ABSTRACT

Title of Dissertation:	INTERNAL AND ENVIRONMENTAL BUFFERS OF TERRORISM-RELATED ANXIETY
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The current study focuses on the adjustment of Washingtonians to living under the threat of terrorism. The purpose of the present study was to examine the relationships of six predictor variables – resilience, spirituality, perceived social support, perceived controllability, denial, and previous trauma – with terrorism-related anxiety. The author hypothesized that resilience, spirituality, and perceived social support would all be negatively associated with terrorism-related anxiety. Furthermore, it was posited that spirituality would moderate the relationship between previous trauma and terrorism-related anxiety, and that perceived controllability would moderate the relationship between denial and terrorism-related anxiety. A cross-sectional design utilizing correlation and regression analyses was selected to assess the relationships between the predictor and dependent variables, as well as a series of demographic variables. A total

of 154 individuals completed a questionnaire packet containing reliable and valid self-report items, which was posted on a secure web site accessible only to study participants. Of the three main effect hypotheses, only the hypothesis involving resilience and terrorism-related anxiety was partially supported. Resilience was significantly and negatively correlated with one of two measures terrorism-related anxiety; it also had significant negative relationships with both measures of terrorism-related anxiety in separate regression analyses. In addition, the interaction effect involving spirituality and previous trauma was partially supported. For one of two measures of terrorism-related anxiety, the spirituality-previous trauma interaction term had a negative relationship with the criterion. Based on the results of this regression, we see that for those who reported high levels of spirituality, higher amounts of trauma were associated with less terrorism anxiety. For people low in spirituality, the level of anxiety stays roughly the same, regardless of the amount of trauma. The significant and non-significant findings for the present study provide tentative directions for future research into terrorism-related anxiety.

INTERNAL AND ENVIRONMENTAL BUFFERS OF TERRORISM-RELATED
ANXIETY

by

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Chapter 1: Introduction

In the United States, living with terrorism is a new phenomenon. The September 11[th,] 2001 terrorist attacks killed over 3,000 people. In the years since that time, many Americans have been living in a state of hypervigilance. There have been several instances of "Code Orange"- where the nation has been placed under a high terrorist alert because of intelligence information suggesting the imminence of another attack. In addition, high profile arrests of terrorist cells in Buffalo, Detroit, and Oregon have only served to heighten Americans' fears that the enemy is living within us, waiting for the opportune time to strike. It seems that ever since 9/11, Americans have collectively been waiting for the other shoe to drop. A nationwide Associated Press – Ipsos Public Affairs poll of 1,001 Americans taken in April 2004 found that two-thirds of those sampled expected a terrorist attack to occur at some point prior to the November 2004 elections (AP-Ipsos, 2004). Although this did not happen, the poll serves as an indicator of the nation's mood regarding the threat of terrorism. Butler and colleagues (2003a) write that the enduring threat of future terrorist attacks, including those using biological, chemical, nuclear and radiological weapons, leaves many people feeling ill at ease with the present and worried about the future. According to Schuster and colleagues (2001), when people are expecting disaster, their fears can exacerbate existing symptoms as well as create new ones. Living with this chronic threat of terrorism is a new type of anxiety that most Americans have never had to deal with before.

Thus, there is a compelling need for research on the internal and environmental mechanisms that buffer us from the state anxiety that the threat of terrorism creates. Since the United States has never been under a prolonged threat of attack, there is no

information to tell us what differentiates our citizens in adjusting to terrorism-related anxiety. The present study is an attempt to create some initial knowledge about what factors might be important in helping us deal with terrorism-related anxiety on a daily basis. Even when trauma-related stress was studied *following* an attack, researchers commented on a lack of existing research that measured trauma-related symptoms of stress in people who do not qualify as having a psychiatric disorder (i.e. the general population) (Schuster et al., 2001).

As it is a new construct, what exactly is terrorism-related anxiety? In the current study, it is defined as the stress created by fearing that terrorism will threaten one's life or that of a loved one. This construct is theorized as having affective, cognitive, and physiological symptoms. Terrorism-related anxiety is an anxiety that is specific to terrorism. It could potentially be subsumed under other broader types of anxiety, such as generalized anxiety disorder, but also be a distinct construct. Thus, one could have anxiety regarding other stressors outside of terrorism and still experience terrorism-related anxiety. Or, one could be relatively free of other anxieties, but still preoccupied (to differing degrees) with a fear of terrorism. With terrorism-related anxiety, this fear is seen as being deeply personal — that terrorism will affect *you* or someone you care about.

Currently, there are two sources of information to which we can turn to in order to gain clues about our protective mechanisms from terrorism-related anxiety. The first source is literature studying American responses to terrorism. This literature looks at how we responded immediately after the two biggest significant terrorist attacks of the last ten years: Oklahoma City and 9/11. What factors enabled certain people to adjust

better than others in the aftermath of these attacks? These factors, as they pertain to the constructs in the present study, will be discussed in the literature review section. The second source is literature studying worldwide responses to terrorism. This source looks at other societies that have had to deal with the chronic, daily anxiety associated with a long-term terrorist threat. Examples are Israel, Ireland, and Colombia. Certainly such information is valuable, and research findings from these societies will be pondered in relation to our own. However, despite our commonalities as human beings, every society is different. In Israel, for example, unique factors influence the people's psyches, such as having a national history of war, being surrounded by hostile countries, and having an alternate population (Palestinians) who live on the same land and consider it to be their own.

Americans have our own societal characteristics, as well. For example, one general feature of our culture is its religiosity. After September 11th, one study found that 90 percent of its American sample turned to religion in some way or another (Schuster et al., 2001). For this reason, in the present study the author seeks to understand the protective role that spirituality provides from terrorism-related anxiety.

Besides spirituality, what other variables might prove valuable in understanding how terrorism-anxiety is buffered amongst Americans? According to Butler and colleagues (2003a), people most at risk for ongoing terrorism-related stress are those who have directly experienced a loss (personal injury, death of loved ones, witnessing the death/injury of others) from terrorism, emergency personnel who worked on the scene of an attack, family members of the above two groups, children, individuals who perceive themselves to be in particular jeopardy of a potential terrorist attack, individuals who

could be targets of a terrorism backlash (e.g. Arab-Americans), individuals with previous trauma experience, individuals with a mental illness history, individuals experiencing other serious life stressors, and those with minimal social support systems. Because the present study is interested in the general adult population, emergency personnel, children, and the mentally ill are not foci of the present research. Furthermore, while certainly a compelling subgroup, individuals concerned with a terrorism backlash are not a focus either. This is because the criterion variable, terrorism-related anxiety, is the fear of an actual terrorist attack itself, not the potential backlash from it.

Based on Butler and colleagues' (2003a) remaining risk categories, several variables can be delineated. First, previous exposure to trauma – both terrorism and general trauma – seems to be an important predictor of terrorism-anxiety. In addition, perceived controllability over terrorism seems important. For example, in Butler and colleagues' (2003a) work, individuals who perceived themselves to be at greater risk of being a victim of terrorism experienced greater stress. Although some of these individuals might have believed that they could take steps to better protect themselves (thus increasing their sense of controllability over the situation), the overall image seems to be one of helplessness and lack of control over one's situation. Finally, based on Butler and colleagues' (2003a) categories, social support seems to be an important factor in minimizing terrorism-related anxiety. This relationship is supported by additional research on social support and terrorism (Galea et al., 2002; Schuster et al., 2001; Tucker, Pfefferbaum, Nixon & Dickson, 2000; Norris et al., 2002).

Researchers and practitioners have stressed the importance of building resilience in response to terrorism-related anxiety. Vera and Reese (2000) state that resilience has

three components: a dispositional component, a familial component, and an environment component. In particular, the last component can be influenced by prevention efforts. In this spirit, the APA launched its "The Road to Resilience" educational program, designed to raise levels of resilience in Americans. According to Butler and colleagues (2003a), resilience can be built before, during, and after a terrorist attack. Interestingly, there is some disagreement on the nature of resilience. While the aforementioned researchers refer to the environmental quality of resilience, other terrorism researchers such as Frederickson and colleagues (2003) view resilience completely as a trait-based quality. For this reason, understanding how resilience serves as an ongoing preventive buffer from terrorism-related anxiety seems particularly instructive.

In operationalizing the predictor variables, spirituality is defined by the author as one's belief in a benevolent god or higher power. Resilience is defined as the ability of an individual to cope better during times of misfortune and recover more quickly after them than other individuals (Butler, 2003). While this definition might imply more of a dispositional nature to resilience, it leaves open the possibility of environmental contributions to this construct. Perceived controllability is defined by the author as one's feeling of personal agency over his or her risk of being in a terrorist attack. Social support is defined as one's perception of having available social networks to utilize for support when needed. Previous trauma is defined as one's previous experience of trauma, both terrorism-related and other types of trauma. Denial is defined as one's attempts to minimize the significance of terrorism to his or her life. Finally, terrorism-related anxiety is defined as the stress created by fearing that terrorism will threaten one's life or that of a loved one. This construct is seen as having affective, cognitive, and

physiological symptoms. As the review of literature will demonstrate, each of these constructs has been linked to adjustment following a terror attack. By studying the operation of these variables in concert with one another, the present study hopes to understand how they individually and collectively work to buffer individuals from anxiety about imminent terrorist attacks.

The present study focuses on the adjustment of Washingtonians to living under the constant threat of terrorism. Washington, DC and its outlying suburbs are a unique sub-population within America. This region has experienced a great deal of terrorism-related trauma in recent years. In addition to the Pentagon attack on 9/11, the entire Washington region was besieged by the sniper attacks in 2002. It can be argued that the sniper attacks were a form of terrorism. At the time, no one knew who was perpetrating the attacks, and some feared that they were the work of an international terrorist organization such as Al-Qaeda. Regardless of the identity of the perpetrators, Washingtonians lived in a constant state of fear, with many residents afraid of being in public places. Beyond actual terrorist attacks, Washington, DC is also unique because of its psychological symbolism. As the seat of government, Washington will always be a potential target for enemies of our country. Individuals living and working in this city must contend with the reality that their city has particular appeal to terrorists because it is the home of the executive and legislative branches of government. Incredibly, no research to date has focused exclusively on the reaction of adult Washingtonians to either actual terrorist attacks (9/11) or the potential threat of additional terrorist attacks. Thus, there is a compelling need for research on this important sub-population of Americans.

The author of the present study hopes to make a unique contribution to the existing body

of research by exclusively focusing on our nation's capital.

The Issue of Generalized Anxiety

Some individuals will question how terrorism-related anxiety can be studied

without also looking at generalized anxiety or generalized anxiety disorder (GAD). Is

terrorism-related anxiety distinct from generalized anxiety? Could terrorism anxiety be

one symptom under the broader umbrella of GAD? The author of the present study

believes that these questions, while important, are premature and peripheral to the issue

being studied. At this stage in the research, terrorism-related anxiety is a mostly

theoretical construct that has been only minimally tested. Hence, more should be learned

about it before it is to be compared to other types of anxiety. Once an accurate

conceptualization of terrorism-related anxiety has been formed through research

documentation, then it will be more appropriate to examine its convergence with or

divergence from related constructs. Furthermore, correlational research (such as the

present study) can only show a high rate of coincidence between terrorism-related anxiety

and generalized anxiety. Many constructs, symptoms, or disorders have high rates of

correspondence, yet are distinct from one another. Thus, even if the two constructs were

compared and found to correlate highly, we could not say that they are one and the same.

Even if this issue were to be pondered solely on a theoretical level, where some sort of

overlap between the two constructs is bound to exist, we would see that it ultimately

bears little relevance to the research hypotheses and questions being posed. This is

because the author does not seek to examine the part of terrorism-related anxiety (small

or large) that is distinct from generalized anxiety. Rather, he is interested in the entire

construct of terrorism-related anxiety, including the part that overlaps with generalized anxiety. Hence, determining the amount of overlap with generalized anxiety is not central to the research at hand.

Chapter 2: Review of Literature

In the present study, the relation of six constructs – spirituality, resilience, perceived social support, perceived controllability, denial, and previous trauma — to the management of terrorism-related anxiety were examined. In this review of literature, relevant research findings for each construct are examined. In order to have direct relevance to the current study, literature is limited to studies involving adults (college age and up). For terrorism-anxiety, a relatively new construct, this review is exhaustive; for the rest of the constructs, the review is selective. For the selective portion of the review, studies were chosen that examined each predictor variable in the context of trauma, in general, or trauma as a result of a terrorist attack, in specific. Within this framework, all relevant studies were examined.

Terrorism-related anxiety

As indicated above, terrorism-related anxiety is defined as the stress (affective and somatic) created by fearing that terrorism will threaten one's life or that of a loved one. A key clarification is necessary for the study. This definition does not refer to PTSD or the general stress which ensues following a terrorist attack. Rather, this definition refers to the anxiety produced by living with the pervasive threat of terrorism. Thus, rather than being a stress reaction produced by a *past* terrorist event, it is a fear of a *near future* terrorist event. In the United States, this is a relatively new phenomenon. The terrorist attacks of 9/11 have made living with terrorism a reality. However, this may be a more plausible threat in affected cities such as New York and Washington, rather than more rural areas. Thus, in order to gain an understanding of what the defined terrorism-related anxiety might be like, we can attempt to generalize findings from the

aftermath of American terrorist attacks, such as the Oklahoma City bombing and 9/11, to daily life. However, although these studies provide a valuable look into Americans' mental health shortly after the terrorist attacks, they are not necessarily predictors of long-term adjustment to terrorism (North & Pfefferbaum, 2002). At the very least, this type of research can serve as a starting point for making hypotheses. We can also look for research on terrorism in other societies (Israel, Ireland) that utilizes a similar operational definition of terrorism-related anxiety. Theadvantage of focusing on this type of research is that it is more likely to resemble the terrorism-anxiety envisioned in the present study. This is because terrorism is more of a present, chronic reality in these countries. As a result, this section of the literature review will cover both types of research.

In examining the literature of adult responses to terrorist attacks, two distinctions must be made. Researchers often study the prevalence of PTSD following terrorist attacks. Yet a large group of individuals display some sort of reaction, through symptoms, although not PTSD. When describing the normative response to terrorism, language such as "responses" and "reactions" is used. These symptoms or reactions are referred to as "psychological sequellae," and are distinct from PTSD (North & Pfefferbaum, 2002). Findings on psychological sequellae of terrorist attacks seem like they will have more relevance to the 'terrorism-related anxiety' being studied here, because they are of a lower-grade nature than PTSD, more analogous to the type of terrorism-related anxiety encountered in daily living. In addition, it is important to distinguish between the general population and the rescue workers who respond to disasters such as terrorist attacks. Rescue workers are different than the average civilian

because they have greater exposure to both general and terrorism-related trauma. Thus, several studies which examined the adjustment of rescue workers following the Oklahoma City bombing fall outside the scope of the present study.

To conclude, this 'terrorism-related anxiety' section of the literature review will examine both American and international studies on terrorism. The purpose of this review is to summarize existing findings, discuss their relevance to the present study, identify areas needing further research, and propose how the present study plans to address these deficiencies.

American Studies

Nine major studies have been published which examined predictive factors in explaining adult psychological responses/ reactions/sequellae to terrorist attacks in America (Stein et al., 2004; Liverant et al., 2004; Wadsworth et al., 2004; Delisi et al., 2003; Schuster et al., 2001; Schlenger et al., 2002; Silver et al., 2002; Galea et al., 2002; Sprang, 2000). In addition, the preliminary findings of a tenth were presented as a paper at the 2003 APA Convention (Butler, Koopman, Azarow, DiMiceli, & Spiegel, 2003). This tenth study is currently under review, and the authors expect to have it published in 2005. Although there are additional published studies regarding 9/11 and/or terrorism, they do not empirically examine terrorism responses/reactions/sequellae.

Nine out of ten dealt with the September 11th attacks, whereas one dealt with the Oklahoma City bombing. It should be noted that these studies all look at responses from the general public. Studies examining specific affected sub-populations, such as rescue workers and body handlers, are not included in this count. While commonalities between these studies will be summarized, they are also notable for their many differences. First,

some were more focused on prevalence rates of PTSD and psychological sequellae than they were with associations to potential predictors. This type of study is less relevant to the present study than those that examined the relationship between psychological sequellae and potential predictor variables. While all ten studies were survey-based, some were cross-sectional in design, whereas others were longitudinal. None of the studies used the same measures in assessing terrorism reactions, in part because there is no widely accepted self-report measure of posttraumatic symptoms (Silver et al., 2002). In addition, because of the assortment of terrorism-related events since 9/11 (anthrax, code Orange alerts, war in Afghanistan), discrepancies exist between the studies based on when the data was collected. Finally, survey administration was not uniform, with some studies using telephone interviews and others using web-based surveys (Silver et al., 2002). Thus, these issues must be taken into account when comparing findings across the ten studies.

Despite these differences, the ten studies share relatively common foci and methodology used in assessing psychological responses to a terrorist attack. Silver and colleagues (2002) longitudinally studied the role of demographic factors, mental and physical health history, lifetime exposure to stressful events, September-11th related experiences, and coping strategies utilized after the 9/11 attacks in predicting psychological outcomes (acute stress, post-traumatic stress, and global distress) over time. They utilized an internet survey, administering it to a nationwide sample (reduced to a New York City sub-sample for times two and three) three times over a six-month period. Seven hundred eighty-seven participants completed all three assessments (Silver et al., 2002).

Butler and colleagues (2003b) also longitudinally studied reactions to 9/11. Like Silver and colleagues (2002), they used a nationwide internet sample consisting of three data collection periods. They studied the relationship of demographic variables, traumatic exposure, functional social support, social support network size, coping styles, emotional suppression, and positive and negative changes in existential views with levels of psychological well-being and general distress at the six month follow-up. Three thousand one hundred participants completed all three questionnaires.

Like the two aforementioned studies, the study conducted by Liverant and colleagues (2004) was longitudinal in design, and also focused on coping responses to 9/11. Their study examined the relationship between coping strategies and anxiety levels in college students living in Boston, two and four months after 9/11. One hundred seventy-eight students participated in the first data collection and 123 in the second.

Wadsworth and colleagues (2004) also looked at coping responses to 9/11, although their study focused on age group and gender differences. They compared coping strategies, involuntary stress responses, and anxiety levels in young adolescent (6th-8th grades; 168 subjects), young adult (college students; 493 subjects), and adult (59 subjects) age groups. Because of the criteria outlined at the start of the chapter, this literature review will only focus on the findings for the young adult and adult age groups.

Schuster and colleagues (2001) conducted the first major post-9/11 study. The purpose of their study was to examine the mental health effects of the 9/11 terrorist attacks immediately after they occurred. Of particular interest to the authors were the effects on individuals seeing the events on television from afar (nationwide). A sample of 560 US adults was chosen using random digit dialing 3-5 days after the September 11th

attacks. The same set of authors re-surveyed 391 adults from the original sample two months later as part of a follow-up study (Stein and colleagues, 2004).

Another keystone of American terrorism research is the post-9/11 study conducted by Galea and colleagues (2002). Although a primary focus of their research was to identify PTSD and depression in their sample, they did examine a few potential predictors of these mental states. Because their study examined depression, a non-PTSD psychological response to terrorism, it was included in this literature review. A random sample of 1008 Manhattan residents (living south of 110th street) was recruited and measured through telephone interviews in October and November of 2001. Interviews were conducted in English and Spanish.

Schlenger and colleagues (2002) primarily focused on levels of PTSD and general distress in sub-samples of New York, Washington, and other metropolitan areas. Only general demographic predictors were compared with these criterion variables. The authors used a web-based panel from the internet research company used in the study by Silver and colleagues (2002). In fact, one wonders how distinct the samples from these two studies were from one another. In this study, 3131 participants were selected, from which 2273 complete surveys were returned.

Like Schlenger and colleagues (2002), Delisi and colleagues (2003) also focused primarily on psychological responses to 9/11, as opposed to predictors of these responses. The authors interviewed 1,009 adult participants in Manhattan. Participants were selected based on where they lived (equal distribution by neighborhood), and their demographic backgrounds (sample composition was chosen to represent New York City census statistics). Interviews occurred 3-6 months after the terrorist attacks.

The final study to consider in evaluating American reactions to terrorism comes from the aftermath of the Oklahoma City bombing. Sprang (2000) looked at the relationship between coping and distress across four dimensions – current level of distress, perception of current and future risk, PTSD symptoms, and degree of perceived victimization. She believed that survivors who coped successfully would be able to face and accept their own vulnerability to terrorism. She predicted that individuals who were high in avoidance coping would experience more distress across all four dimensions than individuals who used task or emotion-focused coping. In order to select a sample group, the author asked subjects from an earlier study to participate. Four hundred two of 482 individuals agreed to participate in the current study. This number was further reduced to 383 because 19 participants had experienced another stressful life event since the Oklahoma City bombing.

Before reviewing the relations of various predictors with psychological responses to terrorism, one must first consider the severity of those responses. Does terrorism generate a psychological response? More relevant to the present study, does terrorism generate a long-lasting response – one that could lead to anxiety about future attacks? Based on the aforementioned studies, the answer to both questions seems to be a 'yes.' Although the statistics vary by study, Americans certainly seemed to be disturbed by the September 11th terrorist attacks. Schuster and colleagues (2001) found that most Americans exhibited some kind of stress reaction in response to 9/11. Forty-four percent of the participants experienced one or more symptoms of stress, and 90% had one or more symptoms to at "least some degree". In a follow-up study with the same sample two months later, Stein and colleagues (2004) found that 16% still had a high level of

distress, whereas 30% had improved to some extent, and 54% reported minimal distress at both assessments. Schlenger and colleagues (2002) discovered high levels of distress in New York City (16.6%), Washington, DC (14.9%), and other metropolitan cities (12.3%) following 9/11. In a Manhattan sample of a study by Galea and colleagues (2002), 7.5 percent of the participants displayed symptoms consistent with PTSD and 9.7 percent displayed symptoms consistent with depression after 9/11.

In addition, after 9/11, Americans expressed anxiety about the occurrence of future terrorist attacks. Silver and colleagues (2002) studied anxiety about future terrorist attacks in subjects two and six months following 9/11. Participants were asked how often in the past week they had worries about the chance of another terrorist attack or if they were concerned that a terrorist act would affect them or a family member in the future. This conceptualization of terrorism-anxiety seems to be the closest one on record in American terrorism research to the current study. It is focused on concerns about future terrorist attacks, rather than distress about past ones. Six months after 9/11, 37.5% of the sample still had fears of future terrorism and 40% feared harm to their families from terrorism. Because 96% of the sample was not directly victimized by 9/11, this shows that one does not need to be directly touched by a terrorist attack to have future fears of terrorism (Silver et al., 2002). In addition, these high numbers well after 9/11 suggest that terrorism-related anxiety is still a relevant construct today. Like Silver and colleagues (2002), Sprang (2000) focused on individuals' perceptions of future risk. In her study, the predictors influenced current distress and perception of future risk in the same manner. This is an important distinction to make, because it creates a parallel with the underlying concept of the present study – namely that one's current distress about

terrorism may be related to his or her perception of the potential for future risk associated with terrorism. Liverant and colleagues (2004) also found that their subjects reported feelings of anxiety following September 11th. As their sample was only indirectly exposed to the trauma – through watching television coverage of the event– they argue that one does not need to be directly exposed in order to experience anxiety. Rather, they suggest, it is the disruption of core beliefs about safety that influences the increase in anxiety. In their study, however, levels of anxiety decreased from time one (two months after 9/11) to time two (four months after 9/11). This was despite constant media coverage of the event throughout the study. They conclude that the psychological impact of indirect exposure to a terrorist trauma decreases over time. The findings of Silver and colleagues (2002), Sprang (2000), and Liverant and colleagues (2004) allow us to draw a conceptual link between psychological responses to terrorism and anxiety about future terrorist attacks (construct of terrorism-related anxiety). Although there is some disagreement between studies over the lasting effects of anxiety in response to a trauma, there clearly seems to be a connection. Having demonstrated the presence of psychological responses to terrorism in America, as well as the connection between responses to past terrorist events and anxiety about future ones, we will now seek to understand the factors that contribute to these psychological responses to terrorism.

Perhaps more so than any other construct, coping strategies seemed to be the biggest predictor of psychological responses to terrorism. Coping strategies were associated with both post-traumatic stress symptoms and level of distress in the study by Silver and colleagues (2002). Specifically, distress increased with the use of denial and disengagement, self-blame, and seeking social support, and decreased with active coping

(actively addressing the problems associated with the stressor). Most notable was the fact that coping strategies used in the immediate wake of attacks predicted psychological outcomes over time, even when all the other variables studied were controlled for. This suggests that selection of coping strategies immediately following a terrorist attack has a large impact on subsequent distress (Silver et al., 2002). Butler and colleagues (2003b) also found a relationship between self-blaming, self-criticism and psychological responses to 9/11. Those who were less self-blaming and less self-critical reported less distress and higher well-being six months after 9/11. Liverant and colleagues (2004) found that denial, behavioral and mental disengagement, and focusing on and venting of emotions were predictive of increased anxiety two months after 9/11. However, they found that focusing on and venting of emotions was the only coping strategy to be predictive of increased anxiety four months after 9/11. Conversely, Wadsworth and colleagues (2004) found that emotion-based coping was predictive of better functioning in their female subjects following 9/11 (no relationship for the male subjects). As with the other studies, Wadsworth and colleagues (2004) found that disengagement was predictive of worse functioning, although only for females. Sprang (2000) found that use of avoidance coping was related to higher current distress, higher perceived future risk, and higher perceived level of victimization following the Oklahoma City bombing than use of task or emotion-focused coping. This parallels the findings that distress following 9/11 increased with use of disengagement coping (analogous to avoidance coping) (Liverant et al., 2004; Wadsworth et al., 2004; Silver et al., 2002). Summarizing the findings from these five studies, we have strong evidence that the use of disengagement/avoidance is negatively related to psychological adjustment following a

terrorist attack (Liverant et al., 2004; Wadsworth et al., 2004; Sprang, 2000; Silver et al., 2002; Butler et al., 2003b). We also have support for a negative relationship between self-blame and psychological adjustment (Silver et al., 2002; Butler et al., 2003b). Finally, we have inconclusive findings regarding the relationship between emotion-focused coping and psychological adjustment (Liverant et al., 2004; Wadsworth et al., 2004).

Another clear trend emerging from this literature is the importance of social support in predicting psychological responses to a terrorist attack. Although this construct was operationalized differently across the studies, the results were similar. Galea and colleagues (2002) found that poor social support predicted depression following 9/11. Butler and colleagues (2003b) discerned that those pleased with their emotional support systems had lower distress and higher well-being following 9/11 than those who were not as pleased with these support systems. While Schuster and colleagues (2001) did not study the relationship between social support and stress, they did find that 98% of their sample spoke to others as a way of coping with the stress of 9/11. As a result, one can infer that utilizing social support is an important way of handling terrorism-related stress. Finally, the presence of a romantic partner can also be considered to be a type of social support. Silver and colleagues (2002) found that marital separation was associated with post-traumatic stress symptoms. Thus, while operationalization of social support differed across studies, social support seems to be adaptive in helping an individual respond psychologically to a terrorist attack.

There also seems to be a clear association between loss and psychological responses associated with a terrorist event. Silver and colleagues (2002) discovered a

relationship between exposure to 9/11 and post-traumatic stress symptoms following the event. They also found that the severity of the loss from the attacks was related to level of distress. Death of a relative and/or friend and loss of employment were also associated with depression (Galea et al., 2002) and psychiatric symptoms (Delisi et al., 2002).

Perhaps surprisingly, the results were mixed when it came to relating previous exposure to trauma with psychological responses following 9/11. Galea and colleagues (2002) found that two or more prior stressors were related to higher depression following 9/11. However, other studies found no relations between previous trauma and level of distress (Silver et al., 2002; Butler et al., 2003b), and previous trauma and well-being following 9/11 (Butler et al., 2003b). At the moment, we are unsure of the reasons behind these contradictory results. The author of the present study plans to hypothesize an explanation for these contradictory findings.

Television viewing was also related to levels of distress following 9/11 (Schuster et al., 2001; Schlenger et al., 2002; Liverant et al., 2004). Schlenger and colleagues (2002) found that that the content of the television viewed was associated with one's level of distress, whereas Schuster and colleagues (2001) found a positive relationship between the amount of television watched and amount of stress. Liverant and colleagues (2004) found significant levels of anxiety two months after 9/11 in a sample of Boston subjects whose only exposure to the trauma was indirect (media coverage).

Finally, six of the ten studies examined the role of demographic factors in predicting psychological responses to terrorist attacks. However, the choice of constructs varied greatly by study. Wadsworth and colleagues (2004), Silver and colleagues (2002), and Schlenger and colleagues (2002), found a relationship between gender and

psychological response. Wadsworth and colleagues (2004) also found several age trends with respect to coping strategies employed in response to 9/11. Butler and colleagues (2003b) found a relationship between level of education and psychological response. Specifically, those with higher levels of education seemed to respond better to the 9/11 attacks than those with lower levels of education. Galea and colleagues (2002) found that Hispanic ethnicity was a predictor of depression in Manhattan neighborhoods following 9/11. Finally, Silver and colleagues (2002) found a relationship between one's mental health prior to the attacks and one' psychological reaction to the attacks. Those with higher levels of pre-9/11 anxiety, depression, and illness experienced higher levels of post-traumatic stress symptoms following 9/11.

These findings have a great deal of relevance to the structure of the present study. For example, we see the importance of coping strategies in predicting distress about terrorism (Liverant et al., 2004; Wadsworth et al., 2004; Silver et al., 2002; Butler et al., 2003b; Sprang, 2000). The use of denial, one of the featured constructs in the present study, is shown to have negative relationships with the criterion variables (Liverant et al., 2004; Silver et al., 2002). In addition, while the present study only focuses on one specific coping strategy (denial), it does look at related domains (that buffer stress) such as resilience, perceived social support, and perceived controllability. These findings provide tentative support for studying these variables (Silver et al., 2002; Butler et al., 2003b). Furthermore, we see that social support is a potentially important buffer of stress following a terrorist attack (Schuster et al., 2001; Galea et al., 2002; Butler et al., 2003b). Thus, we can hypothesize that it may potentially influence anxiety about future terrorist attacks as well.

Despite these encouraging findings, much is missing in our understanding of terrorism-related anxiety. Perhaps most importantly, none of the ten studies reviewed looked at the hypothesized variables in unison in examining their influence on terrorism-related anxiety or terrorism-stress. Thus, we are left to piece together findings from different studies. As mentioned earlier, this is due to the newness of this research field in this country. Of the ten studies, four did not even focus on predictors of psychological responses to terrorism (Delisi et al., 2002; Schlenger et al., 2002; Schuster et al., 2001; Stein et al., 2004). The Delisi and Schlenger (2002) studies were exclusively focused on collecting rates of PTSD and psychological distress following the 9/11 attacks. The study by Schuster and colleagues (2001) and its subsequent follow-up by Stein and colleagues (2004) were exploratory in nature, and thus lacked constructs of interest and did not make hypotheses. Thus, we have a very small pool of studies from which to draw inferences.

In addition, most of the studies reviewed focused on the country as a whole. The present study is concerned only with the attitudes of Washington, DC area residents. This geographic area is unique for both its political and national significance, and psychological connection to terrorism (9/11 and the sniper attacks). Missing from the current body of literature on American terrorism are studies which focused exclusively on this geographical area. This distinction is useful because it highlights the need for research on the citizens of the Washington metropolitan area. Of all ten studies, only the one by Schlenger and colleagues (2002) utilized a Washington, D.C. sub-sample. Unfortunately, their study only assessed levels of distress following 9/11. When one considers that the scope of their research was quite limited, we see that much is unknown about terrorism predictors and reactions of adults living in the Washington metropolitan

area. Galea and colleagues (2002) utilized an exclusive New York City sample; Liverant and colleagues (2004) a Boston sample; Wadsworth and colleagues (2004) a Colorado sample. The rest of the studies reviewed relied on samples composed of individuals living throughout America. Thus, the author of the present study hopes to make a unique contribution by limiting his focus to our nation's capital.

Finally, as alluded to earlier, perhaps the most important deficiency of the existing American terrorism research is its focus on reactions to past terrorist events, such as 9/11 and Oklahoma City. No American research exists on ongoing attitudes towards terrorism in at-risk areas. Only Silver and colleagues (2002) and Sprang (2000) assessed anxiety about future terrorist attacks, and even this was in the aftermath of recent terrorist attacks. For this reason, we must turn to existing international studies for operationalizations of terrorism-related anxiety that are more closely related to that of the present study.

International Studies

In seeking to understand the stressor of terrorism more comprehensively, the author sought out research from countries chronically affected by terrorism. Countries with existing terrorism research include Israel, Saudi Arabia, and Ireland. As with American terrorism research, this review of literature focuses on studies examining samples representative of the general populations in these countries.

In Israel, because of the frequency of terrorist attacks, many studies follow attack survivors over time. Several studies have examined the attitudes of the general public regarding terrorism. Friedman and Merari (1985) studied national attitudes on terrorism by selecting a sample of 500 participants from four major Israeli cities (Jerusalem, Tel

Aviv, Haifa, and Beer Sheba). Their survey was brief, consisting of only four items measuring level of worry (not including demographic portion). They found a high level of terrorism-related anxiety, with 93% of their sample concerned about the potential for terrorist attacks occurring in Israel, and 73% concerned that a terrorist attack would occur in their midst. The authors also found some relation between terrorism-stress and demographic variables. Females expressed higher degrees of extreme worry than males (79% to 66%). In addition, educational level was related to worry. The percentage of individuals expressing extreme worry or worry dropped with educational level. Individuals with university education expressed the least amount of worry (61%), followed by secondary education (75%). Individuals with an elementary education (88%) expressed the most amount of worry. It is unclear why this relationship exists, although it is echoed in other studies (Galea et al., 2002; Butler et al., 2003b). As a result, education level will be assessed in the demographic section of this study.

Gidron and colleagues (1999) sought to examine the efficacy of three coping strategies – problem-focused coping, emotion-focused coping, and denial – in helping individuals adapt to terrorism-related anxiety. The authors were influenced by previous work suggesting that problem-focused coping works best with controllable stressors, whereas emotion-focused coping and denial work best with uncontrollable stressors. They sought to see whether these relationships would apply with the uncontrollable stressor of terrorism. Gidron and colleagues (1999) predicted that bus-commuters in Israel living with the uncontrollable stressor of terror attacks on buses (4 suicide bus bombings in the previous year) would display a positive relationship between the use of

problem-focused coping and anxiety from terrorism, whereas emotion-focused coping and denial would be negatively related to anxiety from terrorism.

Eighty-one bus commuters were approached at a central bus station in Haifa, Israel and asked to fill out a brief one-page questionnaire. Of the 81 people recruited, 50 agreed to participate. The recruitment and administration occurred 4-5 days after a terrorist attack in Jerusalem. Participants completed a one-page Hebrew questionnaire which included six items on the three different coping strategies, and three items measuring anxiety from terrorism.

Results show that terrorism-anxiety was positively associated with the use of problem-focused coping, and with combined strategies utilizing problem-focused coping (problem-focused coping and denial, problem-focused and emotion-focused coping). Denial had a negative relationship with terrorism-anxiety (.18) that approached significance. The findings seem to support the authors' hypotheses, illustrating that when one can't control the situation (terrorism), one feels better when working on calming his or her emotions, distracting his or herself, or denying the severity of situation. When one actually works to try to solve a problem (bus terror attacks) that he or she has no control over, he or she feels the most anxiety.

Gidron and colleagues' (1999) study informs the present one by demonstrating the importance of perceptions of controllability and denial (two of our predictor variables) on terrorism stress and coping tactics. However, the exposure of the general public to terrorist attacks is much higher in Israel than the U.S. For example, according to Friedland and Merari (1985), 271 terrorist attacks occurred in Israel in 1979. Thus, one might be quicker to assume a lack of control in Israel than the U.S. Despite the

severity of September 11th, many Americans could still perceive control over their lives because of the relative infrequency of terrorist attacks in the U.S. In Israel, one would assume that the frequency of attacks would make it more difficult for an individual to perceive control over his or her life (from terrorism), unless he or she was in denial.

In addition to Israel, other Middle Eastern countries experience terrorism as well. In Saudi Arabia, for example, a terrorist attack on the modernization program of the Saudi Arabian National Guard killed seven individuals (five Americans), and wounded 69 others. Applewhite and Dickens (1997) conducted a qualitative descriptive study (informal content analysis) in which a mental health team interviewed and evaluated 52 of the 69 survivors. The goal of the assessment was to look at the effectiveness of various coping approaches and the overall adaptation of individuals affected by the attack. Data was collected 3-6 weeks after the attack. Twenty-seven of the 52 victims (52%) chose a face-to-face interview, whereas 25 (48%) chose a telephone interview. Seventeen (25%) of the victims were not available because they had either left for the US to receive medical treatment or had left Saudi Arabia for vacation. An assessment tool was used to help structure the data-gathering process, although the interviews were not standardized, so as to allow the victims whatever latitude was clinically necessary.

In reviewing the findings, 22 victims (42%) reported no psychological difficulties and said they were coping well. Of this group, four themes emerged from their comments as buffers of stress. First, a "significant" number of people in this group said they used emotional support from friends, neighbors, and colleagues to help them cope with the trauma. Another tactic helpful in healthy adaptation was a positive re-appraisal

of one's actions during and/or after the attacks. This seems to have helped these victims regain a sense of control and mastery of their lives. A third helpful factor was prior experience with terrorist threats. This experience and awareness helped these individuals respond to the attacks. Finally, less frequently, some people reported that focusing on work (the rebuilding of their organizational operations) helped distract them from thinking about the bombing. The rest of the sample reported individual psychological symptoms that could be collectively associated with PTSD. Nineteen percent had sleep disturbance, 17% were concerned for their family's or their own safety, 13% were hypervigilant in their activities, 10% were irritable, 10% were guilty about their actions in the attack, 8% had difficulty concentrating, 6% had generalized anxiety, and 4% had flashbacks/intrusive thoughts about the blast.

Perhaps most relevant to the present study was the use of positive appraisal and social support by participants as methods of positively adjusting to the terrorist attacks. Positive re-appraisal is a tactic used by resilient people (Frederickson et al., 2003; Kobasa, 1979). Thus, this study provides some insight into one reason why resilient people may respond better to terrorism than other individuals. It will be interesting to see whether this holds true for individuals adjusting to the threat of potential terrorism, as well. In addition, as with other studies (Galea et al., 2002; Butler et al., 2003b), social support is seen as a positive tool for helping individuals adjust to terrorism.

Ireland is another area that has traditionally experienced its share of terrorism-related violence. Cairns and Wilson (1989) conducted a study based on their earlier finding which showed that the perception of terrorism violence influences stress, not the actual objective reality. The authors hypothesized that denial may be a key coping

strategy, because it allows individuals to minimize their perception of terrorism violence, thus reducing their stress. Specifically, they predicted that location (Northern Ireland towns with low and high political violence) and appraisal (perception of violence) would influence the amount and type of coping. They predicted more denial in the high violence town, and more denial by those reporting less violence. They also predicted that people would use the coping strategy of seeking social support more than they would use denial. Finally, they expected trait neuroticism to be unrelated to appraisal of violence or coping (in that neuroticism is not related to how one perceives violence or how they cope with it). Questionnaires were given to 430 subjects (over 18 years old) in two towns. These towns were comparable demographically, other than the fact that they had experienced different levels of political violence. Subjects were recruited and given the questionnaires on the streets of their respective towns on the same day.

The authors found a main effect for distancing (analogous to denial) -- people in the high violence town used the distancing coping strategy more frequently than those in the low violence town. They also found a main effect for perceived violence; those who reported perceiving the most amount of violence (in both towns) used distancing less than those who reported less violence. Thus, both of these findings supported the authors' hypotheses. Cairns and Wilson's (1989) major conclusion from the study is that distancing predicts one's perception of violence. Distancing may function as a way of buffering the person from the stress that comes with perceiving high amounts of political violence.

Cairns and Wilson's (1989) findings seem consistent with those of Gidron and colleagues (1999). These two studies illustrate that when one perceives that he or she has

little control over terrorism, denial/distancing can be helpful in reducing terrorism-related anxiety. This sets up a contradiction between research findings. Generally, American research on terrorism indicates a positive relationship between denial/distancing and terrorism-related anxiety (Silver et al., 2002; Sprang, 2000), whereas some international terrorism research (Cairns et al., 1989; Gidron et al., 1999) seems to indicate the opposite. Based upon this initial research, it seems that the perception of controllability over terrorism may determine the adaptiveness of denial. When a population comes to realize they have no control over the impact of terrorism on their lives, using tactics to minimize the significance of the stressor on their daily lives seems adaptive in reducing terrorism-related anxiety. However, when individuals still feel control or are trying to establish control, denial seems counterproductive. It is for this reason that the present study will assess both perceptions of controllability and use of denial in response to terrorism-related anxiety.

To conclude, based upon some of the general trends from the body of research on predictors of adjustment to terrorism-related anxiety, we can certainly make a case for studying the variables chosen for the present study. Although terrorism is a relatively new phenomenon, we have progressed to the point of being able to generate confirmatory research.

Spirituality

Research studying the relation between spirituality and terrorism is in an emerging stage. Until 2004, only one study, by Schuster and colleagues (2001), had even looked at religion and coping. In their exploratory study conducted in the aftermath of 9/11, 90% of respondents said they used religion as a way of coping with the stress of the

terrorist attacks. However, as this was not a correlational study, no analyses were run looking at the relationship between 'turning to religion' (as they called it) and overall terrorism-stress levels.

However, in the last year, four 9/11 studies were published that referred in some way to spirituality or religion. Of the four, the study conducted by Briggs and colleagues (2004) had an operationalization of spirituality that was closest to that of the current study. They defined spirituality as "an awareness of a transcendent force beyond the material world that promotes a sense of wholeness and connectedness to the larger universe" (Briggs et al., 2004, p. 174). They identified four major sub-themes of spirituality: meaning and purpose in life, inner resources, transcendence, and positive interconnectedness. Their study was unique in that it was the only terrorism study reviewed which utilized an experimental design. One hundred participants recruited from a Southeastern university were divided into experimental and control groups. The independent variable in this study was exposure to memories of the 9/11 events, whereas the dependent variable was level of spirituality. Participants in the experimental group watched 15 minutes of news coverage of the World Trade Center attacks, whereas participants in the control group watched 15 minutes of news coverage of the Virginia gubernatorial debate. Participants completed the Spirituality Assessment Scale (SAS) to assess level of spirituality after watching one of the videotapes. The authors found that participants who watched the 9/11 tapes did not score significantly higher on the SAS than those in the control group. However, they did find a significant difference between the experimental and control groups for one of the four SAS subscales. Experimental group participants scored higher on the 'transcendence' subscale than their control group

counterparts. Transcendence refers to searching for spiritual healing by moving outside of the self and the situation to find relatedness with others. Because transcendence was the only subscale that showed a significant between-groups difference, the authors tentatively concluded that externally-based forms of spirituality may be more curative than internally-based forms of spirituality in response to terrorism stress.

There are some major methodological flaws with Briggs and colleagues' (2004) work. First, their independent variable is poorly operationalized. Their only reference to it prior to explaining the conditions is their comment that "an experimental study was conducted that examined the effects of exposure to certain memories of the events of September 11 on aspects of spirituality" (Briggs et al., 2004, p. 177). The authors never explain their intentions for this variable in any kind of detail. Are they referring to collective or personal 9/11 memories? Is the 9/11 tape supposed to induce some type of terrorism stress?   Based on their described procedure, it seems that a more appropriate title for this variable should be 'exposure to 9/11 media coverage.'

Second, and essential to drawing any kind of conclusions about spirituality, no pre-test of spirituality was ever conducted. Spirituality is only assessed post-condition. Thus, perhaps the results could be explained by between-group differences in spirituality that existed prior to the study. The authors should have assessed spirituality before and after the experiment in order to see what, if any, changes occurred due to manipulation of the independent variable. Because they do not have a pre-condition baseline of spirituality, they cannot assume that the between-group differences in transcendence are due to the manipulation of the independent variable.

Peterson and Seligman (2004) also examined levels of spirituality in relationship to 9/11. Their work was part of a larger positive psychology project examining 24 different positive traits. The Values in Action Classification of Strengths (VIA-IS) is a self-report inventory designed by the authors, and open to individuals to complete online. The authors decided to compare their findings before and after 9/11 to see what types of increases or decreases occurred for each trait. A mean was calculated for each trait based on the responses of 906 American participants prior to 9/11. Similarly, means were calculated for each trait one month after 9/11 (n = 295) and two months after 9/11 (n = 195). Based on these calculations, the authors found that spirituality was one of seven character strengths (gratitude, hope, kindness, leadership, love, spirituality, and teamwork) to increase in the period following 9/11.

Unfortunately, as with the Briggs and colleagues (2004) study, there are numerous problems that limit generalizing the findings to the current study. First, there is no measurement of a psychological response variable with which to compare spirituality. All we know is that spirituality levels increased after 9/11. We do not know what type of relationship existed between spirituality and psychological responses to 9/11. In addition, there were no controls placed on who completed the questionnaire, and no effort made to follow-up with the individuals who completed it prior to 9/11. The trait levels assessed at 3 different intervals come from different respondents. Thus, we do not know what type of change in spirituality occurred within-individual as a result of 9/11. And because of the open-access of the web site, it is difficult to generalize the findings to the overall population. The respondents could have very well all been people interested in positive psychology, not exactly a representative sample.

While the remaining two 2004 studies do not assess spirituality per se, their constructs are related. Plante and Cantola (2004) examined the association between strength of religious faith and coping with 9/11. Ninety-seven students at a West Coast university as participants filled out self-report questionnaires assessing strength of religious faith and coping with terrorism. The authors did not find a relationship between one's strength of religious faith and coping efforts following 9/11. As part of their larger study examining the relationship between coping strategies and terrorism-anxiety following 9/11, Liverant and colleagues (2004) assessed the coping strategy of 'turning to religion.' The authors did not find any significant relationship between turning to religion and anxiety.

It is difficult to glean any firm conclusions regarding spirituality from the body of terrorism research presented in this section. Because these studies have varying foci, it is difficult to garner a standard operationalization of the spirituality construct. How much commonality exists between 'spirituality', 'turning to religion', and 'strength of religion'? Furthermore, none of the five studies presented uses spirituality as a predictor variable and terrorism-related anxiety as a criterion variable. Thus, it is hard to assess what type of relationship might exist between the two constructs. Finally, the actual findings presented thus far are inconclusive and somewhat contradictory. On the one hand, studies by Peterson and Seligman (2004) and Schuster and colleagues (2001) seem to indicate that spirituality might have some utility in helping individuals adjust to terrorism. On the other hand, studies by Liverant and colleagues (2004) and Plante and Cantola (2004), indicate that religious faith (which is not completely equivalent to spirituality) was not particularly useful in helping individuals cope with terrorism.

Finally, Briggs and colleagues (2004) found no relationship between exposure to terrorism cues and level of spirituality. Yet within the same study, they did find a relationship between exposure and a component of spirituality, transcendence. At this juncture, it is difficult to know whether spirituality is related to psychological adjustment from terrorism and/or terrorism-related anxiety. And if there is a relationship, we certainly do not know what elements of spirituality or religion are most conducive to better adjustment.

Outside of terrorism research, spirituality has been shown, for the most part, to help people deal with stressful situations. Beliefs such as 'God is a just and benevolent God,' and 'God is one's partner through suffering' are related to better coping with stress (Worthington, Kurusu, McCollugh, & Sandage, 1996). Furthermore, perceived closeness to God has been tied to better psychological adjustment amongst people facing a variety of life stressors. In fact, perceived closeness of God has been shown to have greater effects on coping with stressors than global religion measures (which include concepts such as religious service attendance, frequency of prayer) (Hill & Pargament, 2003). Sewell (2000) found a positive relationship between spirituality and well-being, and a negative relationship between spirituality and distress in individuals with prior exposure to trauma. Simoni (2002) found a positive relationship between spirituality and psychological adaptation in women with HIV/AIDS. In addition, the positive effects of spiritual coping on psychological adaptation endured even when other types of coping were controlled for. On the other hand, Connor and colleagues (2003) found a negative relationship between spirituality and four outcomes (physical health, mental health, trauma-related distress, and severity of PTSD symptoms) amongst violent trauma

survivors, such that higher levels of spirituality were associated with worse outcomes. This ran counter to these authors' predictions, but they concluded perhaps spirituality serves as a method of coping for those with high distress or poor health.

In conclusion, there is currently limited research on spirituality and terrorism. The existing body of research is inconclusive, and more research is necessary. However, spirituality has been shown to be an important factor in overall adjustment to stress. Based on both of these two reasons – the need for more research on spirituality and terrorism adjustment, and the tentative support for a relationship between spirituality and overall adjustment – the construct of spirituality will be further examined in the present study.

Resilience

There is an abundance of literature showing resilience as a buffer of general stress (Rutter, 1987; Block & Kremen, 1996; Fredrickson et al., 2003). Thus far, two studies have examined the role that resilience plays in adjustment to terrorism. Both Butler and colleagues (2003b) and Federickson and colleagues (2003) found a positive relationship between resilience and improved psychological responses to the September 11th terrorist attacks. In addition, both studies examined the components that contribute to resilience. As discussed in the "terrorism-related anxiety" section of this literature review, Butler and colleagues (2003b) conceptualized resilience as being a combination of higher well-being and lower distress. They found that those with higher amounts of education, those who were more pleased with their emotional support systems, those who were less self-critical and self-blaming, and those who reported fewer negative changes to their worldview at the second data collection reported lower distress and higher well-being at

follow-up. Of all of these predictors, cognitive worldview changes accounted for the highest amount of variance in predicting resilience.

Frederickson and colleagues (2003b) also focused on the role that emotions and cognitions play in predicting resilience. In order to reframe a negative event in a positive light, it may be necessary to experience positive feelings and thoughts. The authors sought to closely examine the role that positive emotions play in building psychological resources which protect people from depression. They hypothesized that positive emotions would be the mechanism through which resilient people buffered themselves from depression following the September 11th terrorist attacks. They also predicted that positive emotions would mediate the relationship between resilience and increases in psychological resources.

Participants were drawn from an initial study on emotions. Of the 133 participants from the previous study, 47 agreed to participate Frederickson and colleagues' 2003 study. The participants completed a questionnaire packet 12-56 days after 9/11. Data taken from trait resilience and trait affectivity measures in the prior study was used in the current study. In addition, participants completed measures on mood, 9/11 problems, finding positive meaning, positive and negative emotions, depressive symptoms, and psychological resources for the current study.

The authors found that resilient people were more likely to find positive meaning in the problems they faced from the 9/11 attacks. Both of their mediational hypotheses were supported – positive emotions buffered resilient people from depression and predicted increases in their psychological resources. Based on their findings, Frederickson and colleagues (2003) concluded that positive emotions seemed to help

people get through the attacks by working in concert with negative emotions. All participants experienced negative emotions after 9/11, but resilient people were also able to get in touch with positive emotions (e.g. gratefulness, love, hope) to help them find meaning. On the other hand, non-resilient people seemed to have difficulty finding positive emotions in the midst of their negative feelings, and this was related to their experience of depression.

Thus, from these two studies (Butler et al., 2003b; Frederickson et al., 2003), we see the importance of cognitions and emotions in accounting for resilience in the face of terrorism. It seems that resilient people are able to do a better job than others of maintaining their adaptive cognitive schemas in the face of threatening, adverse environmental conditions (terrorism) (Butler et al., 2003b). They also seem to experience a greater degree of positive emotions, along with the normal range of negative emotions, than others do in response to terrorist attacks (Frederickson et al., 2003). Perhaps it is this ability to find positive meaning in the face of adversity that helps make these individuals resilient.

Although the present study focuses on resilience in the general population, studies on resilience in rescue workers can provide valuable information. Rescue workers are a relevant sub-population because their field requires a certain level of resilience in order to cope with the emotionally taxing nature of the work. Tucker and colleagues (2002) sought to understand how Oklahoma City bombing body handlers responded to the stress of the event, as well as to identify any potential reasons for their psychological responses. The authors were interested in evaluating the role of coping styles on the experience of trauma/stress from the attack.

Body handlers were assessed retrospectively two years after the Oklahoma City bombing. One hundred thirty-five body handlers were contacted, of which 51 (38%) responded. Participants completed a 100-item questionnaire packet measuring demographic variables, professional experience with disasters, personal experience with disasters, alcohol use, posttraumatic stress, depression, physical/mental problems, and coping.

Participants reported strikingly low amounts of post-traumatic stress and depressive symptoms, both at the point of the bombing and one-year later (although both time points were retrospectively remembered). These findings indicate that this group may be very resilient dispositionally, particularly since they had very little prior experience with trauma. Positive reframing and spending time with others (social support) were the two most-frequently used coping strategies, although there were no differences between those who used and did not use each coping strategy in terms of post-traumatic stress and depression. This signifies that coping did not figure prominently in stress or depression for the sample. Rather, potential explanations for the body handlers' resilience could include their personality characteristics and/or post-event stress management training and debriefing programs that they received (Tucker et al., 2002).

The relationship between resilience and positive psychological adjustment extends beyond terrorism to other traumas, as well. Terrorism is often compared to natural disasters because of the devastation it creates. Norris and colleagues (2002) conducted a meta-analysis of literature on disasters, analyzing the results of 160 samples of disaster victims. They found that most samples of rescue workers displayed resilience,

enabling them to deal with the stress they were experiencing as part of responding to the disaster.

Thus far, this review of literature has dealt primarily with dispositional characteristics of resilience. Certain studies such as the one by Block and Kremen (1996), which advanced the concept of ego-resilience, have focused exclusively on this aspect of resilience. However, as mentioned earlier in this paper, there is extensive support for other components of resilience besides personality. Resilience is thought to be influenced by personality features, degree of family cohesion, and external support systems (Rutter 1987; Vera & Reese, 2000). For this reason, education campaigns such as the 2002 APA "The Road to Resilience" campaign have focused on building resilience in the public. Some areas emphasized in this campaign include making connections with others, avoiding viewing crises as insoluble difficulties, accepting that change is a part of life, moving towards goals, taking decisive actions, embracing self-discovery, developing a positive self-concept, trying to keep things in perspective, maintaining optimism, and treating oneself with care (Butler et al., 2003a). Thus, there seems to be support for conceptualizing an environmental component to resilience, as well. The present study seeks to measure resilience in a manner which will capture both the trait and environmental components of this construct.

Perceived Social Support

Social support has consistently been identified as a predictor of how one responds to stress, including terrorism-related anxiety (Liverant et al., 2004; Galea et al., 2002; Schuster et al., 2001; Silver et al., 2002; Norris et al., 2002; Tucker et al., 2002; Tucker, Pfefferbaum, Nixon & Dickson, 2000; North, Tivis, McMillin & Curtis, 2002;

Applewhite & Dickens, 1997). However, interpretations of its utility differ by study. Of six studies looking at the relationship of social support with PTSD and general distress following a terrorist attack, results were mixed. On the one hand, many studies found a positive relationship between perceived social support or seeking social support and psychological adjustment following a terrorist attack. On the other hand, many studies found that seeking social support as a coping tactic was either unrelated or negatively related to psychological adjustment. Both types of findings will be reviewed below.

Certainly, there is moderate evidence that the presence of social support is associated with decreased terrorism-stress. Galea and colleagues (2002) surveyed participants who lived in a 100 block radius of the World Trade Center, one to two months following 9/11 (for more details, see "terrorism-related anxiety" section above). They asked participants to retrospectively evaluate their total social support in the six months prior to 9/11. Participants were asked about social support across three dimensions – emotional, instrumental, and appraisal. The authors found that a low level of social support was a predictor of both depression and PTSD for their sample. Applewhite and Dickens (1997) found in participant interviews that utilizing others for social support was one way that survivors of a terrorist attack in Saudi Arabia successfully coped with the trauma. It should be noted, however, that their study was a loosely organized qualitative study. Thus, social support was not scientifically correlated with adjustment. Schuster and colleagues (2001) found that Americans nationwide tried to cope with their stress about 9/11 by talking with others about it (98% of all respondents). They also found that those who had a substantial stress reaction were more likely to use this coping tactic than those who did not. However, because of the study

design, it is impossible to evaluate whether use of social support was associated with

reduced distress and better adjustment. Finally, although not dealing specifically with

terrorism, Norris and colleagues (2002) found a positive relationship between

psychosocial resources and psychological adjustment in disaster workers following a

national disaster. Those who had poor or deteriorating resources fared worse than the

others.

Yet despite this set of findings, other studies found either a negative relationship

or no relationship between seeking social support and psychological adjustment. Silver

and colleagues (2002) found that in the six months following the September 11th attacks,

study participants who sought out social support (for either emotional or instrumental

reasons) experienced higher amounts of PTSD symptoms and general distress. Liverant

and colleagues (2004) used the same inventory of coping styles as Silver and colleagues

(2002), but found no relationship between seeking social support and terrorism-related

anxiety. In addition to the findings of these studies, two studies conducted after the

Oklahoma City bombing also found unimpressive relationships between social support

and adjustment. Tucker and colleagues (2000) tried to differentiate amongst social

support variables (talking with others, religion, work, keeping busy, counseling, exercise)

in light of the Oklahoma City bombing and came across some unpredictable responses.

They found that only two of these social support variables were associated with post-

traumatic stress symptoms, and that their relationships were in different directions.

Those who felt that counseling was helpful following the bombing were actually more

likely to report post-traumatic stress symptoms. While this was not what the authors

predicted, this can easily be attributed to the fact that the most disturbed people sought

counseling help. Conversely, those who found support in the workplace experienced less stress symptomatology. This relationship would be expected given the other findings (Galea et al., 2002; Schuster et al., 2001; Silver et al., 2002; Norris et al., 2002). Another study by Tucker and colleagues (2002), focusing exclusively on Oklahoma City bombing body handlers, found that there was no relationship between use of social support and PTSD symptoms. For the sample, PTSD symptoms were remarkably low – however, researchers were unable to relate this to participants' use of social support.

What can we learn from these contradictory results? First, we must realize that it is quite difficult to compare the results of these studies. Each had different definitions of social support. Some studies, such as ones by Galea and colleagues (2002) and Norris and colleagues (2002), looked at this construct as one's perception of his or her social support (through different dimensions). The others seemed to view this construct as actual efforts to reach out to others for support (Liverant et al., 2004; Silver, 2002; Tucker et al., 2002; North et al., 2002; Schuster et al., 2001; Tucker et al., 2000; Applewhite & Dickens, 1997). However, for this latter group, similarity in construct definition was the only commonality. Some studies used more qualitative interviews (Schuster et al., 2001; Applewhite & Dickens, 1997), whereas others relied on questionnaires (Liverant et al., 2004; Silver et al., 2002; Tucker et al., 2002; Tucker et al., 2000; North, Tivis, McMillin & Curtis, 2002). And, excluding the Liverant and Silver studies, no two studies used the same questionnaire to measure seeking social support. As a result, this lack of standardization makes it difficult to reach firm conclusions on the role of this construct.

Perceived Controllability

Perceived controllability refers to one's perception of control over a specific stressor. Because terrorism-related anxiety is a present worry over near future events, the author believes that perceived controllability should reflect this duality. Thus, perceived controllability also refers to one's perception that he or she can do things in the near future to control the stressor (e.g. skip riding the subway to minimize the chances of being in a terrorist attack).

Only one published study has directly studied the association of perceived controllability with terrorism-related anxiety. Powell and Self (2004) studied the relationship between personalized fear, personalized control and behavior change following 9/11. They defined personalized control as an individual's perception of control over a particular situation, which seems very compatible with the operationalization of perceived controllability for the current study. In their study, 400 Alabama residents completed a self-report questionnaire following 9/11. The authors did not find a relationship between personalized control and behavior change.

Certainly the lack of a relationship in the Powell and Self (2004) study is an important consideration in determining the appropriateness of studying perceived controllability. However, despite the lack of a relationship in their study, there is only limited generalizability to the current study. While their operationalization of personalized control matched that of perceived controllability in the current study, their assessment method varied greatly from the current one. Whereas the current study utilizes a 9-item Likert-based questionnaire to assess perceived controllability, Powell and Self only used a one-item, yes/no question to assess personalized control ("Do you

feel there is anything that you can do to avoid being a victim of a terrorism attack that might occur in the future?"). Furthermore, their criterion variable, behavior change, is very different from the construct of terrorism-related anxiety in the current study, as well as the other types of psychological adjustment to terrorism reviewed throughout this literature review. Behavior change was assessed through the following yes/no question: "Did you alter any of your scheduled activities on the days after September 11 because of the attacks?"   It is difficult to see how a person's answer to that question could be completely representative of his or her overall adjustment to 9/11. Powell and Self's (2004) measurement of behavior change seems to be an insufficient assessment of both the construct and of overall psychological adjustment to 9/11. Thus, it becomes very difficult to generalize their findings to the present study.

Other than Powell and Self's (2004) study, there is little information on the relationship between perceived controllability and psychological adjustment to terrorism. In an individual presentation in conjunction with an unpublished team project studying the September 11th attacks, Spiegel (2002) found a gender association for the relationship between perceived controllability and the handling of the terrorism-related anxiety. In a sample of 150 people, female participants reported handling the stress of the 9/11 attacks better when they acknowledged that they had little control over the events. This relationship was not present amongst the male participants (Spiegel, 2002). For the present study, where the stressor of terrorism is more long-term, chronic and ambiguous than 9/11, it would be interesting to see if those same findings were repeated.

While perceived controllability has not been explicitly studied in other terrorism research, it certainly has been implicitly referred to. As discussed in the "terrorism-

related anxiety" section in this review of literature, Gidron and colleagues (1999) made a compelling argument that one's perceived controllability over terrorism affects the adaptiveness of his or her coping strategies. These authors argued that in Israel, where terror attacks are a common occurrence, it is assumed by most that terrorist attacks are an uncontrollable stressor. Underscoring their argument was the fact that denial, often a maladaptive coping strategy, was found to be adaptive whereas problem-focused coping, often an adaptive coping strategy, was found to maladaptive. Gidron and colleagues (1999) supported these findings with theoretical assertions from coping scholars which postulated that denial can be adaptive in uncontrollable situations.

Thus, there is a need for more research on the role that perceived controllability plays in adjustment to terrorism-related anxiety. To begin with, there is almost no research on this area. Second, the timing is opportune for this type of research; as terrorism becomes more of a reality in this country, it would be useful to understand how this construct factors into Americans' lives.

Previous Trauma

Thus far, results are contradictory in explaining the influence of previous trauma on terrorism-related stress. For the September 11th attacks, three studies examined the relationship between previous trauma and adjustment to the September 11th attacks. Galea and colleagues (2001) measured the number of stressors that participants had experienced in the twelve months prior to September 11th. They found that having had two or more prior stressors was a predictor of both PTSD and depression following the 9/11 attacks. On the other hand, Silver and colleagues (2002) and Butler and colleagues (2003b) did not find a relationship between previous trauma experience and adjustment

following the September 11th terrorist attacks. Silver and colleagues (2002) computed the number of traumas experienced in childhood, adulthood, and the year prior to the attacks, and analyzed each as separate variables. None of these variables were mentioned by the authors as relating significantly to either post-traumatic stress symptoms or general distress. Similarly, Butler and colleagues (2003b) did not find a relationship between previous trauma experience and either criteria of resilience (well being and distress). They were surprised by this finding, and pointed out that the data analyzed for their presentation only represented a portion of their overall participant sample. The authors have reason to be surprised, as there generally tends to be a relationship between previous trauma experience and adjustment to current trauma. For example, Norris and colleagues (2002) found that secondary stressors predicted adverse outcomes in disaster survivors. While none of the aforementioned studies have looked at long-term terrorism-related anxiety, one might presume that victims of previous trauma would have more difficulty adjusting.

Denial

Of all the variables included in the present study, the existing findings on denial are among the most contradictory. For this reason, denial is also one of the most interesting variables being studied. Understanding the reasons behind this discrepancy could help inform future research on terrorism and other related stressors. Denial seems to be useful in situations where there is an ongoing threat of terrorism (Israel, Ireland) (Cairns & Wilson, 1989; Gidron et al., 1999) versus places where it is a relatively newfound phenomenon (US) (Liverant et al., 2004; Silver et al., 2002). Perhaps, as Gidron and colleagues (1999) infer, this is due to the controllability of the

stressor. When one perceives more control of his or her fate, maybe active coping and problem-focused coping are more useful. But perhaps when there is little one can do, it may be best to deny the significance of the stressor. These authors refer to other literature which suggests that denial is most useful when the stressor is uncontrollable and active coping is not helpful. Druss and Douglas (1988, as cited in Gidron et al., 1999) discuss the concept of 'healthy' denial, which they view as being a type of resilience that occurs when a person is under extraordinarily difficult and emotionally taxing situations. The major question that we must ask is whether this type of logic can be applied to Americans in general, and Washingtonians in particular, in dealing with terrorism in the year 2003. Is denial more healthy now – having faced the threat of terrorism for the past two years – as compared to when we first collectively experienced terrorism on September 11th? A potential answer to this question will be suggested in the hypotheses for the present study.

Before concluding, it is important to make a distinction between denial and disengagement. As defined in the introduction section of this paper, denial (or "distancing," as it is called in the Ways of Coping measure) refers to the purposeful minimization of the reality and existence of a stressor. Disengagement (or "escape/avoidance", as it is called in the Ways of Coping measure) is the engaging in mental and/or behavioral strategies to avoiding dealing with the stressor (Folkman & Lazarus, 1988; Carver, Scheier, & Weintraub, 1989). At first glance, these coping strategies might not seem that different from one another. But when one closely examines these two strategies, they seem quite distinct. With denial, it seems that the person acknowledges the presence of the stressor, but essentially ignores or minimizes it.

With avoidance, the person actively seeks to evade the stressor (Folkman & Lazarus, 1988; Carver et al., 1989). While research is mixed on the role of denial, it uniformly suggests that disengagement is maladaptive across stressors. Looking at terrorism research alone, this maladaptive relationship with adjustment is found in studies by Liverant and colleagues (2004), Butler and colleagues (2003b), Silver and colleagues (2002), and Sprang (2000).

Summary and Implications

This review of literature has served to document existing literature on the seven constructs that will be studied in the present study, highlight the relevance of their findings to the present study, and outline the areas where further understanding is necessary. From the literature, we see that resilience has an individual influence on trauma stress in general, and terrorism-stress in particular, that is fairly established. More debatable, however, are the relationships of spirituality, social support, previous trauma, denial and perceived controllability with terrorism-stress. Findings on these variables have been contradictory. Furthermore, because of the minimal amount of existing research on terrorism, we have little idea of how all of these constructs operate together in influencing psychological adjustment with regard to terrorism. Finally, we see that the majority of research has focused on responses to past terrorist events, rather than anxiety about future events. Of the studies reviewed, only those by Liverant and colleagues (2004), Silver and colleagues (2002), Sprang (2000), and Gidron and colleagues (1999) deal with anxiety about future terrorist attacks.

Thus, in the 'Statement of the Problem and Hypotheses' section that follows, the author seeks to illustrate how these six predictor variables (spirituality, resilience,

perceived social support, perceived controllability, previous trauma, denial) might operate together in influencing terrorism-anxiety. Furthermore, interaction hypotheses are generated that attempt to explain the contradictory findings on the relationships between denial and terrorism-related anxiety, and previous trauma and terrorism-related anxiety. Together, these hypotheses seek to provide meaning for how individuals deal with their fears of terrorism in a post-9/11 America.

Chapter 3: Statement of the Problem and Hypotheses

The purpose of the present investigation is to study the relationships of six predictor variables — resilience, spirituality, perceived social support, perceived controllability, denial, and previous trauma — to terrorism-related anxiety. The present study is unique in that it seeks to understand how Americans live their daily lives amidst the potential threat of terrorist attack. Existing U.S. research has studied Americans' reactions and adjustment only in the months immediately following a terrorist attack (September 11th and Oklahoma City) (Liverant et al., 2004; Wadswoth et al., 2004; Stein et al., 2004; Delisi et al., 2003; Schuster et al., 2001; Schlenger et al., 2002; Silver et al., 2002; Galea et al., 2002; Sprang, 2000; Butler et al., 2003b). In addition, the choice of variables and predictions makes the current study one of the first confirmatory studies of its kind. Finally, the present author posits two proposed interaction effects. The author believes that spirituality will interact with previous trauma in predicting terrorism-related anxiety. In addition, it is anticipated that perceived controllability will interact with denial in predicting terrorism-related anxiety. No previous other study was found to have made these predictions, nor examined these types of relationships.

Before presenting the individual hypotheses, each construct will be defined and operationalized. For the present study, resilience is defined as the ability of an individual to cope better during times of misfortune and recover more quickly after them than other individuals (Block & Kremen, 1996; Butler, 2003a; Rutter, 1987). Spirituality is seen as one's belief in a benevolent god or higher power that effects one's emotions, cognitions, motivation, and ability to transcend difficulties. This construct is not defined by one's religious practice or observance (Seidlitz, Abernethy, & Duberstein, 2002). Perceived

controllability is defined by the author as one's feeling of personal agency over his or her risk of being in a terrorist attack. Perceived social support is defined as the amount of emotional support an individual feels that he or she has from others in his or her life, such as family, friends, colleagues, and community. Denial is defined as one's attempts to minimize the significance of terrorism to his or her life. Previous trauma is defined as an earlier traumatic experience involving death, injury, or a threat to one's mortality. The previous trauma could involve either the individual or a loved one. It could include a traumatic experience related to terrorism, or another unrelated type of trauma. Finally, terrorism-related anxiety, the dependent variable, is defined as the stress created by fearing that terrorism will threaten one's life or that of a loved one.

Six main effects and two interaction effects are predicted for the present study. They are as follows:

Hypothesis 1: Resilience will be negatively associated with terrorism-related anxiety. Resilience has been shown to be a protective mechanism from both stress in general (Rutter, 1987; Block & Kremen, 1996; Norris et al., 2002) and stress emanating from a terrorist attack (Fredrickson et al., 2003). It is expected that resilience will also protect people from the anxiety associated with the more ambiguous threat of additional terrorism. Thus, more resilient people are expected to have less terrorism-related anxiety.

Hypothesis 2: Spirituality will be negatively associated with terrorism-related anxiety. Belief in god has been linked with adaptive coping and improved health outcomes (Worthington et al., 1996; Hill & Pargament, 2003). In addition, certain studies have shown the usage of spirituality or components of it as a response to terrorism or terrorism cues (Briggs et al., 2004; Peterson & Seligman, 2004). The

conceptualization of spirituality for the present study has yet to be tested in relation to stress. It is developed from the author's vision of spirituality, and is best reflected in a recently created measure (Seidlitz et al., 2002). Thus, it is unknown if spirituality will be related to stress in general (not measured here), or terrorism-related anxiety specifically. However, since other conceptualizations of spirituality have been related to psychological adjustment, the above prediction is warranted.

Hypothesis 3: Perceived social support will be negatively associated with terrorism-related anxiety. Social support has been consistently found to be a buffer of both general and terrorism-related stress (Galea et al., 2002; Schuster et al., 2001; Norris et al., 2002). On the other hand, it has also been tied to higher terrorism-related stress in some studies (Silver et al., 2002; Tucker et al., 2000: Tucker et al., 2002). This contradiction could potentially be explained by the operationalization of the construct. It seems that when social support or the perception of social support is measured, the construct is adaptive (Galea et al., 2002). However, when the *seeking* of social support is measured, it is associated with higher terrorism-stress (Silver et al., 2002). Because the present study will be measuring perceived social support, it is expected to have a negative association with the criterion variable. Unclear, however, is whether social support is a useful mechanism for minimizing future-based fears, as with the construct of terrorism-related anxiety. Based on past research findings, it is tentatively proposed that the same type of relationship will exist with terrorism-related anxiety. Thus, individuals who perceive that they have more social support will experience less terrorism-related anxiety.

Hypothesis 4: Spirituality will interact with previous trauma in predicting terrorism-related anxiety. For those who are high in spirituality, higher amounts of

trauma will be associated with less terrorism anxiety, whereas for those who are low in

spirituality, higher amounts of trauma will be associated with more terrorism anxiety.

While there is no research to support this assertion directly, the author believes that

spirituality will moderate the relationship between previous trauma and terrorism-related

anxiety. This hypothesis is borne from the contradictory findings concerning the

relationship between previous trauma and terrorism-related stress. In reflecting on

potential explanations for this inconsistency, perhaps variances in spiritual beliefs could

help explain the difference in anxiety reactions amongst trauma survivors. People often

associate traumatic experiences with the shattering of illusions of immortality. As such,

trauma victims are often more vulnerable to fears about their safety. However, a trauma

victim who either already has a strong spiritual foundation or gains one as a result of the

experience could be more fortified against future anxiety. Thus, his or her spiritual

beliefs could provide him or her with a sense of internal peace that is comforting in times

of insecurity. As a result, terrorism-related anxiety would be more minimized in this

individual. The present study seeks to test this conceptualization by proposing it as an

interaction hypothesis.

Hypothesis 5: Perceived controllability will interact with denial in predicting

terrorism-related anxiety. Those who perceive less control over their chances of being

involved in a terrorist attack will adaptively use denial, decreasing their terrorism-

related anxiety. Increased use of denial in this situation will be related to decreased

terrorism-related anxiety. On the other hand, those who perceive more control over their

chances of being involved in a terrorist attack will maladaptively use denial, increasing

their terrorism-related anxiety. Increased use of denial in this situation will be related to

increased terrorism-related anxiety. This hypothesis is based on the interesting contrast that has emerged between U.S. September 11th studies (Silver, 2002) and foreign terrorism studies (Cairns & Wilson, 1989; Gidron et al., 1999) regarding denial. In the U.S., denial seems positively related to terrorism-anxiety. In Ireland and Israel, denial seems negatively related to terrorism-anxiety. What is accounting for this difference? While no study has directly examined the role of perceived controllability in accounting for this discrepancy in the relationship between denial and terrorism-anxiety, Cairns and Wilson (1989) and Gidron and colleagues (1999) have both surmised that this variable is involved. Gidron and colleagues (1999) concluded that when a stressor is uncontrollable (in this case, they assumed that bus terror attacks fall into this category), denial is actually very adaptive. Folkman and Lazarus (1988) wrote that individuals use denial (they call this 'distancing') more in situations they view as having to be accepted. These articles suggest that one's perception of his or her controllability over being involved in a terrorist attack – whether he or she believes that he or she can take steps to lessen this risk – may determine whether his or her use of denial as a coping tactic is helpful in reducing his or her terrorism-anxiety. Thus, if one perceives that he or she has control over the likelihood of being involved in a terrorist attack, denial may not be a useful tactic in reducing his or her terrorism-anxiety. Conversely, if one perceives that he or she has little control over the likelihood of being involved in a terrorist attack, denial may be a more useful strategy in lessening terrorism-anxiety. For example, perhaps one commutes to work every day using the subway, a mode of transportation that has often been linked to terrorism threats. This individual also believes that he or she really has no control over whether a terrorist attack will occur in a subway in general, and his or her train in

particular. As a result, he or she uses strategies to minimize his or her worry about this likelihood. Thus, he or she does things on the subway to help him or her not think about this likelihood (denial), such as listening to music or reading newspaper. On the other hand, another individual must also commute to work. Unlike the first person, he or she feels a relatively high level of control over his or her risk of being in a terrorist attack. Specifically, he or she feels that he or she can do things to minimize this risk, such as riding the metro at off-peak hours or driving to work. In this instance of high perceived controllability, a problem-solving approach is more adaptive to this individual than the use of denial.

Research Question 1: Which variables - resilience, spirituality, perceived social support, previous trauma, perceived controllability, or denial – will uniquely predict terrorism-related anxiety above and beyond the other variables? This research question is a reflection of the state of the research on terrorism as it stands today. We know enough about the aftermath of terrorism to tentatively indicate that resilience is negatively related to terrorism-stress (Frederickson et al., 2003; Butler et al., 2003b); and that perceived social support is negatively related to terrorism-stress (Galea et al., 2002; Tucker et al., 2000; Tucker et al., 2002; North et al., 2002; Applewhite & Dickens, 1997). In addition, we can also tentatively conclude that spirituality has a negative relationship with general stress (Worthington et al., 1996; Hill & Pargament, 2003). Perhaps this relationship might apply with terrorism-related stress as well. Finally, we know that there are some contradictory findings about the relationships of previous trauma, perceived controllability, and denial with terrorism-related stress (Powell & Self, 2004; Liverant et al., 2004; Silver et al., 2002; Butler et al., 2003b; Gidron et al., 1999; Cairns

& Wilson, 1989). However, even in the case of this latter group of constructs, we have found relationships (although the directionality has been disputed) between these variables and terrorism-related stress. Thus, we can make somewhat of a tentative argument for their relationship with psychological responses to terrorism. Yet, two major questions remain. First, would all of the aforementioned relationships exist with a more future-based stressor, such as terrorism-related anxiety? At this stage, we simply do not know the answer; hence, a major reason for the present study. Second, and most relevant here, how do these predictors compare to one another in terms of uniquely predicting the criterion? What are the most important predictors of terrorism-related anxiety? These constructs have never all been studied together. It is for the sake of addressing these inquiries that the research question is posed.

<u>Demographic Variables</u>

Previous research (Butler et al., 2003b; Silver et al., 2002; Galea et al., 2002; Schuster et al., 2001) has demonstrated the important role that demographic variables such as gender, socioeconomic status, level of education, and amount of television viewing can play in influencing terrorism stress. Because these demographic variables are not of primary interest, they are not included in the hypotheses. However, all of these variables are measured through the use of a demographic form. Correlations will be run between these demographic variables and terrorism-related anxiety.

Chapter 4: Method

Design

The present study used a correlational design in order to examine the relationship at one point in time between six predictor variables (spirituality, resilience, perceived controllability, perceived social support, denial and previous trauma) and one criterion variable (terrorism-related anxiety). In addition, the present study looked at the potential moderating relationships of perceived controllability on the association between denial and the criterion variable; and of spirituality on the association between previous trauma and the criterion variable.

Participants

This sample was composed of 154 subjects (93 female, 60 male; one subject did not provide any demographic information). A post-hoc power analysis estimated that approximately 134 subjects were necessary in order to have a .80 probability of rejecting the null hypothesis for a medium effect size. Thus, the conditions for appropriate power were met. Subjects were recruited via e-mail. More detailed information on how subjects were selected and contacted is available in the "Procedures" section of this chapter. All subjects were directed in the e-mail to a secure internet site where they filled out a questionnaire containing all of the measures for the present study. Participants were required to live and/or work in Washington, D.C. or an adjoining suburb in Maryland or Virginia. The mean age of the participants was 34 years old.

Looking at the race of the participants, 128 (83.1%) were Caucasian, seven (4.5%) were African-American, six (3.9%) were Hispanic, five (3.2%) were Asian-American, one was Native-American (0.6%), and six listed themselves as "other" (3.9%).

One hundred forty-two (92.2%) of the participants listed their sexual preference as heterosexual; eight (5.2%) homosexual, and three (1.9%) as bisexual. This was a highly educated sample, most likely making it unrepresentative of the general Washington, D.C. area population for this demographic category. Of all the participants, only one (0.7%) did not have a high school or equivalent degree. Three (2.0%) listed a high school/GED degree as their highest level of education completed, and four (2.6%) listed a two-year college degree as their highest level of education completed. Thus, 145 of the 153 participants (excluding the one participant who did not list demographic information) had a college degree or higher. Of this large group, 68 participants (44.4%) had earned a bachelor's degree, while 77 (50.3%) had earned some type of graduate degree.

While the sample was relatively homogenous for these three demographic categories (race, sexual preference, and education), it was fairly diverse in most other areas, indicating the moderate external validity of the sample as a representation of the Washington, D.C. area community. Examples of this sample diversity include income, religion, marital status, and locations of residence and employment. In the income category, nine subjects (5.9%) stated their household income as under $20,000 a year; 31 (20.1%) fell between $20,000 and $40,000 a year; 31 (20.1%) fell between $40,000 and $60,000 a year; 16 (10.5%) between $60,000 and $80,000 a year; 18 (11.8%) between $80,000 and $100,000 a year; 12 (7.8%) fell between $100,000 and $150,000 a year; 15 (9.8%) fell between $150,000 and $200,000 a year; eight (5.2%) fell between $200,000 and $250,000 a year; four (2.6%) fell between $250,000 and $300,000 a year; three (2.0%) fell between $300,000 and $400,000 a year; two (1.3%) fell between $400,000 and $500,000 a year; and four (2.6%) stated their household income as above $500,000 a

year. In the marital status category, 84 participants (54.5%) were single, 65 (42.5%) were married, and four (2.6%) were divorced. In the religion category, 67 participants (43.8%) were Christian, 59 (38.6%) were Jewish, two (1.3%) were Muslim, one (.7%) was Buddhist, and 24 (15.7%) listed their religion as "other".   The high number of participants in the "other" category indicates that the author should have allowed for a greater range of responses in his assessment of religion. This group of participants could belong to an alternate religious group not listed (e.g. Mormon), could practice independent spirituality, or be atheist or agnostic. Locations of residence and employment were varied as well. Of the participants, 82 (53.6%) lived in the Maryland suburbs, 37 (24.2%) lived in Washington, DC, and 34 (22.2%) lived in the Virginia suburbs. Seventy (45.8%) worked in the Maryland suburbs, 64 (41.8%) worked in Washington, D.C., and 19 (12.4%) worked in the Virginia suburbs.

In addition to the aforementioned demographic categories, the author also assessed areas with particular relevance to terrorism, such as media exposure and relationships with victims of 9/11 and the sniper attacks. The vast majority of the sample was not close with anyone who perished or was injured on September 11th or in the sniper attacks of 2002. One hundred forty-four (94.1%) individuals were not close with anyone who perished or was injured in 9/11; nine (5.9%) individuals were close with someone who perished or was injured in 9/11.   Furthermore, 152 of the 153 participants (99.3%) were not close with anyone who perished or was injured in the sniper attacks. This latter number might be expected, as 10 people perished and two were injured in the sniper attacks, a much smaller number than for 9/11.

Other studies have indicated the role that media exposure can play in traumatic reactions to terrorism. Thus, while only a small number of participants directly knew victims of domestic terrorism, others could have still been psychologically affected. For this reason, media exposure was assessed and correlated with the terrorism-related anxiety. Findings indicated that large groups of participants fell on both extremes of the spectrum of media exposure. For example, roughly one third of the sample - 47 individuals (30.7%) – reported that they read 0 newspapers per day. However, 23 individuals (15%) read more than 1 newspaper per day. Slightly over half (54.2%) of the sample read 1 newspaper per day. This discrepancy applied for internet news exposure as well. A moderate-sized group of individuals – 24 (15.6%) – reported that they viewed 0 internet news sites per day, while an even larger group of 40 individuals (26%) reported that they viewed 4 or more internet sites per day. The rest of the sample fell between these two extremes. However, participants tended towards less television and radio exposure. Large groups of individuals reported watching or listening to small amounts of TV and radio news programming. Sixty-seven individuals (43.8%) reported that they watched under 30 minutes of news per day on television; 92 individuals (60.1%) reported that they listened to under 30 minutes of news per day on the radio. Most relevant to the present study was the fact that none of the media exposure variables (newspaper, internet, television, radio) correlated significantly with either measure of terrorism-related anxiety.

Measures

Denial. Denial was assessed using the 'distancing' scale of the Ways of Coping Questionnaire (Folkman & Lazarus, 1988) (Appendix A). This measure was chosen for

several reasons. First, the authors' concept of distancing seemed to be most analogous

(in comparison to other denial measures) to the definition of denial for the present study.

Folkman and Lazarus (1988) define distancing as cognitive efforts on the part of the

individual to detach him or herself and to minimize the significance of the situation. For

the present study, denial has been defined as one's attempts – conscious or unconscious -

to minimize the significance of terrorism to his or her life. Both definitions involve

minimizing strategies on the part of the individual, and both definitions are situation-

specific. The latter is relevant because the author of the present study is interested in

denial of a situation-specific stressor (terrorism), as opposed to denial as a general coping

strategy across stressors. It should be noted that the 'Ways of Coping' measures coping

responses to situation-specific stressors. Thus, the distancing subscale used in the present

study does not measure distancing as a dispositional coping style. Rather, it looks at an

individual's response to a particularly stressful situation. This situation and response

might be representative of other instances of terrorism-related anxiety; however, it does

not have to be.

The 'distancing' scale of the Ways of Coping Questionnaire is a 6 item Likert-

based measure. The questionnaire (all scales) asks individuals to think of a specific

stressful situation that occurred to them in the past week before they begin answering the

questions. Keeping that situation in mind, they are asked to indicate their level of

agreement with the items. A sample item from the 'distancing' scale is "I went on as if

nothing had happened." Folkman and Lazarus found that the 'distancing' scale had a

Cronbach's alpha of .61, indicating adequate reliability. While not particularly high, this

reliability figure is slightly higher than the figures of other scales measuring the same

construct (Folkman & Lazarus, 1988).   According to Folkman and Lazarus (1988), the Ways of Coping Questionnaire has evidence of face validity in that its coping constructs (subscales) are reflected in individuals' descriptions of strategies used to cope with stressful situations. They also provide evidence of convergent and divergent validity through correlations between the WOC and other variables, such as optimism (Folkman & Lazarus, 1988).

In order to make this scale appropriate for the present study, several changes had to be made to the instructions prior to the items. First, the scale needed to be able to distinguish between denial of terrorism (as a coping strategy) and the genuine belief (of some individuals) that the risk of terrorism is minimal. In order to appropriately measure coping rather than belief, the author sought to make terrorism feel more personal and less abstract to the participant. As a result, subjects were asked in the instructions to think of a moment when the topic of terrorism had crossed their minds. Even the most cynical of individuals can probably think of a time when he or she was forced to think about the subject of terrorism on some type of personal level. For example, several months prior to the start of the study (December, 2003 – January 2004), several flights to Washington were either cancelled or escorted to the airport by fighter jets because of specific terrorism concerns. In this example, even Washingtonians who might believe that there is virtually no risk of terrorism had an objective event impact them in some type of personal way – even if they decided to keep living their lives as normal. Thus, by asking subjects to remember an individual event associated with terrorism, it is much more likely that the construct of denial (as a coping strategy) will not be confounded with beliefs about terrorism.

In addition to changing the instructions to be more specific to terrorism, the

timing instructions were adjusted as well. In the original instructions of the 'distancing'

scale, subjects are asked to recall a specific stressful event that occurred in the last week

(Folkman & Lazarus, 1988). However, since events associated with terrorism (warnings,

attacks) occur less frequently, the author of the present study was concerned that subjects

would not be able to think of events in the last week. Furthermore, there was a concern

that responses accurately reflect distancing, as opposed to individual differences in the

actual severity of the particular stressful situation. For example, an individual might have

experienced no conspicuously stressful terrorism-related situation in the last week, but

had a very stressful terrorism-related situation occur several weeks earlier. That

individual's responses would look quite different based on the week he or she was

thinking of. By allowing participants to have more latitude in the time frame they could

consider, the hope was that each respondent would be able to find an event representative

of their experience of terrorism. Despite this key difference, the author wanted to

remain as close as possible to the original format of the measure in order to maintain its

validity. As a result, he left intact the instruction asking subjects to think of an event in

the last week. However, a sentence was included that gave subjects permission to think

beyond a week if they were having trouble thinking of a stressful terrorism-related event.

For the present study, the 'distancing' scale received a Cronbach's alpha of .63,

indicating adequate reliability. This figure was consistent with the .61 figure provided by

Folkman and Lazarus (1988).

Spirituality. Spirituality was assessed using the Spiritual Transcedence Index

(STI; Seidlitz et al., 2002) (Appendix B). The scale focuses on perceived psychological

effects of one's spirituality. It has God and Spiritual subscales that assess affective, cognitive, motivational and transcendent domains. For the purposes of the present study, only the total score was analyzed. The reason for this is that the present author is not concerned with one's distinction between God and a higher power (as reflected in the subscales). Seidlitz and colleagues (2002) write that items from both subscales are highly correlated and load onto one factor. As a result, there is no need to distinguish between subscales. This assertion was confirmed in the present study, as the god and higher power subscales had a .87 correlation.

The STI has 8 items; it has demonstrated high internal consistency, with alphas ranging from .90 to .97 in two samples. It has been shown to have both convergent validity with and discriminant validity from related constructs. Responses are given on a 6-point Likert-type scale which ranges from 1 (strongly disagree) to 6 (strongly agree). A sample item from the STI is "my spirituality gives me a feeling of fulfillment." In the present study, the STI demonstrated high reliability, with a Cronbach's alpha of .97.

Perceived Social Support. This construct was measured using The Social Provisions Scale (SPS; Cutrona & Russell, 1987) (Appendix C). The SPS has 24 items, and responses are given on a 4-point Likert type scale which ranges from 1 (strongly disagree) to 4 (strongly agree). The SPS consists of six subscales (4 items each) measuring different relational components of social support (guidance, reliable alliance, reassurance of worth, social integration, attachment, and opportunity to provide nurturance). Only the total score seems relevant to the focus of the present study; as such the subscale scores were not analyzed. Cutrona and Russell's (1987) measure has been shown to have strong internal consistency and validity. The authors cite a total support

score reliability of .92, with reliabilities of the 4-item subscales ranging from .76 to .84 (Cutrona & Russell, 1987). The discriminant validity of the scale has been established against assessments of mood (e. g., depression), personality (e. g., introversion-extraversion, neuroticism), and social desirability (Cutrona & Russell, 1987). Cutrona and Russell (1987) also found that high problem-focused coping was efficacious in controllable situations, and that self-denigration had more negative effects in controllable versus uncontrollable situations. A sample item is "There are other people I can depend on to help me if I really need it." For the present study, the SPS had high reliability, with a Cronbach's alpha of .90.

Resilience. The Personal Resilience Beliefs Scale (PRBS; Holmes, 2001) (Appendix D) measures individual levels of resilience to traumatic and stressful events. This self-report instrument has 30 items and uses a four point Likert-type scale which ranges from 1 (strongly disagree) to 4 (strongly agree). The PRBS has four factors: positivity/empowerment, spiritual support, powerlessness, and mattering. Together, these four factors measure how strongly an individual feels a sense of positive empowerment, the degree to which spirituality is utilized as a support during stressful events, and how much one perceives that he or she matters to others. The alphas are as follows: positive empowerment (.90), spiritual support (.94), powerlessness (.78), and mattering (.72). The overall internal consistency of the scale is strong, at .90. In addition, concurrent validity for the measure is evident by the significant correlations between the PRBS and other variables such as distress as measured by the BSI (-.45), optimism as measured by the LOT (.65), social support as measured by SPS (.62), and subjective well-being as measured by the PANAS and SWLS (.52) (Holmes, 2001).

Because of the high overlap between the spiritual support factor of the PRBS and the STI measure (spirituality), the two measures had a high correlation of .72 for the present study. This high correlation raised the concern of multicollinearity between spirituality and resilience. According to Morrow-Howell (1994), the most frequently cited guideline of multicollinearity is a correlation of .80 between two independent variables. Because the .72 correlation approaches the .80 guideline, the PRBS was analyzed without the spiritual support factor. The 3-factor version of the PRBS without spiritual support had a much more moderate correlation of .21 (p<.01) with the STI. It should be noted that removing the spiritual support factor had no bearing on the significance of the bivariate correlations between the PRBS and terrorism-related anxiety (see 'results' chapter). Reliability for the PRBS was high; the measure had a .91 alpha regardless of whether the spiritual support items were included or not.

Perceived controllability. Perceived controllability over terrorism was assessed using a 9-item measure developed by Conway and Terry (1992) (Appendix E). The measure assesses various aspects of a person's perception of control over a specific situation. Items are rated on a 5-point Likert type scale ranging from 1 (Not at all) to 5 (Very much). The scale has been shown to have moderate to high reliability (Conway & Terry, 1992). The measure also has some degree of concurrent validity, positively correlating with anger (Spiegel, 2002) and negatively correlating with escapism (Conway & Terry, 1992). A sample item is "How much do you feel that the outcome of the situation is beyond your control?" For this scale, participants were told to think about the impact of terrorism on their lives when answering the items. In addition, several items

were modified from past to future tense for the purposes of the present study. In the

present study, the measure showed strong reliability, with a Cronbach's alpha of .90.

Previous Trauma. Previous trauma was assessed through two items written by

the author (Appendix F). The first item asked whether the individual had experienced

previous trauma: "I have been personally involved in a traumatic incident which caused

me physical and/or psychological harm." The second item asked whether the individual

had experienced any previous traumatic exposure as a result of a terrorist attack: "I have

been personally involved in a terrorist attack which caused me physical and/or

psychological harm."   Both items were scored quantitatively in a 'yes/no' format (no =

0, yes = 1). In the event that the individual answered 'yes' to either item, he or she was

asked to rate the severity of the trauma on a scale of 1-10 (lowest to highest). Each

subject was rated for previous trauma based on the 1-10 score (with 'no's from the

'yes/no' questions receiving a 0). Subjects were also given an opportunity to describe the

trauma. While the item assessing previous terrorism trauma (and its severity) was not

used in measuring the 'previous trauma' construct, it was included in the bivariate

correlations.

Terrorism-related anxiety. This construct was assessed utilizing the state anxiety

subscale of the State-Trait Anxiety Inventory (STAI) (Spielberger, Gorsuch, & Lushene,

1970) (Appendix G) and the anxiety thermometer (Houtman & Bakker, 1989). The state

anxiety subscale of the STAI has 20 Likert-type items rated from 1 (not at all) to 4 (very

much so). The STAI-S has been shown to have demonstrable reliability and validity.

The subscale is designed to assess situation-specific anxiety (in this case terrorism). It is

useful in that it clearly delineates anxiety from other related affective responses, such as

depression. Feelings of apprehension, tension, nervousness, and worry are measured by this subscale. In the instructions prior to the items, participants were asked to answer the items based upon their current concern of becoming the victim of a terrorist attack ("How worried do you feel right now about possibly becoming a victim of a terrorist attack in the future?"). They then read and endorsed each of the twenty items using the aforementioned instructions. The STAI-S displayed strong reliability in the current study, with a Cronbach's alpha of .94.

The anxiety thermometer is a one item, Likert-type measure which asks participants to rate their anxiety on a scale of one ("not at all anxious") to ten ("extremely anxious"). The referent time period varies by study. The anxiety thermometer has high convergent validity with an established measure of anxiety, the STAI-S. In a series of experiments, the anxiety thermometer had correlation coefficients of .63 to .77 with the STAI-S. Test-retest reliability coefficients for the anxiety thermometer ranged from .58 to .70, indicating fair reliability (Houtman & Bakker, 1989). In the present study, the item asks, "On a daily basis, how much do you worry about terrorism affecting your life or those of your loved ones?" Because the question in the present study refers to worry, the scale markers were changed to "not at all worried" (one) and "extremely worried" (ten).

Demographic Form. This form assessed all information relevant to the present study (Appendix I). General demographic variables such as age, gender, race, ethnicity, nationality, socioeconomic status, and attachment style (Relationship Questionnaire; Bartholomew and Horowitz, 1991) were assessed. In addition, demographic variables were measured that might be relevant to the issue-at-hand. Examples included one's

residence (NW, NE, SW, SE Washington, DC, MD suburbs, VA suburbs), where one works (government vs. private sector), and amount of media exposure (hours of TV, internet, and newspaper per day).

Procedure

The author created a secure website which contained the questionnaire packet. In the first stage of recruitment, the author enlisted friends and colleagues to refer e-mail addresses of potential participants. A total of 103 friends and colleagues received formal e-mails asking them to each refer 5-10 (or more) e-mail addresses of individuals that would be interested in completing a brief internet study. In addition, they were asked, if possible, to refer individuals that were diverse in their demographic backgrounds. Because the e-mail recipients did not know the topic of the study, they were unlikely to refer participants that might be partial towards the topic of terrorism, thus maintaining the external validity of the study. In addition, the friends and colleagues initially e-mailed were ineligible to participate, also enhancing the external validity. Individuals from this initial group who did not respond received two bi-weekly reminders. As the author received responses from this initial group, he began to compile a grand list of referral e-mail addresses. Friends and colleagues were instructed not to forward their e-mails to potential participants, so that the author would be able to maintain full autonomy over contacting potential participants. Three hundred forty-five e-mail addresses of potential participants were collected and contacted by the author over a six-week period. Several friends and colleagues asked the author for permission to contact people they had in mind as potential participants prior to the author doing so. They felt uncomfortable with giving out their friends' e-mail addresses without first asking them directly. The author

consented to this request, but asked that he be apprised of the number of people that

declined receipt of a recruitment e-mail from the author. He also adhered to the

conditions of the study by not giving them any additional information about the nature of

the research. According to these friends and colleagues, 32 additional people contacted

directly by them declined interest in participating. Thus, a total of 377 individuals were

asked to participate in the present study, from which 154 people participated (return rate

of 41%). While the 377 figure is not an exact estimate (some people could have ignored

the instructions and forwarded the message), it is the best possible approximation given

the constraints of internet research. Potential explanations for the 41% return rate are

reviewed in the 'discussion' section.

In the recruitment phase, potential participants were sent a recruitment e-mail

asking them to participate in the study. In the first line of the e-mail, potential

participants were told that they had been referred by a friend, colleague or family

member – with that individual's name in parentheses – as someone potentially interested

in participating in a research study. The e-mail contained a general description of the

study and its affiliated institution, and a statement ensuring the anonymity and

confidentiality of the participants and their responses. In addition, participants were

apprised of the short amount of time necessary to complete the questionnaire

(approximately 20 minutes), and the existence of one $100 cash prize to be raffled off

amongst those who completed the questionnaire. At the end of the e-mail, participants

were provided with a link to the study website, and a password to access the

questionnaire. For the complete text of both e-mails (referral and recruitment messages),

please see Appendix J. Follow-up bi-weekly reminder e-mails were sent 2 times over the course of a month to potential participants.

In reviewing this method, clearly there are limitations to internal and external validity when utilizing a convenience sample. However, the strategy used in the current study ensured a partial randomization of the sample. It also allowed the author to track the response rate for individuals recruited to participate in the study.

Upon accessing the study website, participants were given the option of entering their e-mail address for the purpose of linking incomplete questionnaires and entering the raffle (they were assured that e-mail addresses were not linked to data), or leaving this box blank. All participants were also required to enter the password provided in the e-mail in order to access the website. Following this initial website page, participants read an informed consent page, after which they were given the option of agreeing or declining to participate in the study. Those who agreed were directed to the beginning of the questionnaire. Participants then completed the questionnaire items assessing the predictor and criterion variables. Following these items, participants also completed a demographic form assessing their backgrounds. Some of these demographic items dealt with terrorism; for this reason, this section was at the end of the questionnaire as opposed to the beginning. At the end of the demographic section, participants had the option of completing an open-ended item. This qualitative item asked them to describe what has been helpful in minimizing their worries about terrorism. Upon completion of the questionnaire, participants were directed to a final web page which thanked them for their participation and debriefed them about the full nature of the study.

Initially, the author planned to create a code to measure the 'objective' reality of the terrorism threat level for each day that participants completed the questionnaire. This code was to be an aggregate score based on (1) the Office of Homeland Security threat level and (2) front-page newspaper coverage of domestic terrorism for that particular day. This code would be designed to capture fluctuations in the threat of terrorism (objective reality) for each day that the questionnaire was completed. Use of this system would have enabled the author to covary results with the terrorism threat level at the time every questionnaire was completed. However, this plan was discarded because (1) the threat level remained constant (at "yellow") during the entire duration of the study and (2) there were zero front-page newspaper articles on domestic terrorism during the five weeks the study was administered. While there was coverage of the war in Iraq, international terrorist incidents, and the proceedings of the 9/11 commission, there were no stories about potential domestic terrorist threats. As a result, the code remained constant throughout the whole study, rendering it meaningless.

Chapter 5: Results

In measuring the relationships of the constructs, bivariate correlations and four

hierarchical regressions were used (for the two measures of the criterion). For the

hierarchical regressions, the main effects of the predictors were assessed simultaneously

in 'Block 1', followed by the individual interaction effects (e.g. spirituality and trauma,

or perceived controllability and denial) in 'Block 2'. In the section below, the data from

these analyses is used to discuss the merits of each hypothesis. A grid of bivariate

correlations amongst the hypothesized variables (Table 1) and summaries of each

hierarchical regression (Tables 2-5) are included on pages 74-78.

Hypotheses

Hypothesis 1: Resilience will be negatively associated with terrorism-related

anxiety. As may be seen in Table 1 (page 74), resilience had a significant negative

bivariate correlation of -.32 (p<.01) with the STAI-S measure of terrorism-related anxiety

[note: this figure was -.20 (p=.01) with the full version of the PRBS that included the

spiritual support factor]. On the other hand, it had a non-significant relationship with the

anxiety thermometer measure of the criterion. However, resilience displayed significant

negative relationships with both the STAI-S (β = -.42, p<.01) and the anxiety

thermometer (β = -.29, p = .01) in respective simultaneous regressions with each measure

(Tables 2 & 3). Thus, we see moderate support for a negative relationship between

resilience and terrorism-related anxiety, confirming the hypothesis.

Hypothesis 2: Spirituality will be negatively associated with terrorism-related

anxiety. Spirituality did not have significant bivariate correlations or regression

Table 1

Means, Standard Deviations, and Bivariate Pearson Product-Moment Correlations

Variable	Mean	SD	1	2	3	4	5	6	7	8
1. Denial	2.00	0.51	---	-.09	-.01	.03	-.03	.00	-.13	-.15
2. Spirituality	3.86	1.46	-.09	---	.21 **	.12	.12	.15	.03	.12
3. Resilience	3.31	0.33	-.01	.21 **	---	.56 **	.26 **	.13	-.32 **	-.15
4. Perceived Social Support	3.58	0.32	.03	.12	.56 **	---	.06	.13	-.07	.02
5. Perceived Controllability	2.19	0.77	-.03	.12	.26 **	.06	---	.11	-.12	.01
6. Previous Trauma (severity)	1.91	3.27	.00	.15	.13	.13	.11	---	.03	.03
7. Terrorism-Anxiety (STAI-S measure)	1.86	0.53	-.13	.03	-.32 **	-.07	-.12	.03	---	.59 **
8. Terrorism-Anxiety (anxiety thermometer)	3.62	2.12	-.15	.12	-.15	.02	.01	.03	.59 **	---

*p< .05 **p< .01

Table 2

Hierarchical Multiple Regression Analysis Testing Hypothesized Predictor and

Spirituality – Previous Trauma Moderating Effects on Terrorism-Related Anxiety

(STAI-S measure)

Predictor Variables	R	R²	Adj. R²	Δ R²	F	Δ F	β
Step 1	.39	.15	.12	.15	4.32**	4.32**	
Denial							-.13
Spirituality							.09
Perceived Social Support							.15
Perceived Controllability							-.04
Resilience							-.42**
Previous Trauma							.06
Step 2	.43	.18	.15	.03	4.70**	6.08*	
Spirituality X Pr. Trauma							-.20*

Note: N=154   *p <.05   **p<.01   Δ = change in

Table 3

Hierarchical Multiple Regression Analysis Testing Hypothesized Predictor and

Spirituality – Previous Trauma Moderating Effects on Terrorism-Related Anxiety

(anxiety thermometer measure)

Predictor Variables	R	R²	Adj. R²	Δ R²	F	Δ F	β
Step 1	.29	.08	.05	.08	2.24*	2.24*	
Denial							-.14
Spirituality							.14
Perceived Social Support							.16
Perceived Controllability							.05
Resilience							-.29**
Previous Trauma							.02
Step 2	.29	.09	.04	.00	1.95	0.25	
Spirituality X Pr. Trauma							-.04

Note: N=154   *p <.05   **p<.01   Δ = change in

Table 4

Hierarchical Multiple Regression Analysis Testing Hypothesized Predictor and

Perceived Controllability – Denial Moderating Effects on Terrorism-Related Anxiety

(STAI-S measure)

Predictor Variables	R	R²	Adj. R²	Δ R²	F	Δ F	β
Step 1	.39	.15	.12	.15	4.32**	4.32**	
Denial							-.13
Spirituality							.09
Perceived Social Support							.15
Perceived Controllability							-.04
Resilience							-.42**
Previous Trauma							.06
Step 2	.39	.15	.11	.00	3.70**	0.14	
Perc. Control. X Denial							.03

Note: N=154   *p <.05   **p<.01   Δ = change in

Table 5

Hierarchical Multiple Regression Analysis Testing Hypothesized Predictor and

Perceived Controllability – Denial Moderating Effects on Terrorism-Related Anxiety

(anxiety thermometer measure)

| Predictor Variables	R	R²	Adj. R²	Δ R²	F	Δ F	β
Step 1	.29	.08	.05	.08	2.24*	2.24*	
Denial							-.14
Spirituality							.14
Perceived Social Support							.16
Perceived Controllability							.05
Resilience							-.29**
Previous Trauma							.02
Step 2	.29	.08	.04	.00	1.91	0.03	
Perc. Control. X Denial							.01

Note: N=154   *p <.05   **p<.01   Δ = change in

relationships with either measure of the criterion. The data clearly did not support this hypothesis.

Hypothesis 3: Perceived social support will be negatively associated with terrorism-related anxiety.   Perceived social support did not have significant bivariate correlations or regression relationships with either measure of the criterion. Thus, there is no support for this hypothesis.

Hypothesis 4: Spirituality will interact with previous trauma in predicting terrorism-related anxiety. For those who are high in spirituality, higher amounts of trauma will be associated with less terrorism anxiety, whereas for those who are low in spirituality, higher amounts of trauma will be associated with more terrorism anxiety. For this hypothesis, there was a discrepancy in the regressions of the two criterion measures. For the STAI-S, the effect of the predictor variables was found to be significant with the inclusion of the interaction term (F = 4.70, p<.01; F-change = 6.08, p = .02). The variance accounted for in the criterion increased .03, from .15 to .18, with the addition of the interaction term. Furthermore, the spirituality-previous trauma interaction term had a significant negative relationship with terrorism-related anxiety (STAI-S) (β = -.20, p = .02). All of these statistics can be found in Table 2, on page 75. When this interaction effect is plotted out on a graph (Figure 1), the interaction resembles an "open-mouth." Based on the results of this regression, we see that for those who reported high levels of spirituality, higher amounts of trauma were associated with less terrorism anxiety. This is a very clear relationship, with the "high spirituality" line having a slope of -.056 (-1= perfect negative relationship, 0= no relationship, 1 = perfect positive relationship). For those who reported low levels of spirituality, higher amounts of trauma

Figure 1

Spirituality By Previous Trauma Interaction
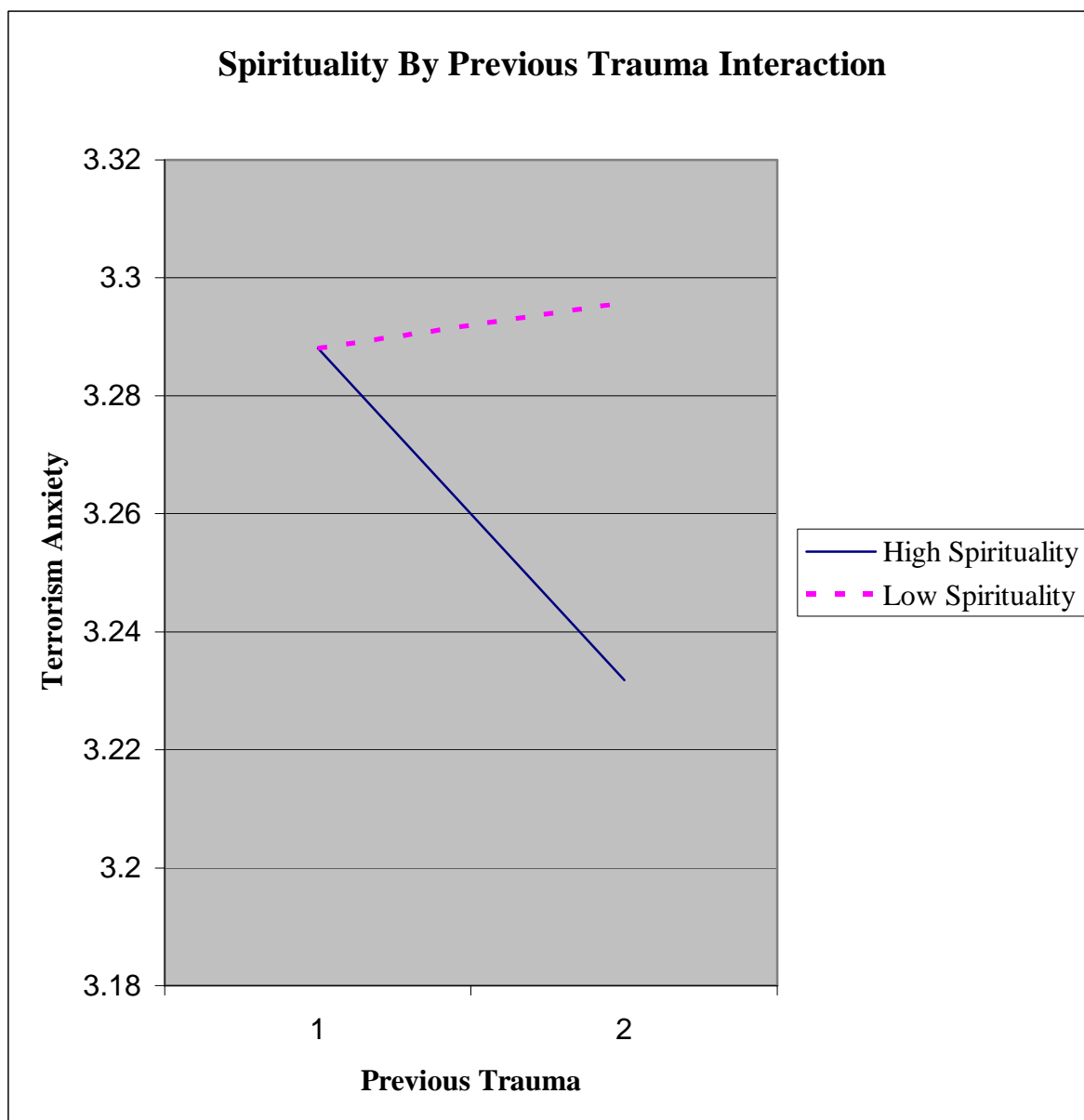
were slightly associated with more terrorism anxiety. However, the "low spirituality" line has a slope of .007, indicating that this is a very minimal relationship. Essentially, for people low in spirituality, the level of anxiety stays roughly the same, regardless of the amount of trauma.

These significant findings were not replicated in the regression where the anxiety thermometer served as the measure of the criterion variable. Here, when the interaction term was added to the group of predictor variables, the F value of 1.95 was non-significant (p = .07). Furthermore, the inclusion of the interaction term raised the p-value from its initial level of .04. The non-significant F-change value of .62 exemplifies the trend towards statistical non-significance that occurred when the interaction term was added to the regression.

In sum, hypothesis four received mixed support. The significant interaction effect in the first regression (STAI-S) indicates that we can partially support the spirituality/trauma interaction hypothesis.

Hypothesis 5: Perceived controllability will interact with denial in predicting terrorism-related anxiety. Those who perceive less control over their chances of being involved in a terrorist attack will adaptively use denial, decreasing their terrorism-related anxiety. Increased use of denial in this situation will be related to decreased terrorism-related anxiety. On the other hand, those who perceive more control over their chances of being involved in a terrorist attack will maladaptively use denial, increasing their terrorism-related anxiety. Increased use of denial in this situation will be related to increased terrorism-related anxiety. This hypothesized interaction effect was not found to be significant in regressions with both measures of the criterion variable. The F-

change significance values (when the perceived controllability/denial interaction term was added to the group of predictor variables) were .71 and .87 for the STAI-S and anxiety thermometer regressions, respectively. Furthermore, the individual interaction term did not significantly predict the variance of either criterion in each regression. Thus, one can conclude with reasonable certainty that this hypothesis was not supported.

   Research Question 1: Which variables - resilience, spirituality, perceived social support, previous trauma, perceived controllability, or denial – will uniquely predict terrorism-related anxiety above and beyond the other variables? As the only significant predictor variable in both simultaneous regressions, resilience uniquely predicted terrorism-related anxiety. For the STAI-S measure of terrorism-related anxiety, resilience had a significant relationship (β = -.42, p<.01) with the criterion (see Table 2, page 75). For the anxiety thermometer measure of terrorism-related anxiety, resilience also had a significant relationship (β = -.29, p = .01) with the criterion (see Table 3, page 76). Despite the fact that resilience was the only variable to have a significant relationship with the criterion, the overall group of predictor variables seemed to have moderate predictive power. When the STAI-S was the criterion, the six predictor variables (without the interaction terms) had a medium effect size (R^2 = .15). The effect size was smaller (R^2 = .08), however, when the anxiety thermometer was the criterion. Again, this discrepancy in results points to the need to better understand the differences between the two measures of terrorism-related anxiety.

Additional Analyses

   For the present study, a number of variables were examined in addition to the hypothesized ones. A large bivariate correlational matrix (Appendix L, p. 125) was

generated which included the hypothesized variables, all ordinal and scale-based demographic variables (age, gender, income level, education level, newspaper exposure, television exposure, radio exposure, internet exposure, and closeness to 9/11 and sniper victims), as well as the secure, dismissing, preoccupied, and fearful attachment styles.

Three significant relationships emerged between the aforementioned group of supplemental variables and the criterion variable, the STAI-S (no relationships existed between the supplemental variables and the anxiety thermometer). First, previous terrorism trauma correlated positively with terrorism-related anxiety ($r = .20$, $p = .01$). Those who reported having experienced previous trauma from a terrorist incident had higher levels of terrorism-related anxiety. Second, age correlated negatively with terrorism-related anxiety ($r = -.19$, $p < .05$). Thus, younger people tended to report higher levels of terrorism-related anxiety. Finally, the third significant relationship involved gender and terrorism-related anxiety. Female gender positively correlated with terrorism-related anxiety ($r = .20$, $p = .01$). A subsequent one-way ANOVA was run in order to better understand this correlation. Findings showed that males as a group had a mean of 1.73 on the STAI-S (scale of 1-4, lowest to highest), whereas females as a group had a mean score of 1.94; the between-groups difference was significant ($F = 6.19$, $p = .01$). Thus, women as a group tended to report higher levels of terrorism-related anxiety than men.

<u>Qualitative Item</u>

In addition to completing the quantitative items in the questionnaire, participants were given the option of responding to one qualitative item. For this item, they were asked to describe anything that they had found helpful in minimizing their worries about

terrorism. Of the 154 participants, 54 (35.1%) wrote in a response to this qualitative item. Unfortunately, the web administrator neglected to inform the author of the existing storage capacities of the website. Apparently, the web site was only capable of handling a 255-character maximum for any response. As a result, 17 of the 54 responses were cut-off, due to these responses exceeding 255 characters. Because of this error, we cannot interpret the responses with the desired degree of certainty. Nonetheless, the author thought that it still worthwhile to code all of the responses based upon the existing information. Even for the 17 cut-off responses, one can still glean the main ideas because 255 characters were written. Thus, although the validity of these findings is limited, they still have some utility.

After reading all of the responses, the author created 10 theme codes which he believed represented the thematic material covered in the responses. In order to describe each code, either a definition or quote illustrating the code is provided in parentheses. Those codes are: avoidance of media, political action/protest (e.g. "looking forward to voting Bush out of office"), acceptance/powerlessness (e.g. "terrorist attacks are something completely out of my control"), fatalism (e.g. "you die when its your time"), spirituality/religious practice, probability reasoning (e.g. "you have a better chance of getting in a car accident, but do you worry about that every day?"), social support (anything pertaining to seeking/valuing support from family, friends, therapist, etc), nationalism (trust in government, patriotism), moral determinism (e.g. "good will ultimately prevail over evil"), efforts to gain control over the situation (includes things like disaster preparation, avoiding the subway, issue awareness, etc).

Using the aforementioned theme codes, two raters independently counted the total number of occurrences for each theme code. More than one theme code could be counted for each individual response if the rater(s) thought this was warranted. For example, if a particular response was several sentences and covered a few topics (such as feeling more patriotic, and trying to ride the subway less often), it could receive more than one theme code.

One of these two raters was the author; the other was a counseling psychologist with a private practice. This second rater had clinical experience treating patients with terrorism-related anxiety emanating from 9/11. As such, she seemed like she would be an appropriate judge of qualitative responses regarding coping tactics for terrorism anxiety.

In order to calculate the reliability between the raters' theme code endorsements, each theme (10 codes) was dummy coded in SPSS for presence (0= not endorsed, 1=endorsed) in each of the 55 responses. Thus, there was a total of 550 items that could receive either a '0' or '1' rating. This process was completed for each of the two raters. Then, a reliability analysis representing the degree of agreement between the two raters' theme code endorsements was run between the 550 items for each rater. This alpha was .95, indicating strong reliability in the endorsement of theme codes between the two raters.

Findings showed that acceptance/powerlessness was the most frequent thematic type of response given by participants (inter-rater mean = 15.0 occurrences). This group of participants indicated that accepting their own lack of control over terrorism was quite helpful in minimizing their degree of worry about it. A sample acceptance/powerlessness

response was "the one thing that helps me is knowing that there is essentially nothing I can do about it, and nothing I can do to prevent it. I live my life as usual and hope for the best. Fear of the unknown can be paralyzing." The second-highest endorsed theme was efforts to gain control over the situation (inter-rater mean = 12.0 occurrences). Thus, for another large group of participants, feeling a sense of autonomy or control over their terrorism risk was adaptive. Examples of these efforts included activities such as becoming more educated about terrorism, stockpiling supplies, becoming more vigilant, and avoiding the subway. Other themes gaining more than five responses included avoidance of media (inter-rater mean = 8.5 occurrences), fatalism (inter-rater mean = 8.0 occurrences), probability reasoning (inter-rater mean = 7.5 occurrences), spirituality/religious practice (inter-rater mean = 7.0 occurrences), and social support (inter-rater mean = 6.5 occurrences).

Chapter 6: Discussion

For the present study, there were two major findings. First, resilience was negatively related to terrorism-related anxiety. Thus, people with greater resilience reported lower levels of terrorism-related anxiety. Yet, surprisingly, no other predictor variables were related to the criterion. Second, spirituality received partial support as a moderator of the relationship between previous trauma and terrorism-related anxiety. For people high in spirituality, higher levels of previous trauma were associated with lower levels of terrorism-related anxiety. For people low in spirituality, there was no significant relationship between previous trauma and terrorism-related anxiety. Thus one's degree of spirituality was an important factor in determining levels of terrorism-related anxiety for those who had experienced a previous trauma.

The discussion chapter is divided into five sections: hypothesized results, criterion differences, additional analyses, limitations, and future directions. In these sections, we attempt to provide potential explanations for the results while taking into account the limitations of the present study. The chapter concludes with suggestions for future research on the topic of terrorism-related anxiety.

Hypothesized Results

In the present study we saw a moderate relationship between resilience and terrorism-related anxiety. What might explain this relationship? Earlier in this paper, resilience was defined as the ability of an individual to cope better during times of misfortune and recover more quickly after them than other individuals (Butler et al., 2003b). While it is difficult to conceptualize what a "time of misfortune" is when there is no actual terrorist attack to speak of, one can reasonably infer that periods of uncertainty,

such as when a terrorist threat remains ambiguous and unclear, often produce stress. In the present study, we saw that resilient people seemed to feel less anxiety about the impact of terrorism on their lives than non-resilient people. As other studies examining reactions following 9/11 found, resilient people seem to be able to find positive meaning from otherwise stressful situations (Butler et al., 2003b; Frederickson et al, 2003). Perhaps this type of response also applies to daily, post-9/11 life; that is, perhaps resilient participants in the current study were also able to find positive meaning in the challenge of living in an uncertain post-9/11 world. Because of the lack of findings that can be attributed to the other predictor variables, it seems that the characteristic of resilience may be a decisive factor of one's terrorism-related anxiety.

Although the association between resilience and terrorism-anxiety in the present study is significant for the STAI-S measure (r = -.32), it is somewhat smaller than the observed correlations between resilience and generalized anxiety in other studies. However, it is difficult to compare the associations of terrorism-anxiety and general-anxiety to resilience because of a lack of standardized methodology and constructs across studies. For example, Connor and Davidson (2003) used an ANOVA to show group differences in resilience between samples of the general population and generalized anxiety disorder (GAD) patients. Other studies used correlational designs to examine the association between resilience and anxiety. However, some of these studies used the construct of resilience, whereas others used the convergent (but distinct) construct of hardiness. Furthermore, trait anxiety was measured rather than state anxiety (as in the current study), except for a study by Florian and colleagues (1995), which used 'psychological distress' (items describing "negative states"). Overall, the correlation

coefficients between resilience/hardiness and trait-anxiety/distress ranged from -.35 to -.53 (Frederickson et al., 2003; Florian et al., 1995; Funk, 1992). Because of the lack of standardized methodology in these studies, it is difficult to draw inferences about the differences in association with resilience between terrorism-anxiety and generalized-anxiety. Thus, we cannot compare terrorism-anxiety and generalized-anxiety at this stage in the research.

Despite the significant association between resilience and terrorism-related anxiety in the current study, there are several issues that bear evaluation. First, resilience had a high mean and a limited standard deviation (3.31, SD = 0.33, range of 1-4). This indicates that most people in the sample considered themselves resilient, with minimal variation, according to the measurement criteria used. Perhaps the operationalization of resilience was too broad, allowing the presence of other constructs to inflate the resilience scores of the sample. In the present study, resilience was defined as the ability of an individual to cope better during times of misfortune and recover more quickly after them than other individuals. While this definition implied more of a dispositional nature to resilience, it left open the possibility of environmental and other contributions to this construct. As covered in the 'methods' chapter, the PRBS measure of resilience had four factors: positivity/empowerment, spiritual support, powerlessness, and mattering. Of these four factors, only positivity/empowerment (the ability to reframe negative events in a positive light) captures the dispositional aspect of resilience referred to in research studies such as those by Frederickson and colleagues (2003) and Block and Kremens (1999). Factors such as 'spiritual support' and 'mattering' resemble the constructs of

spirituality and perceived social support, respectively. One could also make an argument that 'powerlessness' is closely tied to perceived controllability.

Hence, an important question is raised. Is the construct of resilience in essence a dispositional construct, or is it an umbrella construct containing related constituents? The way we view and measure this construct has an impact on its measurement levels and its relationships with other constructs. According to one view, resilience could contain constituent factors, such as spiritual support and mattering. An alternative view would state that the other three factors only relate to resilience, but do not compose it. Under this rationale, a mediational relationship could exist where constructs such as spirituality and social support predict resilience, which in turn predicts terrorism-related anxiety and other types of stress reactions. These alternate views of resilience could be tested using multiple, varying measures of the construct in future research.

Although there was a rationale based on existing research for using each of the other variables as predictors, none had significant relationships to the criterion. It is difficult to ascertain the reason(s) for these non-significant relationships. Given that some of these variables, such as perceived social support and previous trauma, had been associated with stress following a terrorist attack (Conway & Terry, 1992; Applewhite & Dickens, 1997; Butler et al., 2003b; Silver et al., 2003), it is somewhat surprising that no relationships were established with the criterion variable in the present study. As terrorism research is still in its relative infancy, it could be that these constructs are not of critical relevance to terrorism-related anxiety.

An alternative explanation could be that terrorism-stress – which was the criterion variable for much of the research cited in the present study – is not directly equivalent or

applicable to terrorism-related anxiety. Thus, one might not be able to expect these five

constructs to influence terrorism-stress and terrorism-related anxiety in the same way.

Terrorism-stress describes post-event reactions, whereas terrorism-related anxiety

describes anticipation of future-based events. Other unknown variables could have a

greater influence on anticipation of future terrorism, as opposed to stress reactions from

previous terrorism.

Alternatively, perhaps the timing of the study influenced these non-significant

results. Most of the research cited for the present study took place immediately following

a terrorist attack (such as 9/11), whereas the present study was conducted almost three

years after the last incidence of terrorism on U.S. soil. As this was not a longitudinal

study, we cannot compare the overall levels of the constructs to a different time period.

However, it is possible that some of the hypothesized relationships might have been

significant during a period immediately following a terrorist attack.

Finally, as is often the case in research, many constructs are shown to have

varying levels of influence across different research studies. It is the overall body of

research that is the determinant of a construct's predictive value. Thus, further

assessment of these variables is needed before a final conclusion about their relevance to

terrorism-related anxiety can be reached.

An additional point worth noting in discussing the relevance of the other predictor

variables (excluding resilience) is that many of them had relationships with the criterion

that approached significance. For example, in the regression with the anxiety

thermometer serving as the criterion, denial ($p = .08$), spirituality ($p = .09$), and perceived

social support ($p = .10$) all approached significance to varying degrees (i.e., prior to the

inclusion of the interaction term). These statistics certainly do not mean that these constructs are predictors of terrorism-related anxiety. However, they suggest that additional research utilizing different methodological variations might further clarify the role of these constructs. In addition, they also help us understand why, although only one predictor (resilience) out of six had a significant relationship with terrorism-related anxiety, the overall group of six variables taken together (denial, spirituality, perceived social support, resilience, perceived controllability, and previous trauma) had a significant, medium effect size in predicting the variance in terrorism-related anxiety (R^2= .15, p<.01 for STAI-S; R^2= .08, p<.05 for anxiety thermometer).

There are varying explanations for the individual non-significant relationships of the respective predictor variables with the criterion. For perceived social support, the mean was high and the standard deviation was relatively limited (M = 3.57, SD = 0.32, range 1-4). The high ratings and minimal variability could help explain why social support did not correlate with the criterion. If the vast majority of the sample perceived a high degree of social support, than there might not have been enough variability present to allow for a significant correlation with other variables. As social support, education and socioeconomic status are often linked (Galea et al., 2002), perhaps the relative affluence and high education level of this internet sample also meant that there was strong social support. Perhaps we would have seen more variation in perceived social support with a more diverse sample.

As there was no empirical precedent established for relating perceived controllability and terrorism-related anxiety, it could be that these constructs in fact have little association with another. Perhaps control is more relevant for types of anxiety

related to personal agency. Individuals may have felt that terrorism was an ambiguous, abstract issue unrelated to their own control. On the other hand, given that themes of controllability ('efforts to control the situation', 'acceptance/powerlessness') were frequently endorsed in the qualitative item of the present study, this explanation may not be plausible. In addition, given the high reliability of the items assessing the construct (alpha = .90), the non-significant results cannot be attributed to unclear item wording and/or instructions. The aforementioned discrepancies are puzzling, and point to the need for further testing of this construct using multiple measures and varied samples and time periods.

One possible explanation for the non-significant relationship between denial and terrorism-related anxiety is the timing of the study. As explained in the 'literature review' chapter, denial seems to be adaptive for societies which experience constant exposure to terrorism, and maladaptive for societies experiencing terrorism for the first time. However, in the case of the USA, where there has been a long lull between attacks, it could be that denial lacks either a positive or negative influence on terrorism-related anxiety. If the criterion construct is not particularly salient (i.e. objective low terrorism risk) to begin with, denial may not be necessary and/or utilized. One may not be in a situation where he or she must use denial to minimize his stress and anxiety, nor in a situation where terrorism is so new and psychologically powerful (such as in the immediate aftermath of 9/11) that ignoring it only worsens one's stress and anxiety.

The findings regarding the spirituality-previous trauma interaction (with the STAI-S criterion) are a new contribution to the body of research on terrorism. This hypothesis was based on the idea that a spiritual grounding could transform a harmful

event – being involved in some kind of trauma – into an adaptive foundation for dealing

with the anxiety of future-based traumas (e.g., terrorism). Under this rationale,

individuals who gained (or already possessed) a spiritual strength from their ordeals

would feel empowered to face future traumas (i.e. "god helped me survive, so I know that

I can face whatever comes my way"). Thus, the author hypothesized that for those who

were high in spirituality, higher amounts of trauma would be associated with lower

amounts of terrorism-related anxiety, whereas for those who were low in spirituality,

higher amounts of trauma would be associated with higher amounts of terrorism-related

anxiety. The first part of this hypothesis, regarding high levels of spirituality, was

supported. For participants who rated themselves as being highly spiritual, those who

had experienced higher amounts of trauma clearly felt less anxious than those who had

experienced lower amounts of trauma. Of particular pertinence is the fact that the

construct of spirituality was not related in and of itself with terrorism-related anxiety.

Thus, while spirituality did not have an adaptive role for the entire sample in minimizing

terrorism-related anxiety, it was quite adaptive for the smaller subset of individuals who

had experienced previous trauma. As this is a correlational study, we cannot make causal

conclusions about this interaction. However, we can tentatively infer that some aspect of

spirituality seems to be particularly comforting and/or strengthening to individuals who

suffer from trauma, allowing them to be more at ease about the future uncertainty of

terrorism than others.

For the second part of the hypothesis, regarding low levels of spirituality, the

relationship between previous trauma and terrorism-related anxiety was non significant.

Although no U.S. research has been conducted on anticipatory responses to terrorism, the

findings of existing research on the relationship between previous trauma and responses to 9/11 was mixed. Galea and colleagues (2002) had found a negative relationship between previous trauma and adjustment following 9/11, whereas Silver and colleagues (2002) and Butler and colleagues (2003b) had not. Thus, the lack of a relationship between previous trauma and terrorism-related anxiety (for those low in spirituality) is not unprecedented. However, given the oft-supported negative relationship between previous trauma and subsequent trauma responses, this finding is somewhat surprising. The author expected that without the potentially protective buffer of spirituality (e.g. individuals low in spirituality), there would be a positive relationship between trauma and terrorism-related anxiety. Perhaps previous trauma was not an important factor for individuals low in spirituality because the terrorism risk was more abstract in nature. Individuals were being asked about their levels of anxiety regarding a terrorist incident that had yet to occur, and which had a low statistical likelihood of affecting them. Perhaps if they had been responding to a questionnaire immediately following a terrorist incident, previous trauma might have played a more significant role for individuals low in spirituality.

Of course, it becomes more difficult to interpret some of these results when there is a consistent discrepancy in findings between the two measures of the criterion, terrorism-related anxiety. For the bivariate correlations, resilience significantly correlated with the STAI-S measure, but not the anxiety thermometer measure. Furthermore, in two separate regressions, the spirituality / previous trauma interaction had a significant relationship with the STAI-S measure, but not the anxiety thermometer measure. Thus, in two key instances the predictor variables had significant relationships

with one criterion (the STAI-S), but not the other (the anxiety thermometer). What could account for this discrepancy, and more importantly, how might this effect our understanding of the results?

Criterion Differences

There are several explanations that could help account for the differences in findings between the STAI-S and anxiety thermometer. First, there is the issue of the instructions for each measure, and their subjective meanings. In the STAI-S, subjects are asked "how worried do you feel right now" about the possibility of being the victim of a terrorist attack, whereas in the anxiety thermometer they are asked how much they worry [about the possibility of being the victim of a terrorist attack] "on a daily basis." Because the words 'how …you feel right now' are used in the STAI-S, a feeling of immediacy is evoked that seems to be less present with the anxiety thermometer. This feeling of immediacy is more in line with the author's conceptualization of terrorism-related anxiety. Another reason behind the difference in results is that the STAI-S captures a range of affect and cognition, whereas the anxiety thermometer just captures the affective element of worry. While both measures have the word "worry" in their instructions, every item of the STAI-S is designed to capture a different element of affect (e.g. "I feel calm", "I feel frightened", "I feel jittery"). With the anxiety thermometer, on the other hand, participants can only rate their amount of worry from 1-10. Thus, the measure is solely focused on one aspect of affect (worry). In conclusion, we see several potential reasons why the measures were divergent in some of their findings. These explanations tentatively suggest that the STAI-S might have been a more valid assessor of terrorism-related anxiety as it is conceptualized in the current study.

Because of an interest in level of worry (regarding terrorism risk), the anxiety thermometer scale markers were changed from "not at all anxious" (1) and "extremely anxious" (10) to "not at all worried" (1) and "extremely worried" (10). In the 'introduction' chapter, terrorism-related anxiety is defined as the stress created by fearing that terrorism will threaten one's life or that of a loved one. Using the word "worried", as opposed to the word "anxious", seemed to be a better reflection of the fear element expressed in the construct definition. Furthermore, as Houtman and Bakker (1989) had used slight variations to the wording of the thermometer scale markers (to assess anxiety or nervousness), this change was expected to have minimal impact on the validity of the measure. However, given that the anxiety thermometer and STAI-S had a correlation of .59 in the current study, which was somewhat less than Houtman and Bakker's (1989) range of .63 - .77, it is possible that the convergent validity of the measure could have been reduced. This could help explain why the results were less consistent across the two measures than expected. Nonetheless, the difference in correlation coefficients (.59 versus .63-.77) is fairly minimal. It is unlikely that the change in wording for the anxiety thermometer significantly impacted the convergent validity or contributed to the criterion differences between the two measures.

<u>Additional Analyses</u>

In the results section, age and gender were significantly correlated with terrorism-related anxiety. Younger people tended to report slightly higher levels of terrorism-related anxiety. Because younger people might feel further away from a natural death, the psychological impact of terrorism could be more pronounced. The idea of dying an early, unnatural death could create more anxiety in younger adults. Although there is no

research that specifically examines the relationship between age and terrorism-related anxiety, there is a moderate amount of research on age and death anxiety. Abengozar and colleagues (1999) cite three hypotheses regarding the relationship between age and death anxiety. The first hypothesis states that because they sense their deaths drawing closer, the elderly will show the highest levels of anxiety. The second hypothesis states the opposite- the elderly feel less death anxiety because death is not as frightening as might have been imagined at an earlier age. An individual's overall development helps him or her confront his or her issues of mortality. Finally, the third states that age alone is insufficient in predicting attitudes towards death. Some studies have found that samples of older adults report lower levels of death anxiety than samples of younger adults, thus seeming to confirm the second hypothesis and mirroring the results of the current study (Thorson & Powell, 2000; Tomer et al., 2000; Rasmussen & Bens, 1996). On the other hand, Abengozar and colleagues (1999) found that older adults feel the highest levels of despair, fear, loneliness, and depression when confronting death. Thus, research findings on this issue are mixed. However, it is possible that the second hypothesis postulated by Abengozar and colleagues (1999) could help explain the age results found in the current study. This hypothesis could be supported by Rasmussen and Bens' (1996) finding that psychosocial maturity was a strong negative predictor of death anxiety. Perhaps age and maturity work together in influencing one's level of death anxiety.

In addition to the inverse relationship between age and terrorism-related anxiety, women as a group tended to report slightly higher levels of terrorism-related anxiety than men. One possible explanation of this finding is that there could be a gender difference in experiencing and/or expressing terrorism-related emotion. Perhaps women in this

sample were more aware and/or more expressive of their emotions than the men.

Research by Wadsworth and colleagues (2004) supports this idea, as it found that women

adaptively used emotion-based coping to adjust to 9/11. In addition, Houtman and

Bakker (1989) found a gender difference while testing the anxiety thermometer. They

concluded, from their own data and the existing body of literature, that there is a higher

level of subjective responsiveness from women than men. Women tend to be more

prepared to report their emotions than men (Houtman & Bakker, 1989). This conclusion

could help explain the gender difference for the current study in levels of terrorism-

related anxiety.

In the present study, the qualitative item was an attempt to gain some initial

insight into individuals' views about terrorism and their strategies for managing their

anxiety about it. The fact that the two highest endorsed qualitative themes are opposites

of one another – relinquishing a feeling of control over a stressor

('acceptance/powerlessness') versus seeking control over it ('efforts to gain control over

the situation')– is somewhat ironic. It indicates that people have very different ways of

coping with terrorism; more research should be conducted on the effectiveness of these

varying methods. In retrospect, it might have been useful to ask participants a follow-up

question about the perceived efficacy of their coping strategies. This should be

considered in future research.

According to Carver and colleagues (1989), one factor in determining the

appropriateness and efficacy of respective coping strategies may be the reality of the

stressor. When the stressor is something that can be directly addressed, it is logical and

adaptive to take action to deal with it. However, when the stressor is something that must

be accommodated to, as opposed to changed, acceptance can be seen as a functional

response. Thus, acceptance of a stressful situation occurs when one perceives it to be real

and also perceives a lack of available strategies to deal with it (Carver et al., 1989). In

the current study, it is not surprising that roughly equivalent amounts of individuals chose

to accept their powerlessness over their fate as a potential terrorist victim and chose to

take action to minimize that possibility. Using Carver and colleagues' rationale, the

reality of terrorism is part objective and part subjective. Hence, the threat of a terrorist

attack will feel more real for some than others (although there most likely is a baseline

level of reality). In addition, one's range of available options to minimize the risk of

being a terrorist victim (e.g. changing one's mode of commute, stockpiling emergency

supplies) is subjective. On the one hand, some individuals will feel that there are actions

they can take to reduce their chances of being a terrorist victim. On the other hand,

others will see the risk as unrelated to any action they can take. For example, one

participant wrote, "I do not worry about things I have no immediate control over. If I

can't change it myself, I don't stress about it."

Limitations

Before concluding, it is important to recognize the overall limitations of this

study. Limitations in sample, design, and measurement all have the potential to reduce

one's level of confidence in the findings.

The first design limitation for the present study has to do with its method of data

collection. By using a web-based method, it was difficult to counteract selection bias.

Because the sample was not randomly selected, it is open to this validity threat.

Although a convenience sample was used, an attempt was made, as much as possible, to

create semi-randomized conditions. By not disclosing the nature of the study to the initial referral group, the study was designed to facilitate the random referral of participants. In this sense, the sampling goal was met, as the participants were not chosen based on their interest (or lack of) in the topic of terrorism. This reduces self-selection bias as related to the topic. On the other hand, despite a concerted attempt at having a representative sample (see 'procedure' section), the participants were mostly white individuals with a high level of education. The external validity of the findings is naturally somewhat compromised by this demographic limitation. The author was aware of this limitation in advance, and tried to minimize it by requesting that friends and colleagues refer individuals that were diverse in background (see 'procedure'). Despite this attempt, participants ended up being somewhat homogenous in terms of race and income level.

What are the implications of the 41% return rate? Almost one out of every two people contacted to participate in this study chose to do so. Is this figure low, and does it reflect a self-selection bias? One concern is that the initial contact group could have referred individuals that they thought were likely to participate in a research study, thus inflating the return rate. This is a valid concern, but difficult to avoid without utilizing random sample assignment, which was not feasible. Another potential concern could be that only people who felt a personal connection to the topic chose to participate. Individuals minimally affected by terrorism-anxiety might have comprised a large segment of the 59% of people who chose not to participate. Thus, a valuable subset might have been left out, decreasing the external validity of the findings. This critique is most likely accurate, although probably only to a limited extent. The topic of this study –

terrorism – is a 'hot' topic right now. It is frequently in the news, and has some sort of

relevance to most people in the Washington, DC area because of the city's relationship to

domestic terrorism. Thus, the level of exposure to this research topic increases the

likelihood of participation regardless of one's personal beliefs about or reactions to

terrorism. A more likely explanation of why the return rate was not higher has to do with

the mode of data collection, the internet.   Individuals receive scores of e-mails every

day, and give a quick glance to each. Any e-mail seen as a remote imposition or nuisance

– such as one requesting participation in a study – is often discarded without further

thought. Furthermore, many individuals have junk-mail filters that block out e-mails

from anyone they do not know. Thus, in all likelihood, a portion of the individuals who

did not participate may not have even seen the e-mail requesting their assistance. This is

a key point because it means that if the subset of people who never saw the e-mail is

removed from the equation, the return rate would probably be higher than 41%. This

means that there is probably less of a selection bias than one might initially assume.

Finally, the anonymity of the internet eliminates the personal factor of research

solicitation. With university research involving students, the researcher often comes to

classes to request participants. As a result, a face is paired with the research request,

giving it a more personal quality and making it harder to reject. However, with the

internet, there is no personal connection to the research, and this makes it easier for the

potential participant to decline to participate without putting much thought into it. Even

when one receives a research solicitation in the mail, there is a physical connection – the

letter one holds in his or her hands – to the research request. This helps explain why it

can be difficult to achieve high return rates in internet research. In fact, research suggests

that return rates to online surveys are typically lower than telephone surveys (Kraut et al., 2004; Tourrangeau, 2004; Mathy et al., 2004) and lower (Kraut et al., 2004) or equivalent (Mathy et al., 2004) to mail surveys. According to Tourrangeau (2004), response rates to telephone surveys usually are around 60%. Thus, to some researchers, the 41% return rate for the current study would be considered low.

However, considering the obstacles involved in recruiting participants for internet research, the 41% return rate could be considered high to others. Two studies suggest that the average return rate for internet research is around 25% (Mathy et al., 2004; Tourrangeau, 2004). Furthermore, Tourangeau (2004) writes that refusal rates and non-response rates to surveys of all types (mail, telephone, face-to-face, internet) have doubled in the last decade. Thus, considering these statistics, the return rate for the current study would be impressive. Two factors were built into the study to enhance the return rate. First, the initial group of colleagues and friends of the author was asked to refer individuals whom they thought would be interested in participating in a research study (the topic was not given). Hence, referrals were likely to be individuals interested in research – this made them more likely to participate than the average person (also reducing the generalizability of the subject pool to the general population on this characteristic). In addition, the mention of the referral source's name in the recruitment e-mail ("you have been identified by a family member, friend or colleague (John Doe) as someone who would be interested in participating in a brief internet study on terrorism") most likely increased the potential participant's personal investment in the project. This step was taken to counteract the anonymity 'effect' of internet research previously mentioned. Taken together, these two explanations help us understand why the return

rate for the present study could be considered high for some researchers familiar with internet research.

In addition to the data collection method, another potential limitation of the present study is its cross-sectional design. At this stage in our knowledge of terrorism-anxiety, we do not know whether the construct is relatively fixed or fluctuating. Perhaps different events have the ability to influence this construct. This study was administered in March and April 2004, a relatively calm period in the post-9/11 world of terrorism. The author was prepared to factor fluctuations in media coverage and threat alerts into his assessment (see 'procedures'), but there were none. However, between August and November 2004, there was a rise in the specificity of intelligence regarding a terrorist attack, the threat level in New York City and Washington, and the nationwide media coverage of terrorism. Had subjects been longitudinally assessed during this time period, the possibility exists that their responses might have differed significantly from those in March/April. Thus, utilizing a cross-sectional design limits the ability to assess time-related variations in the constructs used in this study.

There are also several measurement issues to consider in evaluating study limitations. First, all constructs were assessed using survey (self-report) research. Since the author was primarily concerned with making the study as accessible as possible, a questionnaire format was the logical choice. However, because the questionnaire was composed entirely of self-reports, the author had to trust the ability of the participant to honestly and accurately assess him or herself. With a construct such as terrorism-related anxiety, for example, that can be relatively difficult. Is a participant necessarily in touch with or aware of his or her physiological responses to terrorism (one element of

terrorism-related anxiety)? Perhaps, an individual thinks he or she feels fine about

terrorism, but has a knot in his or her stomach every time he or she rides the subway to

work.   These types of discrepancies can be lost in self-reporting. Unfortunately, there

are very few viable alternatives. Utilizing a different assessment method to measure

anxiety – such as an interview or a galvanized skin response (GSR) test – greatly reduces

the ability to recruit a large enough sample size.

In addition, as discussed earlier in this section, the criterion might have been more

accurately assessed through the use of an alternative second measure. With only one

item, the anxiety thermometer was primarily focused on one affective dimension of

anxiety (worry). An alternative measure focused on multiple dimensions of anxiety (e.g.

cognition, affect, physiological) would have better operationalized the construct. Of

course, these types of realizations often appear clear in retrospect. At the time, a simple,

validated anxiety measure was sought to empirically supplement the findings of the

STAI-S for the present study. The anxiety thermometer seemed like the ideal choice for

this research need. It already had evidence of validity, seemed to overlap with (but not

replicate) the STAI-S, and would not have dramatically added to the amount of time

needed to complete the questionnaire.

<u>Future Directions</u>

The present study is a useful building block for a research program on the post-

9/11 construct of terrorism-related anxiety. A moderate sample size was assessed at one

point in time, through the completion of established self-report measures. Several

significant findings were reported. However, as just discussed, there still were several

limitations associated with this research method. According to Gelso's (1979) bubble

hypothesis, there will always be some sort of limitation, drawback, or "bubble" that arises with the type of design chosen for a particular research study. In addition, the solution of one set of problems usually creates a different set. Therefore, the best way to minimize these bubbles over time is to develop a varied program of research that utilizes different types of research designs and methodology. Hence, in recommending directions for future research, it is suggested that subsequent studies employ different designs and methodologies from the ones utilized in the present study.

While additional cross-sectional research is certainly useful and necessary, longitudinal studies would allow researchers to gain a better understanding of the stability of terrorism-anxiety and its related constructs over time. How would individuals' anxiety about terrorism change with additional attacks? A pattern could arise where terrorist attacks are followed by periods of quiet where individuals and institutions adjust and try to anticipate the next attack. In this example, the time period assessed by the current study would qualify as one of these "quiet" periods (in-between 9/11 and another terrorist attack). It would be interesting to assess individuals immediately following terrorist attacks, as well as in subsequent "quiet" periods such as the one assessed in the current study. How would their reactions and anxiety levels differ? How might the relationships between the predictor and criterion variables differ? As referred to earlier in the 'discussion' section, perhaps certain protective factors such as social support might play a more prominent role in periods immediately following an attack. For example, an individual might not rely heavily on his or her support system in "quiet" periods, but social support could figure more prominently in a post-attack period.

In the present study, we found a strong relationship between resilience and terrorism-related anxiety. Thus, we saw further evidence that resilience is an important construct to understand in studying people's reactions to and fears of terrorism. Here, we did not seek to differentiate between dispositional and environmentally learned resilience. But as discussed in earlier chapters of this paper, there are differing schools of thought on the nature of resilience. A longitudinal study on resilience and terrorism-related anxiety could allow us to follow a sample group that had received resilience training. Through pre and post-tests, we could gain a sense of the efficacy of this type of training in helping people deal with their fears of terrorism.

Different types of sampling should be pursued in future research on this topic, as well. Studies employing larger, more representative samples would allow researchers to better generalize to populations being studied. Larger samples could allow data to be divided into sub-samples for more detailed testing. More representative samples would allow researchers to gain a better understanding of how the topic of terrorism is experienced across ethnic, racial, and socioeconomic backgrounds. Researchers might want to consider combining internet-based questionnaires with paper-based ones that are administered in more diverse geographic areas. Ultimately, it would be helpful for researchers to work in conjunction with various community groups to gain better access to potential participants.

Certainly, it seems too early at this stage of research to rule out further studying any of the predictor variables in the present study. Furthermore, other personality variables, such as personality type (e.g., Type A versus B, Myers-Briggs personality styles), method of affect expression (internalizers versus externalizers), and locus of

control seem relevant to terrorism stress and anxiety. In addition, it would be useful to know to what extent environmental "training" – such as resilience training and other stress inoculation efforts – is useful in reducing individuals' stress reactions to terrorism over time. All of these areas deserve further study.

Finally, researchers should consider utilizing more extensive and varied forms of assessment instruments. While this would most likely involve smaller sample sizes, it would allow more thorough assessment of relevant constructs. For example, terrorism-related anxiety could be assessed through self-reports, interviews with trained teams of observers, and GSR tests. This range of methodology would allow for a more accurate assessment of the construct being studied.

Regardless of the type of design and methodology used, more research is needed in the area of terrorism-related anxiety. In this uncertain age of terrorism, public preparedness is essential. As data patterns and trends start to emerge, researchers will be able to provide tremendous insight to the government, emergency response and mental health personnel, and the general public about how individuals respond to the threat of terrorism and the preventive factors that differentiate their responses.

Appendix A: Denial

Take a few moments and think about the most stressful situation that you have experienced in the past month related to terrorism. By "stressful" we mean a situation that was difficult or troubling for you, either because you felt distressed about what happened, or because you had to use considerable effort (mental and/or physical) to deal with the situation. Examples might include hearing about an increased terror threat level in this country, or reading about an airline flight to this country being cancelled because of security concerns. If you are having difficulty in thinking of something stressful related to terrorism in the past week, feel free to think back further than a month ago. Please refer to this situation in answering the items below. We are interested in your responses to this situation. Use the following scale to evaluate how you responded to the situation:

0= does not apply and/or not used

1= used somewhat

2= used quite a bit

3= used a great deal

1. Made light of the situation; refused to get too serious about it.

2. Went on as if nothing had happened

3. Didn't let it get to me; refused to think about it too much.

4. Tried to forget the whole thing.

5. Looked for the silver lining, so to speak; tried to look on the bright side of things.

6. Went along with fate; sometimes I just have bad luck.

Appendix B: Spirituality

The Spiritual Transcendence Index (Seidlitz et al., 2002)

Please respond to each of the items by circling the one number that most closely

describes the extent to which you agree or disagree with the statement.

1= strongly disagree

2= disagree

3= slightly disagree

4= slightly agree

5= agree

6= strongly agree

1. My spirituality gives me a feeling of fulfillment.

2. I maintain an inner awareness of God's presence in my life.

3. Even when I experience problems, I can find a spiritual peace within.

4. I try to strengthen my relationship with God.

5. Maintaining my spirituality is a priority for me.

6. God helps me to rise above my immediate circumstances.

7. My spirituality helps me to understand my life's purpose.

8. I experience a deep communion with God.

Appendix C: Perceived Social Support

The Social Provisions Scale (Cutrona & Russell, 1987)

In answering the following questions, think about your current relationships with friends, family members, co-workers, community members and so on. Then indicate by circling the correct number, to what extent each statement describes your current relationships with other people. Use the following scale to give your opinions:

1   2   3   4

Strongly   Strongly

Disagree   Agree

1. There are other people I can depend on to help me if I really need it.

2. I feel that I do not have close personal relationships with others.

3. There is no one I can turn to for guidance in times of stress.

4. There are people who depend on me for help.

5. There are people who enjoy the same social activities I do.

6. Other people do not view me as competent.

7. I feel personally responsible for the well-being of another person.

8. I feel part of a group who share my attitudes and beliefs.

9. I do not think that other people respect my skills and abilities.

10. If something went wrong, no one would come to my assistance.

11. I have close relationships that provide me with a sense of emotional security and well-being.

12. There is someone I could talk to about important decisions in my life.

13. I have relationships where my competence and skills are recognized.

14. There is no one who shares my interests and concerns.

15. There is no one who really relies on me for their well-being.

16. There is a trustworthy person I could turn to for advice if I were having problems.

17. I feel a strong emotional bond with at least one other person.

18. There is no one I can depend on for aid if I really need it.

19. There is no one I feel comfortable talking about my problems with.

20. There are people who admire my talents and abilities.

21. I lack a feeling of intimacy with another person.

22. There is no one who likes to do the things I do.

23. There are people I can count on in an emergency.

24. No one needs me to care for them.

<u>Appendix D: Resilience</u>

The Personal Resilience Beliefs Scale (Holmes, 2001)

<u>Directions:</u> For the next 30 items, please read each statement and fill in the bubble corresponding to the number that most closely reflects how you feel about each item.

Strongly disagree: 1
Disagree: 2
Agree: 3
Strongly agree: 4

	Strongly Disagree	Disagree	Agree	Strongly Agree
1) I feel like I can influence my life situation.	1	2	3	4
2) My belief in a higher power helps me when life is hard.	1	2	3	4
3) If something goes wrong, I go to a higher power for help.	1	2	3	4
4) I am a survivor.	1	2	3	4
5) I see difficulty as a challenge from which I can learn.	1	2	3	4
6) My faith/spirituality gives me hope when life seems bleak.	1	2	3	4
7) My faith/spirituality doesn't really impact my life that much.	1	2	3	4
8) Things rarely seem to work out in my favor.	1	2	3	4
9) There is someone in my life who would be there no matter what.	1	2	3	4
10) I believe that a higher power is there for me when life is challenging.	1	2	3	4
11) I expect that the worst will happen.	1	2	3	4
12) I believe there are people who I could ask for help in difficult times.	1	2	3	4
13) I generally feel bad about myself.	1	2	3	4
14) My faith/spirituality does not help me deal with life's difficulties.	1	2	3	4
15) It doesn't seem like there is anybody that I could look to for support if I were having a hard time.	1	2	3	4
16) I tend to see the negative things in life.	1	2	3	4
17) I find my faith/spirituality to be comforting in times of need.	1	2	3	4
18) I can make the best of a bad situation.	1	2	3	4
19) I believe that I can handle stressful events.	1	2	3	4
20) I am committed to finding the positive aspects of life.	1	2	3	4
21) When something bad happens, I feel like there is someone I can talk to.	1	2	3	4
22) I can deal with difficulty in life.	1	2	3	4
23) When bad things happen, I want to just give up.	1	2	3	4
24) Things can happen in life that are too much for me to handle.	1	2	3	4
25) My feeling of self-worth gives me strength during stressful times.	1	2	3	4
26) I believe that I have what it takes to make it through life's struggles.	1	2	3	4
27) I have a strong will that helps me keep going even through the toughest experiences.	1	2	3	4
28) My faith/spirituality gives me strength during times of hardship.	1	2	3	4
29) I believe I gain strength from working through	1	2	3	4

difficult experiences.

30) Even when things go wrong in my life, I won't give up.   1   2   3   4

Appendix E: Perceived Controllability

Perceived Controllability of Event (Conway & Terry, 1992)

Please circle <u>one</u> number on a scale ranging from 1 (Not at all) to 5 (very much). These

items all refer to your feelings about the threat of a terrorist attack. The "outcome of the

situation" refers to your being the victim of a terrorist attack.

1. How much do you feel that the outcome of the situation is beyond your control?

2. How much do you feel that the situation is something you can change or do

   something about?

3. How much do you feel that you have to accept the situation as there is nothing

   you can do to change it?

4. How much do you feel that you can take steps to resolve the situation?

5. How much do you feel that the outcome of the situation will be influenced by

   factors external to yourself?

6. How much do you feel that your abilities will influence the outcome of the

   situation?

7. How much do you feel that you have control over the situation?

8. How much do you feel that the situation will occur because of some factor

   external to yourself?

9. How much do you feel that the situation will occur because of something you did?

Appendix F: Previous Trauma

Please answer the following two questions with a "yes" or "no":

1. I have been personally involved in a traumatic incident which caused me physical and/or psychological harm.

2. If you answered item #1 with a "yes," please rate the severity of that incident on a scale of 1-10 (lowest to highest).

3. I have been personally involved in a terrorist attack which caused me physical and/or psychological harm.

4. If you answered item #3 with a "yes," please rate the severity of that incident on a scale of 1-10 (lowest to highest).

If you answered "yes" to either items #1 or #3, please briefly describe your experience below:

Appendix G: Terrorism-Related Anxiety

State subscale of the State-Trait Anxiety Inventory (Spielberger et al., 1970)

A number of statements which people have used to describe themselves are given below.

Read each statement and then circle the appropriate letter to the right of the statement to

indicate how worried you feel right now about becoming a victim of a terrorist attack.

N = not at all

S= somewhat

M= moderately so

V= very much

How worried do you feel right now about possibly becoming a victim of a terrorist

attack in the future?

1. I feel calm

2. I feel secure

3. I am tense

4. I feel strained

5. I feel at ease

6. I feel upset

7. I am worrying over possible misfortunes

8. I feel satisfied

9. I feel frightened

10. I feel comfortable

11. I feel self-confident

12. I feel nervous

13. I am jittery

14. I feel indecisive

15. I am relaxed

16. I feel content

17. I am worried

18. I feel confused

19. I feel steady

20. I feel pleasant

Appendix H: Terrorism-Related Anxiety

Anxiety Thermometer (Houtman & Baker, 1989)

On a daily basis, how much do you worry about terrorism affecting your life or those of

your loved ones?

1		2	3	4	5	6	7	8	9	10

Not at all   Extremely

Worried   Worried

Appendix I: Demographic Form

Gender: _____ Female   _____ Male

Age: _____

Race/Ethnicity: _____ African-American   _____ Hispanic
                                 _____ Asian-American   _____ Native American
                                 _____ Biracial   _____ Other
                                 _____ Caucasian

Nationality: _____ American
                                 _____ Other (please write in) _____

Country of Birth: _____ U.S.A.
                                 _____ Other (please write in) _____

Religion: _____ Christian
                                 _____ Jewish
                                 _____ Muslim
                                 _____ Buddhist
                                 _____ Other

Sexual Orientation: _____ Heterosexual
                                 _____ Homosexual
                                 _____ Bisexual

Marital Status   _____ Single
                                 _____ Married
                                 _____ Divorced
                                 _____ Partner deceased

Household Income   _____ Under $20,000
                                 _____ $20,000 - $40,000
                                 _____ $40,000 - $60,000
                                 _____ $60,000 - $80,000
                                 _____ $80,000 - $100,000
                                 _____ $100,000 - $150,000
                                 _____ $150,000 - $200,000
                                 _____ $200,000 - $250,000
                                 _____ $250,000 - $300,000
                                 _____ $300,000-$400,000
                                 _____ $400,000-$500,000
                                 _____ Over $500,000

Level of Education   _____ No degree
(highest completed)   _____ High School / GED
                                 _____ 2-year college
                                 _____ 4-year college (bachelor's degree)
                                 _____ Graduate

Location of Residence: _____ Washington, D.C.
                                 _____ County of residence (MD/VA)

Location of Employment: _____ Washington, D.C.
           _____ Maryland suburbs
           _____ Virginia suburbs

Type of Employment: _____ Federal Government
          _____ State Government
          _____ Private
          _____ Military

Newspaper Exposure: _____ Read 0 newspapers/day
          _____ Read 1 newspaper/day
          _____ Read more than 1 newspaper/day

TV Exposure: _____ Watch under 30 minutes of news programming/day
          _____ Watch 30-60 minutes of news programming/day
          _____ Watch 1-2 hours of news programming/day
          _____ Watch over 2 hours of news programming/day

Radio Exposure: _____ Listen to under 30 minutes of news programming/day
          _____ Listen to 30-60 minutes of news programming/day
          _____ Listen to 1-2 hours of news programming/day
          _____ Listen to over 2 hours of news programming/day

Internet Exposure   _____ I don't look at any news internet sites/day
(CNN, NY Times, etc) _____ I look at 1 news internet site/day
(includes multiple hits of _____ I look at 2 news internet sites/day
the same site, e.g. if you go _____ I look at 3 news internet sites/day
to CNN site twice daily, _____ I look at 4 or more news internet sites/day
that counts as 2)

Please answer (yes/no) to following two questions:

I was close to someone who perished or was injured in 9/11   _____ (y/n)

I was close to someone who perished or was injured in the sniper attacks _____ (y/n)

Rate each statement based on how well it describes you, using a scale of 1 (does not to describe me at all)

to 7 (completely describes me)

It is easy for me to become emotionally close to others. I am comfortable depending on others and having others depend on me. I don't worry about being alone or having others not accept me.

1   2   3   4   5   6   7

I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me.

1   2   3   4   5   6   7

I want to be completely emotionally intimate with others, but I often find that others are reluctant to get as close as I would like. I am uncomfortable being without close relationships, but I sometimes worry that others don't value me as much as I value them.

1   2   3   4   5   6   7

I am uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I worry that I will be hurt if I allow myself to become too close to others.

1   2   3   4   5   6   7

_____

Please use the space below to describe anything you have found helpful in minimizing your worries about

terrorism (optional):

Appendix J: E-mail Instructions

Referral E-Mail (for e-mail addresses)

For my dissertation, I am conducting a web-based survey. As an identified friend or colleague, you can assist me in recruiting participants for this study. The only requirement for participating is that the individual lives or works in the Washington, D.C. area. This area is defined as the District of Columbia and its adjoining counties. The study is brief, and should only take about 15-20 minutes to complete. Participants are eligible for one $100 raffle prize. Please send me the e-mail addresses of 5-10 (or more) individuals that you think would be interested in participating. I am attempting to recruit a heterogeneous sample, so attention to diversity (e.g. gender, racial, ethnic, socioeconomic status, level of education) is appreciated but not required. Unfortunately, for research validity reasons, I cannot ask you to participate, nor can I disclose the topic of the study in this e-mail. However, once you have forwarded me the e-mail addresses, I would be happy to tell you what the study is about if you are interested.

Please do not forward this message to others, as I am keeping track of the number of people who are recruited for this study.

Recruitment E-Mail (for participants)

You have been identified by a family member, friend or colleague (John Doe) as someone who would be interested in participating in a brief internet study on terrorism. This study is being conducted in affiliation with the counseling psychology program at the University of Maryland. The only requirement for participating is that you live or

work in the Washington, D.C. area (the District of Columbia and adjoining counties).

The study should only take about 15-20 minutes to complete. As an incentive for

participating, one $100 prize will be raffled to one individual from the pool of

participants. The results are anonymous and strictly confidential.

If you are interested in participating, please click on the following link (or copy and paste

it into your internet browser):

www.terrorismstudy.com

Password: washington

* Please note: On the first page of the website, you have the option of typing in your e-

mail address. E-mail addresses are used only to link incomplete questionnaires (e.g.

when someone logs in more than once to complete the questionnaire) and/or make

participants eligible for the raffle. E-MAIL ADDRESSES ARE NOT MATCHED

WITH COMPLETED QUESTIONNAIRES. Thus, your responses remain anonymous

and confidential.

** Please do NOT forward this message – recruitment e-mails are restricted to a limited

sample of individuals

Appendix K: Cover Page of Web Site

Thank you for agreeing to participate in this study on terrorism in the Washington, D.C. area. Following this page, you will fill out a brief questionnaire which should take approximately 15-20 minutes to complete.

Please keep in mind the following while completing the questionnaire:

- Click only one box per item

- You do not have to finish the questionnaire in one sitting. You may come back to this web site at another time and finish the questionnaire from the point you left off. However, this questionnaire is brief, and you are encouraged to finish it in one sitting if at all possible.

    o Please note: If you complete 25 items and log off, you will start back at item #1 when you log back on. Scroll down to item #26 and resume the questionnaire.

- Responses are anonymous and confidential

All participants who complete the questionnaire will be entered into a raffle for one $100 prize. The raffle will be administered at the conclusion of the study.

THANK YOU FOR PARTICIPATING!

Please click on the button below to begin the questionnaire. Clicking on this button certifies that you give your informed consent for participating. At the end of the study, you will be directed to a page which will describe the study in further detail.

Appendix L: Bivariate Correlations of Supplemental Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Terrorism-Anxiety (STAI-S measure)	---	.59**	.20**	-.19*	.20**	-.14	-.13	-.07	-.12	.07	-.06	.04	-.03	-.10	-.02	.13	.12
2. Terrorism-Anxiety (anxiety thermometer)	.59**	---	.13	-.11	.11	-.10	-.10	.04	-.03	-.11	.05	.03	-.06	-.02	-.02	-.00	.04
3. Previous Terrorism Trauma	.20**	.13	---	-.12	.01	.01	.02	.00	-.08	-.10	.03	.32**	.27**	.02	.05	-.05	.01
4. Age	-.19*	-.11	-.12	---	.05	.64**	.23**	.20*	.09	.05	-.37**	-.07	-.07	.14	-.16*	-.21**	-.30**
5. Gender	.20**	.11	.01	.05	---	-.02	.04	-.05	.04	.12	-.32**	-.08	-.10	.01	-.20*	-.11	-.02
6. Income Level	-.14	-.10	.01	.64**	-.02	---	.19*	.13	.10	.11	-.18*	.02	-.05	.11	-.19*	-.04	-.19*
7. Education Level	-.13	-.10	.02	.23**	.04	.19*	---	.14	-.00	.12	.01	.09	-.05	.22**	.02	-.11	.21**
8. Newspaper Expsre	-.07	.04	.00	.20*	-.05	.13	.14	---	.06	-.07	.16	.02	.02	.07	.16	-.01	-.16*
9. TV Exposure	-.12	-.03	-.08	.09	.04	.10	-.00	.06	---	.12	-.01	.17*	-.08	-.14	.09	-.18*	-.02
10. Radio Exposure	.07	-.11	-.10	.05	.12	.11	.12	-.07	.12	---	-.16	-.08	-.06	.01	.01	.01	.02
11. Internet Exposure	-.06	.05	.03	-.37**	-.32**	-.18*	.01	.16	-.01	.16	---	.05	.11	-.10	.03	.18*	.02
12. Close to 9/11 victim	.04	.03	.32**	-.07	-.08	.02	.09	.02	.17*	-.08	.05	---	-.02	.14	-.10	-.02	.02
13. Close to sniper victim	-.03	-.06	.27**	-.07	-.10	-.05	-.05	.02	-.08	-.06	.11	-.02	---	-.01	.00	-.03	-.07
14. Secure Attachment	-.10	-.02	.02	.14	.01	.11	.22**	.07	-.14	.01	-.10	.14	-.01	---	-.17*	-.20**	-.46**
15. Dismissing Attach.	-.02	-.02	.05	-.16*	-.20*	-.19*	.02	.16	.09	.01	.03	-.10	.00	-.17*	---	.12	.16
16. Preocc. Attachment	.13	-.00	-.05	-.21**	-.11	-.04	-.11	-.01	-.18*	.01	.18*	-.02	-.03	-.20**	.12	---	.50**
17. Fearful Attachment	.12	.04	.01	-.30**	-.02	-.19*	.21**	-.16*	-.02	.02	.02	.02	-.07	-.46**	.16	.50**	---

* p < .05   ** p = or < .01

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