learning in those with a specific phobia.

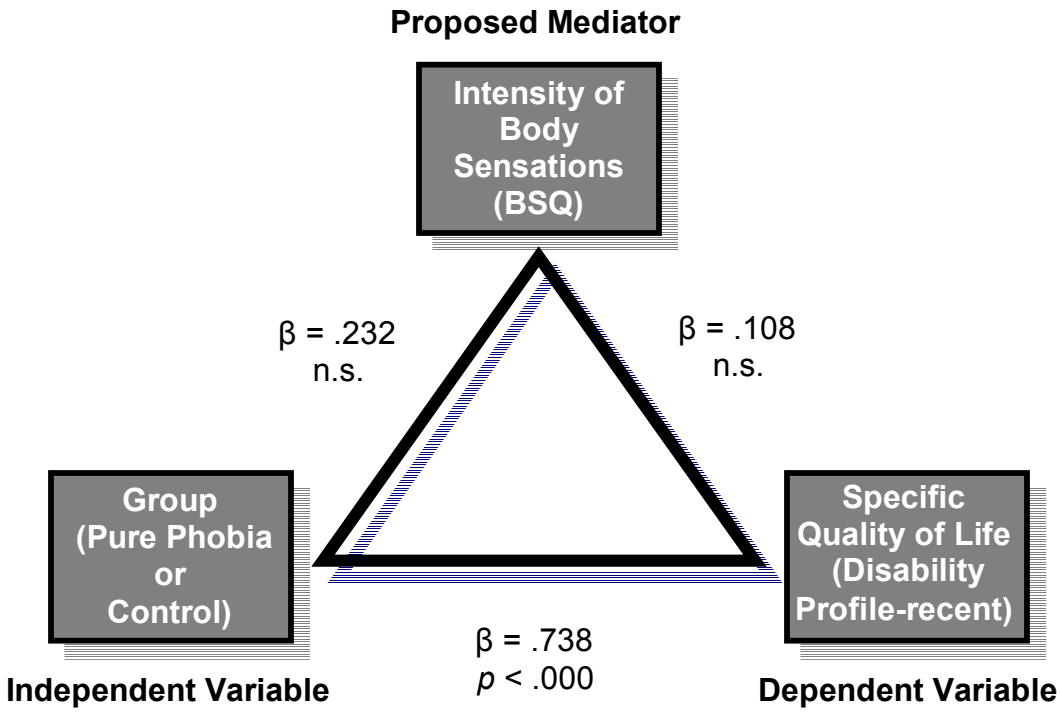

Figure 7. Diagram of the mediational model examining the degree to which body sensations mediate impaired quality of life (recent) in those with a specific phobia.

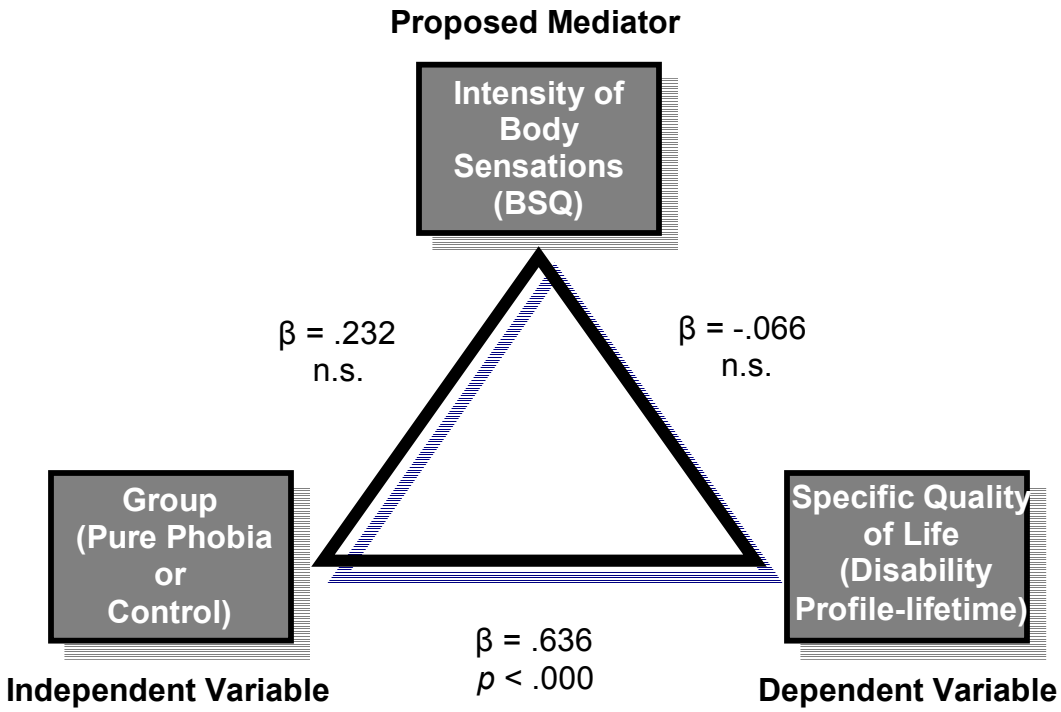

Figure 8. Diagram of the mediational model examining the degree to which body sensations mediate impaired quality of life (lifetime) in those with a specific phobia.

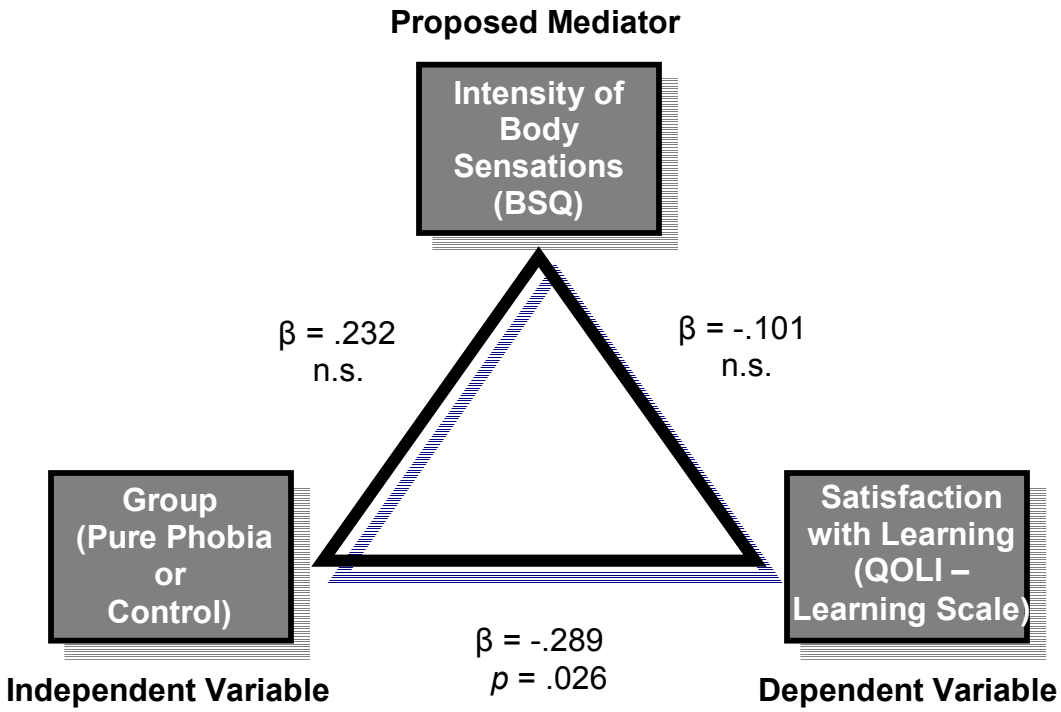

Figure 9. Diagram of the mediational model examining the degree to which body sensations mediate dissatisfaction with learning in those with a specific phobia.

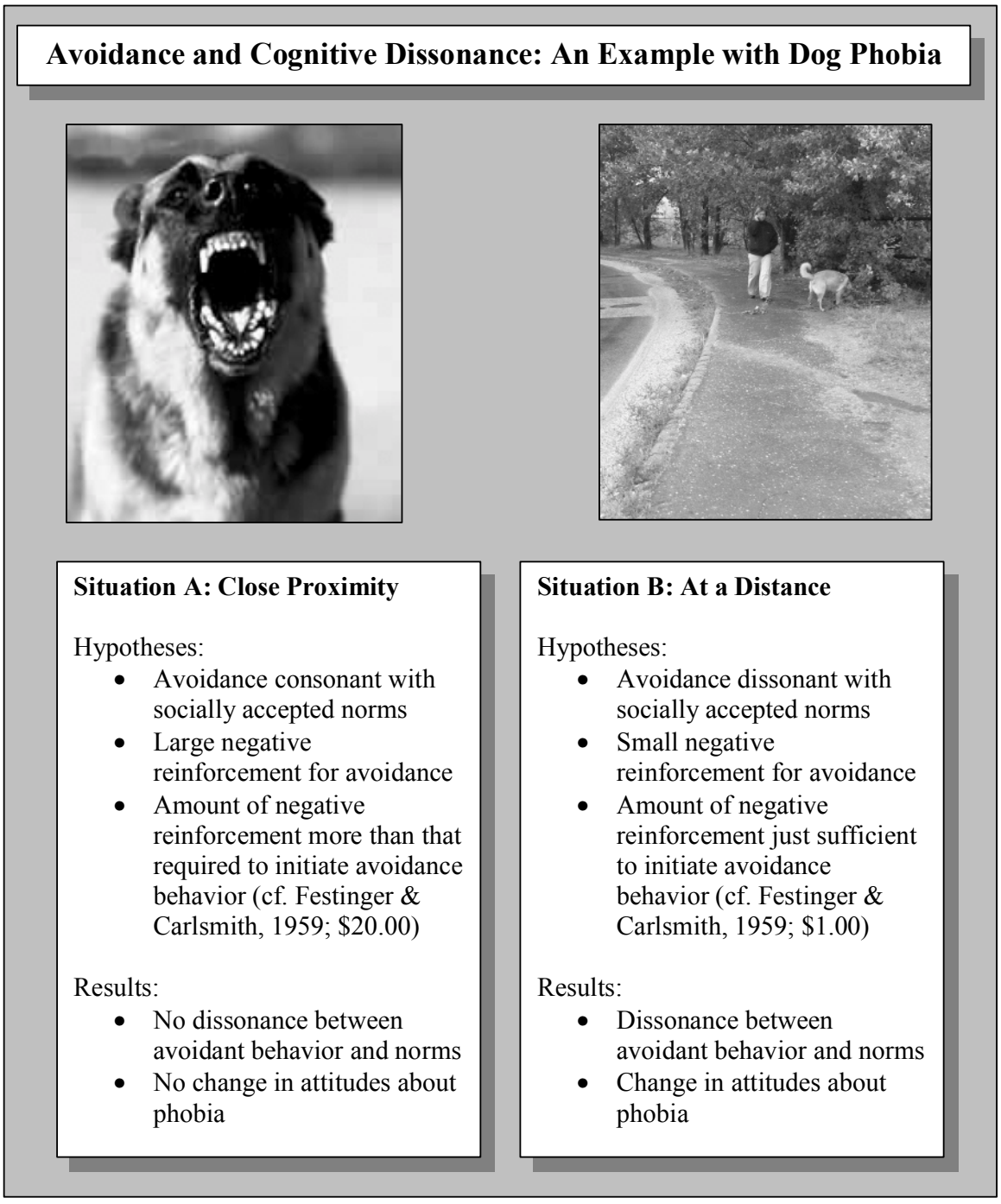

Figure 10. An illustration of the hypothesized differences between two avoidance situations using a cognitive dissonance model.

Curriculum Vitae

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EDUCATION:

---- **Johns Hopkins University School of Medicine / The Kennedy Krieger Institute**
Clinical Internship Behavioral Psychology and Applied Behavior Analysis

---- **Virginia Polytechnic Institute and State University** (completion expected 4/2005)
Degree: Ph.D. Clinical Psychology, Child Emphasis *GPA 3.88*
Dissertation: *Quality of Life in Young Adults with Specific Phobia*
Chair: Thomas H. Ollendick, Ph.D.

2000 **East Carolina University**
Degree: M.S. Child Development & Family Relations *GPA 4.00*
Thesis: *Cognition and Bias in Children: A Socio-Cognitive Developmental Model*
Chair: Robert E. Nida, Ph.D.

1998 **Hampden-Sydney College**
Degree: B.A. Psychology, with Departmental Honors *GPA 3.82*
Honors Thesis: *The Development of Racial, Gender, and Age Prejudice in 6-9 Year Olds*
Chair: Daniel G. Mossler, Ph.D.

HONORS AND AWARDS:

2003	Child & Adolescent Anxiety SIG Award	AABT; Boston, Massachusetts
2002	Phi Kappa Phi	Virginia Polytechnic Institute
2002	National Scholars Honor Society	Virginia Polytechnic Institute
1999	Omicron Delta Kappa	East Carolina University
1998	Summa Cum Laude	Hampden-Sydney College
1998	Phi Beta Kappa	Hampden-Sydney College
1998	Psychology Department Award for Excellence	Hampden-Sydney College
1997	Honors Council Summer Research Participant	Hampden-Sydney College
1997	James & Patricia Dennis Psychology Scholarship	Hampden-Sydney College
1996	James & Patricia Dennis Psychology Scholarship	Hampden-Sydney College
1995	Psi Chi, Chapter President 1997 &1998	Hampden-Sydney College
1994-98	Dean's List 8 out of 8 semesters	Hampden-Sydney College
1994-98	Venable Merit Scholarship	Hampden-Sydney College

PUBLICATIONS:

Davis III, T. E., & Ollendick, T. H. (in press). A critical review of empirically supported treatments for specific phobia in children: Do efficacious treatments address the components of a phobic response? *Clinical Psychology: Science and Practice*.

Ollendick, T. H., & Davis III, T. E. (2004). Empirically supported treatments for children and adolescents: Where to from here? *Clinical Psychology: Science and Practice*, *11,* 289-294.

Ollendick, T. H., Davis III, T. E., & Muris, P. (2004). Treatment of specific phobia in children and adolescents. In P. Barrett & T. H. Ollendick (Eds.), *The handbook of interventions that work with children and adolescents—From prevention to treatment*. West Sussex, England: John Wiley & Sons, Ltd.

Viramontez Anguiano, R. P., Johnson, C., & Davis III, T. E. (2004). The education of rural Latino children: Rural Latino families and schools in Eastern North Carolina. *Journal of Early Education and Family Review, 11,* 33-48.

Davis III, T. E., & Mossler, D. G. (1998). The development of racial, gender, and age prejudice in 6-9 year-olds. *The Virginia Journal of Science, 49,* 204-205.

PUBLICATIONS – IN PROCESS:

Davis III, T. E., & Ollendick, T. H. (2005). *IQ and achievement assessment in anxiety-disordered children*. Manuscript in preparation.

Ollendick, T. H., Davis III, T. E., & Whitmore, M. J. (2005). *ADHD, anxiety, and their comorbidity in children and adolescents.* Manuscript in preparation.

Paclawskyj, T. R., Yoo, J. H., & Davis III, T. E. (2005). *Behavior relaxation training in persons with MRDD: A review of the literature.* Manuscript in preparation.

Davis III, T. E., Ollendick, T. H., & Best, C. (2005). *Quality of life in children with specific phobia*. Manuscript in preparation.

PAPERS AND PRESENTATIONS:

Davis III, T. E., Friedman, B., Ollendick, T. H., Sirbu, C., Chelf, M., & Öst, L. G. (2005, November). *Cognitive-behavioral therapy for specific phobia in children: Physiological outcomes and mediators.* Poster submitted to the annual meetings of the Association for Advancement of Behavior Therapy, Washington D.C.

Davis III, T. E., & Ollendick, T. H. (2005, November). *Quality of life in young adults with specific phobia.* Poster submitted to the annual meetings of the Association for Advancement of Behavior Therapy, Washington D.C.

Davis III, T. E.. (2005, November). *Quality of life in college undergraduates with learning disabilities.* Poster submitted to the annual meetings of the Association for Advancement of Behavior Therapy, Washington D.C.

Huete, J. M., Kahng, S., Kuhn, S., Kurtz, P. F., Teichman, H., Ruffin, G., Davis III, T. E., & Hauer, L. (2005, May). Restraint fading as a treatment for SIB: Determination of the least restrictive starting point. In Joel E. Ringdahl (Chair), *Recent advances in the treatment of severe behavior*

disorders maintained by automatic reinforcement. Symposium accepted to the annual meetings of the Association for Behavior Analysis, Chicago, Illinois.

Ollendick, T. H., Sirbu, C., Chelf, M., Davis III, T. E., & Öst, L. G. (2005, March). *Moderators and mediators of cognitive-behavioral treatment for specific phobias in children.* Poster presented at the annual meetings of the Anxiety Disorders Association of America, Seattle, Washington.

Ollendick, T. H., Sirbu, C., Chelf, M., Davis III, T. E., & Öst, L. G. (2005, March). *Cognitive-behavioral treatment for specific phobias in children: The influence of comorbidity.* Poster presented at the annual meetings of the Anxiety Disorders Association of America, Seattle, Washington.

Davis III, T. E., Best, C., & Ollendick, T. H. (2004, November). *Quality of life in children with specific phobia*. Poster presented to the Child and Adolescent Anxiety Special Interest Group at the annual meetings of the Association for Advancement of Behavior Therapy, New Orleans, Louisiana.

Davis III, T. E., & Ollendick, T. H. (2004, November). *Intellectual, achievement, and neurocognitive assessment in anxiety-disordered children*. Poster presented to the annual meetings of the Association for Advancement of Behavior Therapy, New Orleans, Louisiana.

Ollendick, T. H., Davis III, T. E., & Öst, L.G. (2004, November). CBT treatments of specific phobias in children: The pursuit of mediators and moderators of treatment outcome. In Kimberli Treadwell (Chair), *Moderators and mediator of treatment for child anxiety disorders*. Symposium presented to the annual meetings of the Association for the Advancement of Behavior Therapy, New Orleans, Louisiana.

Hannesdottir, D. K., Whitmore, M. J., Davis III, T. E., & Ollendick, T. H. (2004, November). *Behavioral inhibition and performance on a behavioral avoidance task among children with specific phobias.* Poster presented to the Child and Adolescent Anxiety Special Interest Group at the annual meetings of the Association for Advancement of Behavior Therapy, New Orleans, Louisiana.

Hurley, J. D., Davis III, T. E., Friedman, B., Scarpa, A., Ollendick, T. H., & Öst, L. G. (2004, July). *Psychophysiologic assessment in One-Session Treatment of specific phobia in children*. Poster presented at the annual meetings of the American Psychological Association, Honolulu, Hawaii.

Sirbu, C., Ollendick, T. H., & Davis III, T. E. (2004, January). *How active are fear structures during exposure in virtual environments? A test of emotional processing theory in acrophobia.* Paper presented to the annual meetings of CyberTherapy, San Diego, California.

Davis III, T. E., Hurley, J. D., & Ollendick, T. H. (2003, November). *Predictors of outcome on behavioral avoidance tasks with phobic children*. Poster presented to the Child and Adolescent Anxiety Special Interest Group at the annual meeting of the Association for Advancement of Behavior Therapy, Boston, Massachusetts.

Rouse, M. L., Davis III, T. E., & Ollendick, T. H. (2003, July). *Parenting, behavior inhibition, and anxiety in children.* Poster presented at the annual meeting of the Minority Academic Opportunities Program's Summer Research Internship Presentation Day, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Davis III, T. E., Hurley, J. D., Stuard, K., & Scarpa, A. (2003, May). *Psychological adjustment to childhood sexual abuse in a sample of college males*. Poster presented at the annual meeting of the American Psychological Society, Atlanta, Georgia.

Ollendick, T. H., & Davis III, T. E. (2003, March). *Attention-Deficit Hyperactivity Disorder and Anxiety Disorder in children: Associations with IQ and academic achievement.* Paper presented at the annual meeting of the Anxiety Disorders Association of America, Toronto, Canada.

Davis III, T. E., Hurley, J. D., Ollendick, T. H., & Ost, L. G. (2002, November). *A single case study of one-session treatment of specific phobias: Fear of being alone.* Poster presented at the Child and Adolescent Anxiety Special Interest Group at the annual meeting of the Association for Advancement of Behavior Therapy, Reno, Nevada.

Davis III, T. E., Hurley, J. D., Shortt, A., Sander, J., & Ollendick, T. H. (2002, June). *The generalization of one-session phobia treatment in children.* Poster presented at the biennial meeting of the Third International Conference on Child & Adolescent Mental Health, Brisbane, Australia.

Hurley, J. D., Davis III, T. E., Sander, J., Shortt, A., & Ollendick, T. H. (2002, June). *Efficacy of one-session treatment of animal and situational specific phobia in children.* Poster presented at the biennial meeting of the Third International Conference on Child & Adolescent Mental Health, Brisbane, Australia.

Davis III, T. E., Nida, R. E., & Mossler, D. G. (2001, April). *Domain specific class inclusion tasks as predictors of bias and prejudice.* Poster presented at the annual meeting of the Eastern Psychological Association, Washington, D.C.

Davis III, T. E., & Nida, R. E. (2001, April). *A racial class inclusion task as a predictor of children's like and dislike in their peers.* Paper presented at the annual meeting of the Virginia Psychological Association, Roanoke, Virginia.

Viramontez, R. A., & Davis III, T. E. (2000, November). *College aspirations: The importance of family and school factors (II).* Paper presented at the annual meeting of the National Conference on Family Relations, Minneapolis, Minnesota.

Mossler, D. G., Ellwanger, W. T., & Davis III, T. E. (2000, March). *Cognitive, personality, and social factors associated with a decline of prejudice in school aged children.* Poster presented at the annual meeting of the Eastern Psychological Association, Baltimore, Maryland.

Viramontez, R. A., & Davis III, T. E. (2000, February). *College aspirations: The importance of family and school factors (I).* Paper presented at the annual meeting of the Southeastern Council on Family Relations, Winston-Salem, North Carolina.

Davis III, T. E., & Mossler, D. G. (1999, April). *The decline of prejudice in young children: Is there a logical explanation?* Poster presented at the annual meeting of the Eastern Psychological Association, Providence, Rhode Island.

Mossler, D. G., Davis III, T. E., Mackey, B. P., & Wright, C. B. (1998, May). *Attitudes about learning disabilities held by faculty and students at small colleges.* Poster presented at the annual meeting of the American Psychological Society, Washington, D.C.

Davis III, T. E., & Mossler, D. G. (1998, April). *The development of racial, gender, and age prejudice in 6-9 year-olds.* Paper presented at the annual meeting of the Virginia Psychological Association, Wintergreen, Virginia.

Mossler, D. G., Davis III, T. E., & Britner, P. A. (1998, February). *Professionals' decision making about out-of-home placements.* Poster presented at the annual meeting of the Eastern Psychological Association, Boston, Massachusetts.

Mossler, D. G., Mackey, B. P., Wright, C. B., & Davis III, T. E. (1998, February). *Comparisons of college students' and faculty members' knowledge of and attitudes about learning disabilities.* Poster presented at the annual meeting of the Eastern Psychological Association, Boston, Massachusetts.

GRANTS:

Clinical Child Research Award. (2004, $500). To support research investigating quality of life in children with specific phobia. Department of Psychology, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Graduate Research Development Project: Dissertation Award. (2004, $375). Supported research examining generic and specific aspects of quality of life in young adults. Virginia Tech Graduate Student Assembly, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Graduate Student Assembly Travel Award. (2003, $196). Virginia Tech Graduate Student Assembly, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Galper Memorial Research Award. (2003, $300). Supported research on behavioral avoidance tasks in children with specific phobia. Department of Psychology, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Galper Memorial Research Award. (2002, $300). Supported research on the generalization of One-Session Treatment for specific phobia in children. Department of Psychology, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Graduate Student Assembly Travel Award. (2002, $300). Virginia Tech Graduate Student Assembly, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Clinical Child Research Award. (2002, $300). Supported research on the efficacy of One-Session Treatment in alleviating specific phobia in children. Department of Psychology, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Honors Council Summer Research Grant. (1997, $200). Supported research identifying cognitive predictors of the development of racist and sexist attitudes in young children. Hampden-Sydney College, Hampden-Sydney, Virginia.

RESEARCH EXPERIENCE:

Project Coordinator: One-Session Treatment of Phobias in Children **May 2002 – July 2004**
Virginia Polytechnic Institute and State University
Blacksburg, Virginia 24060
-$1.6 million NIMH grant-funded research project examining the efficacy of One-Session Exposure Treatment for childhood Specific Phobia. Duties included supervising and training undergraduate and graduate research assistants, therapists, and assessors. Other project responsibilities included assisting with NIMH yearly reports and submissions, outcome assessment, ongoing project development, diagnostic assessment and treatment of phobias, psychophysiologic assessment, database creation and management, statistical analysis, maintenance and updating of center computers, participant recruitment, research presentation, and website creation and management, along with other project tasks.
Supervisors: Thomas Ollendick, Ph.D.; Lars-Göran Öst, Ph.D. (co-supervision of treatment cases)

Project Consultant and Assessor: Acrophobia in Young Adults **May 2002 – July 2004**
Virginia Polytechnic Institute and State University
Blacksburg, Virginia 24060
-Internally funded research project (ASPIRES, $38,500) examining the efficacy of virtual reality technologies and the assessment and treatment of acrophobia. Consulting duties included training personnel to conduct semi-structured diagnostic interviews, helping in the development of a virtual reality exposure treatment manual, assisting in the selection of assessment instruments, and directing the selection and hierarchical breakdown of in-vivo environments for treatment and assessment. Assessment duties primarily involved diagnostic and psychophysiologic evaluations with participants and the use of the virtual

environment as a behavioral avoidance task. Collaborators: Thomas Ollendick, Ph.D.; Cristian Sirbu, Ph.D.

Research Assistant: One-Session Treatment of Phobias in Children **May 2001 – May 2002**
Virginia Polytechnic Institute and State University
Blacksburg, Virginia 24060
-NIMH grant-funded research project investigating the efficacy of One-Session Exposure Treatment for childhood Specific Phobia. Duties included the clinical and psychophysiologic assessment of phobic participants, data collection and scoring, research presentation, and other project responsibilities. Supervisor: Thomas Ollendick, Ph.D.

Research Assistant **May 2001 – July 2001**
Virginia Polytechnic Institute and State University
Blacksburg, Virginia 24061
-Assisted part-time in a meta-analysis project investigating responses to self-help psychotherapy for eating disordered patients by coding and summarizing articles. Supervisor: George Clum, Ph.D.

Research Assistant: The Pediatric Psychology Research Group **Aug. 2000 – Sept. 2001**
Virginia Polytechnic Institute and State University
Blacksburg, Virginia 24061
-Responsibilities included collaborating with a research team designing studies to investigate pediatric health issues and asthma. Supervisor: Jack Finney, Ph.D.

Research Assistant **Aug. 1998 – May 2000**
East Carolina University
Greenville, North Carolina 27858
-Coordinated the design and administration of a programmatic line of research intended to investigate Hispanic families and acculturation. Responsibilities included project design, measurement, professional writing, and grant writing/development. Supervisor: Ruben Viramontez Anquiano, Ph.D.

Research Assistant **May 1997 – May 1998**
Hampden-Sydney College
Hampden-Sydney, Virginia 23943
-Duties included collaborating on multiple projects designed to investigate the kinds of attitudes held by teachers and faculty members toward students with learning disabilities. Supervisor: Daniel Mossler, Ph.D.

Grant-Funded Independent Researcher **May. 1997 – Aug. 1997**
Hampden-Sydney College
Hampden-Sydney, Virginia 23943
-Designed a study to investigate the developmental course of prejudice: including racial, gender, and age bias. Supervisor: Daniel Mossler, Ph.D.

TEACHING EXPERIENCE:

Instructor: Developmental Psychology Lab (Psyc 4234) **July 2002 – Aug. 2002**
Virginia Polytechnic Institute and State University
Blacksburg, Virginia 24061
-Taught one section during the second summer session. Course foci were conducting research in Developmental Psychology, reviewing cognitive and social development, and introducing developmental theories.

Instructor: Introductory Psychology Recitation (Psyc 2004) **Aug. 2000 – May 2001**
Virginia Polytechnic Institute and State University
Blacksburg, Virginia 24061

-Responsible for teaching two sections in each of the two semesters. Topics included introductory level presentations on the scientific study of behavior, behavioral research methods and analysis, theoretical interpretations, basic behavioral processes, sensory and physiological mechanisms, and personality types.

Athletic Tutor: Office of Student Development, Athletics **Nov. 1999 – May 2000**
East Carolina University
Greenville, North Carolina 27858
- Tutored athletes in Psychology and English Composition courses (and any writing intensive course). In addition to providing services to assigned individual students, duties included conducting and directing an open study hall for 2 ½ hours, twice a week.

Teaching Assistant: Marriage and Family Relations (CDFR 1103) **Aug. 1998 – May 1999**
East Carolina University
Greenville, North Carolina 27858
-Assistant to Dr. Ruben Viramontez Anguiano for 2 sections per semester. Course material included various family systems theories, family theories from a multicultural perspective, and the dynamics of family relationships. Duties included occasional classroom instruction, grading all written assignments, arranging guest speakers, and handling the majority of student-related concerns or questions.

Teaching Assistant: Family and Cultural Diversity (CDFR 4303) **Aug. 1998 – May 1999**
East Carolina University
Greenville, North Carolina 27858
-Assistant to Dr. Ruben Viramontez Anguiano for 2 sections per semester. Course material included the introduction of various multicultural concepts, family theories from a multicultural perspective, and a brief history of the experiences of multicultural families in the United States. Duties included occasional classroom instruction, grading all written assignments, arranging guest speakers, and handling the majority of student-related concerns or questions.

CLINICAL EXPERIENCE:

Behavior Psychology Predoctoral Intern **July 2004 - Present**
The Kennedy Krieger Institute / Johns Hopkins University School of Medicine
Neurobehavioral Unit Outpatient Clinic
Baltimore, Maryland 21205
-For this internship, duties included providing a continuum of services for individuals with developmental disabilities who display severe destructive behavior such as self-injury, aggression, and property destruction. This continuum ranged from Consultation to Day Treatment to Intensive Day Treatment. Responsibilities involved conducting functional analyses, developing behavior plans, and implementing reinforcement strategies to decrease inappropriate behaviors and increase appropriate responses. Unique experiences and training with other treatment methods included functional communication training (FCT), behavioral relaxation training (BRT), and restraint analysis/fading. Clinic, school, and home sessions were conducted, as well as parent, caregiver, and teacher education/training. Supervisors: Patricia Kurtz, Ph.D.; Julia O'Connor, Ph.D.; Theodosia Paclawskyj, Ph.D.; John Huete, Ph.D.

Graduate Supervisor **Aug. 2003 – May 2004**
Psychological Services Center, Department of Psychology
Virginia Polytechnic Institute and State University
Blacksburg, Virginia 24061
-As a fourth year clinical graduate student assigned to the Child-Specialty Practicum Team, responsibilities included providing live supervision for all of the clinical cases seen by first-year students on the team. Duties also included participating in and assisting with group supervision, meeting weekly with first-year and advanced graduate students to provide individual supervision, and periodically leading group supervision meetings. Supervisor: Angela Scarpa-Friedman, Ph.D.

Graduate Clinician/Intern **May 2002 – Sept. 2002**
Southwestern Virginia Mental Health Institute, Adolescent Unit
Marion, Virginia 24354
-For this clinical externship, responsibilities were to assess and treat adolescents in an acute care inpatient setting. Assessment duties included examining intellectual capability, potential risk (including suicidal and homicidal intent), personality characteristics, and mental status. Treatment responsibilities included conducting individual and group therapy sessions. Supervisor: Richard Mears, Ph.D.

Graduate Clinician: Psychometrician **Aug. 2001 – June 2002**
Child Study Center, Department of Psychology
Virginia Polytechnic Institute and State University
Blacksburg, Virginia 24061
-Assessed child psychoeducational functioning; clinic duties included conducting 9 hour assessments designed to screen for learning disabilities (especially ADHD), anxiety disorders, and depression, writing reports based upon the assessment data, and presenting these findings to the assessment team, parents, and school. Supervisor: Thomas Ollendick, Ph.D.

Graduate Clinician: Therapist **Aug. 2000 – Sept. 2002**
Psychological Services Center, Department of Psychology
Virginia Polytechnic Institute and State University
Blacksburg, Virginia 24061
-Treatment of adult and child patients, couples, and families. Clinic duties included conducting intakes and assessments, providing interpersonal therapy, cognitive-behavioral therapy, group therapy, and parent training/education. Supervisors: George Clum, Ph.D.; Lee Cooper, Ph.D.; Thomas Ollendick, Ph.D.; Angela Scarpa-Friedman, Ph.D.

Prevention Specialist: Program Coordinator, Summer Programs **June 2000 – Aug. 2000**
Crossroads Mental Health Community Services Board
Farmville, Virginia 23901
-Responsibilities included the supervision of all summer program staff, on-site supervision of staff, budget preparation, program evaluation, light office/secretarial work, supply procurement, serving as senior camp counselor, and supervising the children in their activities. Populations served included children 5-13 years of age with a variety of learning disabilities and psychopathologies in addition to other undiagnosed children. Supervisor: Will Rogers, Executive Director of Crossroads Services Board

Prevention Specialist: Program Coordinator, Summer Programs **June 1999 – Aug. 1999**
Crossroads Mental Health Community Services Board
Farmville, Virginia 23901
-Responsibilities included the supervision of all summer program staff, on-site supervision of staff, budget preparation, program evaluation, light office/secretarial work, supply procurement, serving as senior camp counselor, and supervising the children in their activities. Populations served included children 5-13 years of age with a variety of learning disabilities and psychopathologies in addition to other undiagnosed children. Supervisor: Will Rogers, Executive Director of Crossroads Services Board

Prevention Specialist: Assistant Coordinator, Summer Programs **May 1998 – Aug. 1998**
Crossroads Mental Health Community Services Board
Farmville, Virginia 23901
-Responsibilities included the supervision of all summer program staff, on-site supervision of staff, program evaluation, supply procurement, serving as senior camp counselor, and supervising the children in their activities. Populations served were a combination of children 5-13 years of age with and without a variety of learning disabilities and psychopathologies. Supervisor: Jennifer Kelman, Ph.D.

Prevention Specialist: Group Co-Leader, ADHD After-School Program **Sept. 1997 – April 1998**
Crossroads Mental Health Community Services Board
Farmville, Virginia 23901

-Responsibilities included co-leading group therapy and conducting cognitive-behavioral therapy with approximately 15 elementary school children. These children were diagnosed with severe ADHD and were assigned to the group based upon teachers', parents', and school administrators' reports of extreme behavioral, attentional, and academic problems. Additional responsibilities included directing recreational activities and administering daily self-report evaluations. Supervisor: Jennifer Kelman, Ph.D.

Prevention Specialist: On-Site Coordinator, Summer Programs **May 1997 – Aug. 1997**
Crossroads Mental Health Community Services Board
Farmville, Virginia 23901
-Responsibilities included staff supervision, program evaluation, and the counseling and supervision of participating children. Populations served included children 5-13 years of age both with and without a variety of learning disabilities and psychopathologies. Supervisor: Jennifer Kelman, Ph.D.

Prevention Specialist: Group Co-Leader, At-Risk After-School Program **Sept. 1996 – April 1997**
Crossroads Mental Health Community Services Board
Farmville, Virginia 23901
-Responsibilities included serving as a counselor and group therapy co-leader in an after-school setting designed for approximately 15 African American pre-teens who were considered "At-Risk." Shared responsibilities included conducting group therapy, directing recreational activities, providing tutoring, and regularly supervising 3-4 participants who required additional assistance because of severe academic, emotional, and behavioral difficulties. Supervisor: Jennifer Kelman, Ph.D.

Prevention Specialist: Counselor, Summer Programs **June 1996 – Aug. 1996**
Crossroads Mental Health Community Services Board
Farmville, Virginia 23901
-Responsibilities included counseling and supervising participating children and assisting with program evaluation. Populations served included children 5-13 years of age with and without a variety of learning disabilities and psychopathologies. Supervisor: Jennifer Kelman, Ph.D.

Prevention Specialist: Group Co-Leader, At-Risk After-School Program **May 1996 – June 1996**
Crossroads Mental Health Community Services Board
Farmville, Virginia 23901
-Responsibilities included serving as counselor and group therapy co-leader in an after-school setting designed for approximately 15 African American pre-teens who were considered "At-Risk." Shared responsibilities included conducting group therapy, directing recreational activities, art, and tutoring. Supervisor: Jennifer Kelman, Ph.D.

PROFESSIONAL AFFILIATIONS:

American Psychological Association
American Psychological Society
Anxiety Disorders Association of America
Association for Advancement of Behavior Therapy
-Member of the Child and Adolescent Anxiety Special Interest Group

EDITORIAL EXPERIENCE:

Journal of Consulting and Clinical Psychology. (2003). Invited Reviewer.

OTHER PROFESSIONAL EXPERIENCES:

Davis III, T. E. (2005, January). *One-session treatment and specific phobias in children.* Invited colloquium presented to the Department of Psychology, University of Memphis, Memphis, TN.

Davis III, T. E. (2004, December). *One-session treatment of specific phobias in children.* Invited colloquium presented to the Department of Psychology, Louisiana State University, Baton Rouge, LA.

Davis III, T. E. (2004, April). *Exposure therapies for specific phobia in children: One-session treatment and virtual reality exposure.* Invited keynote address presented at the annual Psi Chi induction ceremony, Hampden-Sydney College chapter, Hampden-Sydney College, Hampden-Sydney, VA.

Davis III, T. E. (2003, Summer). *The Child and Adolescent Phobia and the Virtual Reality projects at Virginia Tech*. Cover story in *Alumni News* (www.hsc.edu/alumni), Hampden-Sydney College, Hampden-Sydney, VA.

Ollendick, T. H., & Davis, T. E. (2002, July). *The treatment and assessment of specific phobia in children and the Child and Adolescent Phobia Project.* Brief interview conducted by National Public Radio (NPR: WVTF), Virginia Polytechnic Institute and State University, Blacksburg, VA.

Davis, T. E. (2002, May). *Success and expectations in graduate school.* Invited keynote address presented at the annual Psi Chi induction ceremony, Hampden-Sydney College chapter, Hampden-Sydney College, Hampden-Sydney, VA.

Child Development & Family Relations and Marriage and Family Therapy Graduate Association of East Carolina University, President, 1998.

REFERENCES:

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