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The Influence of Early Maladaptive Schemas on Sex Differences in the Development of
PTSD Symptomatology

A Dissertation Presented for
the Doctor of Philosophy Degree

The University of Tennessee, Knoxville

Vanessa Anne Handsel
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ABSTRACT

The relationship between gender, trauma, Early Maladaptive Schemas (EMS), and PTSD symptomatology was examined in a non-clinical sample of college students. Participants were administered self-report measures and clinical interviews to assess for PTSD and EMS. Women were found to report significantly more PTSD symptomatology than men. Participants who met the cutoff score on the PCL for a diagnosis of PTSD scored significantly higher on all 18 EMS than those who did not meet the cutoff score. Women were significantly higher than men on the EMS of failure, mistrust-abuse, vulnerability, negativity-pessimism, abandonment, subjugation, self-sacrifice, and approval-seeking. Bootstrapping mediation analyses were conducted to examine whether the 18 EMS mediated the relationship between trauma and PTSD, controlling for gender. Mistrust-abuse, vulnerability to harm or illness, unrelenting standards, abandonment, subjugation, and self-sacrifice emerged as significant mediators. In the multiple mediation model, only the EMS of abandonment emerged as unique. A second test of multiple mediation was performed to assess the extent to which EMS mediated the relationship between gender and PTSD symptomatology. There was significant overall mediation by the presence of mistrust-abuse, failure, vulnerability, negativity-pessimism, abandonment, subjugation, and self-sacrifice, though vulnerability emerged as unique. All EMS are associated with PTSD symptomatology, but only specific EMS mediated the relationship between trauma, gender, and PTSD. Many of these EMS are higher in women, possibly making them more vulnerable to the disorder. Clinical implications and directions for future research are discussed.

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INTRODUCTION

Overview

Post Traumatic Stress Disorder (PTSD) has received a great deal of attention in the last several decades, as increasing attempts are made to more accurately understand how individuals respond to traumatic events. However, there is a relative dearth of research to adequately explain group differences in terms of disparities between those who develop PTSD after a trauma and those that do not. More specifically, more research is needed to explain the disproportionate amount of females that develop PTSD compared to males. The extant literature on trauma suggests that the key to understanding these discrepancies may lie in individual cognitive differences. There is promising research in this area which indicates that negative beliefs about the self and the world are associated with PTSD, with these types of cognitions being found more readily in female populations. Beliefs about the self and world are recognized in the literature as schemas, but are not always researched consistently as such (e.g., they can be referred to as negative cognitions, schemas, world assumptions, etc.). Jeffrey Young's Early Maladaptive Schemas (EMS) have been found to be psychometrically sound constructs that represent varying types of cognitions about self, others, or the world. No studies have specifically examined the connection between Early Maladaptive Schemas and Post Traumatic Stress Disorder. Moreover, there is very little research as of yet examining the relationship between gender, EMS, and PTSD. The goal of this study was to examine these relationships and to expand the literature on EMS, PTSD, and gender differences therein. An overview of the disorder and explanatory theories follows, as well as a rationale and description of the proposed study.

Post Traumatic Stress Disorder

Individuals who have experienced a traumatic event often develop debilitating symptoms as a result of their experience. While the problematic emotional aftermath of trauma has been a widely recognized occurrence for hundreds of years, it has only been acknowledged as a specific psychological disorder in the last several decades. The third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) initially introduced PTSD as an anxiety disorder (American Psychiatric Association, 1980). Prior to this, many post-trauma symptoms were conceptualized in a variety of ways. For example, the first addition of the DSM (APA, 1952) contained the term “stress response syndrome” which was listed as a component of “gross stress reactions,” while the second edition (APA, 1968) listed trauma-related disorders under “situational disorders.” Early attempts to classify maladaptive responses to traumatic events date back to the American Civil War (“soldier’s heart”) or the First World War, where it became apparent that men who had experienced combat suffered from “shell shock,” or “battle fatigue” (Vaisrub, 1975). Fortunately, PTSD has been recognized as a legitimate emotional disorder within the last thirty years, with much of the impetus for further study stemming from the experience of Vietnam veterans (“post-Vietnam syndrome”), as approximately 19 percent of Vietnam veterans experienced PTSD following the war (Beals et al., 2002; Card, 1987; Dohrenwend, 2006; Long, MacDonald & Chamberlain, 1996). Prior to its inclusion in the DSM-III, PTSD was often incorrectly viewed as cowardice or personal weakness before finally being understood as a psychological disorder. Within the last several decades PTSD has received much empirical attention, although further research is still needed to more fully understand the disorder.

Criteria

According to the American Psychiatric Association's current conceptualization of PTSD, criteria for the disorder must consist of exposure to a traumatic event, which involves real or threatened death, serious injury, or threat to the physical integrity of oneself or others, and results in intense fear, helplessness, or horror (criterion A) (APA, 2000). Following exposure to the traumatic event, an individual who meets criteria for PTSD will experience one or more symptoms from each of three symptom clusters, including intrusive recollections or reexperiencing symptoms (criterion B), avoidance or numbing (criterion C), and psychological hyper-arousal (criterion D). The disturbance must persist for more than one month and must cause significant impairment in functioning (APA, 2000).

The reexperiencing symptoms must manifest in at least one of four ways (APA, 2000). These symptoms are disturbing and invasive for the individual experiencing them, since they cannot be controlled in terms of content and frequency, and they require the individual to reexperience a barrage of negative emotions (Janoff-Bulman, 1992; Resick, Monson, & Rizvi, 2008; Resick & Schnicke, 1992). Intrusive memories may appear "out of the blue," with no apparent cues to incur them (APA, 2000). It may also be possible for the individual to experience flashbacks, which are reenactment experiences that cause the individual to feel as if the traumatic event is happening again in real time (APA, 2000; Resick, Monson, & Rizvi, 2008). Another type of criterion B symptom may be experienced as nightmares, which are conceptualized as intrusive memories of the traumatic event that occur during sleep (APA, 2000). Finally, the individual may experience intense psychological or physiological responses when exposed to stimuli

associated with the traumatic event. This may include symptoms such as terror, disgust, shame, depression, and/or increased heart rate, rapid breathing, and sweating (APA, 2000). The cues that trigger the reexperiencing symptoms may be overt, such as a loud sound that may imitate a gunshot, or more inconspicuous, as in situations seemingly unrelated to the trauma that evoke feelings of vulnerability or danger (APA, 2000).

Criterion C symptoms represent efforts to avoid thoughts and feelings related to the trauma. There are differing opinions as to why avoidance symptoms occur. Creamer, Burgess, and Pattison (1992) propose that they are the result of an individual attempting to evade the process of reexperiencing the traumatic event. However, studies utilizing factor analysis of PTSD symptomatology have found that, while avoidance is indeed associated with reexperiencing symptoms, numbing symptoms often manifest in response to hyperarousal (Buckley, Blanchard, & Hickling, 1998; Resick et al., 2008; Taylor, Kuch, Koch, Crockett, & Passey, 1998). Avoidance behavior tends to be cyclical in nature due to the fact that evasion of stimuli and memories associated with the trauma results in less likelihood of experiencing negative emotion associated with those cues because there is nothing to elicit it (Resick et al., 2008). This, in turn, serves to reinforce and increase avoidance behavior, which can profoundly inhibit the ability of an individual to live a normal life. Numbing symptoms also present in a similar fashion, as they are enacted to prevent the individual from experiencing distressing feelings that result from intrusive memories (Astin, Layne, Camilleri, & Foy, 1994; Resick et al., 2008; Resick & Schnicke, 1992). Numbing of aversive emotions associated with the traumatic event, may result in a more widespread detachment and numbing of emotion in general. Frequently, individuals suffering from PTSD report that they experience no

strong emotions whatsoever, which has a significant negative impact on their ability to create and maintain relationships, plan for the future, and function in their daily lives (Resick et al., 2008). In order to meet criterion for a diagnosis of PTSD, at least three types of avoidance or numbing behaviors are required (APA, 2000).

Finally, criterion D symptoms reflect the heightened and prolonged state of physiological arousal, or hypervigilance, that mimic the “fight or flight” condition elicited by the traumatic event. While this state of being is adaptive during a crisis as it primes the body for fighting for survival or a speedy retreat to safety, individuals with PTSD maintain this state even when they are not faced with an immediate perceivable threat (Resick et al., 2008). This level of intense physiological arousal can negatively affect an individual’s health, and can also result in side-effects such as sleep problems, exhaustion, irritability, difficulty concentrating, or increased startle response (i.e., an overreaction to a stimulus) (Kulka et al., 1990; Resick et al., 2008). At least two or more of the hyperarousal symptoms are required to meet criteria for a PTSD diagnosis (APA, 2000).

There is contention in the literature as to whether or not the current diagnostic structure of the disorder is entirely accurate or appropriate. Multiple studies have factor analyzed PTSD symptoms, all of which called into question the validity of the disorder’s current three factor structure (Amdur & Liberson, 2001; Asmundson et al., 2000; Buckley et al., 1998; King, Leskin, King, & Weathers, 1998; Simms, Watson, & Doebbeling, 2002; Smith, Redd, Duhamel, Vicksberg, & Ricketts, 1999; Taylor et al., 1998). Some have called for the criteria to be further divided into four categories, separating numbing from avoidance symptoms in order to make numbing a category unto

itself (Resick et al., 2008). Another suggestion called forth by recent research is for a two-factor structure, which would combine arousal and numbing as one category and pair intrusions and avoidance as another (Resick et al., 2008). There have also been suggestions that it is inaccurate to conceptualize intrusive content as both images and thoughts without taking care to distinguish between the two. Ehlers et al. (2002) found that most intrusive content is primarily sensory and especially visual in nature, which is separate from cognitions. There have also been numerous studies that have examined moralistic components of PTSD, such as guilt and shame. Despite the fact that there is growing evidence suggesting that guilt and shame play significant roles in the development and maintenance of the disorder, these constructs are not currently included in the diagnostic criteria (Andrews, Brewin, Rose, & Kirk, 2000; Kubany et al., 1995; Kubany, Haynes, Abueg, & Manke, 1996; Leskela, Dieperink, & Thuras, 2002).

Prevalence

Post Traumatic Stress Disorder is a pervasive problem that affects millions of individuals of all ages and races. The National Center for PTSD (2010) reports that approximately 60 percent of men and 50 percent of women will experience a traumatic event in their lifetime and, of those who do experience a traumatic event, 8 percent of the U.S. population will develop PTSD. Within the group of individuals who experience trauma, women are two times more likely to develop PTSD than men (10% of women versus 5% of men) (NCPTSD, 2010). While research has demonstrated that women are more likely to develop PTSD symptomatology than men, more research is needed to examine why this disparity exists. According to a recent large National Comorbidity

Survey, roughly 7.7 million American adults report that they have PTSD (Kessler, Chiu, Demler, Merikangas, & Walters, 2005b). Median age of onset is 23 years, although the disorder can develop at any age (Kessler, Berglund, et al., 2005a). A landmark epidemiological study by Norris (1992) examined the frequency and impact of 10 potentially traumatic events in a sample of 1,000 adults. The sample was comprised of individuals drawn from four southeastern U.S. cities and consisted of 50% African Americans, 50% Caucasians, 50% male and 50% female participants, and was evenly divided among young, middle-aged, and older adults. The majority of the cross-sectional sample reported having experienced at least one traumatic event in their lifetime (69%), while one fifth of the sample (21%) reported that they had experienced a traumatic event within the past year. Events assessed included robbery, physical assault, sexual assault, fire, other disasters, other hazards, tragic death, motor vehicle crashes, and combat. It was found that, while tragic death was reported most often, sexual assault resulted in the highest reported rates of PTSD for men and women, yet motor vehicle accidents were the most aversive combination of frequency and impact. Caucasian males reported higher lifetime exposure, and young adults reported the highest rate of past-year exposure. Although African American men reported the highest impact of events (e.g., they were the most vulnerable to effects of traumatic events), young people reported the highest rates of PTSD (Norris, 1992).

Kessler and colleagues (1995), in the first U.S. National Comorbidity Survey to assess the effects of traumatic events, collected a sample of 5,877 individuals (2,812 men and 3,065 women). The survey included 12 categories of traumatic stressors, of which they found most people had experienced at least one. Overall, they found that 20.4% of

women and 8.2% of men were likely to develop PTSD after experiencing a trauma. For both men (65%) and women (46%), rape emerged as the type of event identified as most traumatic by those who developed PTSD. The probability of males developing PTSD based on other self-identified worst traumas was 39% for combat exposure, 24% for childhood neglect, and 22% for childhood physical abuse. For females, this probability was 49% for physical abuse in childhood, 33% for threat with a weapon, 27% for sexual molestation, and 21% for a physical attack.

Although not traditionally one of the most commonly reported traumatic stressors, combat is becoming an increasingly more stated source of PTSD, as more and more veterans return home from the current wars in Iraq and Afghanistan. Combat-related PTSD was initially studied in the aftermath of the Vietnam War. Results of The National Vietnam Veterans Readjustment Survey were published in 1990 and reassessed in 2006 (NVVRS; Kulka et al., 1990; Dohrenwend et al., 2006). In the initial NVVRS, Kulka and colleagues (1990) found that, of the 8 million people who served in the Armed Forces during the Vietnam War, 31% of male and 27% of female veterans met criteria for a diagnosis of PTSD at some point in their lives as a result of combat, while 15% of males and 9% of females met PTSD criteria at the time of the study, which was more than a decade after the war ended. Recent re-evaluation of the NVVRS data using more conservative criteria included only cases that could be verified via historical record (Dohrenwend et al., 2006). Based on this new criteria, Dohrenwend and colleagues (2006) did find slightly lower rates of PTSD, as 18.7% of veterans met lifetime criteria for PTSD and 9.1% met criteria for current PTSD. However, they note that these rates

represent minimum likelihood and that they found very little falsification of events, as well as a strong relationship between degree of trauma exposure and rates of PTSD.

Current efforts to assess combat-related PTSD are focused on the wars in Iraq and Afghanistan. These efforts are novel in that they represent the first time that PTSD has been studied during a war, rather than in its aftermath (Hoge et al., 2004; Hoge, Auchterlonie, & Milliken, 2006). One study by Hoge and colleagues (2004) assessed Army and Marine soldiers pre- and post-deployment to Iraq and Afghanistan. They found a higher degree of mental health problems among those who had versus those who had not deployed and also found a higher preponderance of problems among those who deployed to Iraq as opposed to Afghanistan. A linear relationship was found between the number of reported firefights and PTSD severity. Moreover, being wounded or otherwise physically injured was related to increased PTSD symptomatology. Whereas 9% of service personnel exceeded the PTSD criteria cutoff prior to deployment, the post-deployment assessment indicated that 11.5% of those deployed to Afghanistan and 18-20% of those deployed to Iraq exceeded the cutoff (Hoge et al., 2004). Given that the military now regularly screens personnel for post-deployment PTSD, Hoge, Auchterlonie, and Milliken (2006) conducted a one year population-based study on Army and Marine soldiers who had been deployed to Iraq, Afghanistan, and other locales. This study supported results of Hoge's earlier study, as a higher degree of mental health problems were reported by individuals who had deployed to Iraq, and there was yet again an association between amount of combat exposure and PTSD. In this study, more women (23.6%) than men (18.6%) reported mental health concerns, but the study did not take into account preexisting traumas or PTSD (Hoge et al., 2006).

Regardless of the specific type of stressor, PTSD is a pervasive and debilitating disorder which affects millions of individuals. Since the 1970s, when increasing numbers of women began to be more vocal about rape experiences and veterans began to return from Vietnam, researchers have recognized the need to develop a thorough understanding of the disorder to more effectively treat it (Resick et al., 2008).

The Evolution of Theoretical Models of PTSD

Numerous attempts have been made to develop theoretical models as to why and how PTSD develops. The early theories assumed a fear network approach, while later theories began to examine meaning (e.g., cognitive aspects of the disorder, such as schemas). Learning theory such as Mowrer's two-factor theory (1947) of classical and operant conditioning was initially employed as an explanatory framework for posttraumatic stress (Becker, Skinner, Abel, Axelrod, & Cichon, 1984; Holmes & St. Lawrence, 1983; Keane, Zimering, & Caddell, 1985; Kilpatrick, Veronen, & Best, 1985; Kilpatrick, Veronen, & Resick, 1982). It was proposed that classical conditioning could account for the fact that trauma victims responded to trauma-related stimuli with intense distress and fear, while operant conditioning could account for persistent fear and avoidance symptoms even when no traumatic stressor (i.e., unconditioned stimulus) was present or recurring. Specifically, conditioned stimuli (e.g., trauma memory or other cues) elicit fear and anxiety (i.e., conditioned emotional response) and are thus avoided, resulting in reduced fear and anxiety. This negative reinforcement results in behavior that makes it impossible to extinguish the learned connection between the trauma and negative emotions associated with it because the individual never lets themselves

experience the cues, ensuring that no corrective experience (e.g., counter-conditioning or desensitization) is possible. The explanation of PTSD proposed by learning theory can account for much of the symptomatology. However, it is unable to sufficiently explain intrusion symptoms.

In response to this, Foa, Steketee, and Rothbaum (1989) employed the information processing theory of anxiety developed initially by Lang (1977), to create the information processing theory of PTSD. Foa and colleagues posited that, following a trauma, a fear network was established in memory that increases escape and avoidance behavior. Information processing theory holds that stimuli, response, and meaning are all incorporated into a mental fear network, so that anything associated with the trauma elicits the fear structure or fear schema, resulting in avoidance behavior. The fear network is triggered by traumatic cues or stimuli associated with the trauma, which in turn causes information related to the trauma to enter consciousness in the form of intrusive thoughts and feelings (intrusive symptoms of PTSD). The authors maintain that behavior designed to avoid the activation of the fear network is the source of avoidance symptoms of PTSD. It has also been proposed that the fear structure may be perpetually activated in individuals with PTSD, rendering their interpretation of events as more threatening even when there is no reason to believe there is danger (Chemtob, Roitblat, Hamada, Carlson, & Twentyman, 1988). Information processing theory has led to the idea that recurring exposure to the traumatic memory in a therapeutic environment can help trauma victims to change their associations as they become habituated to the traumatic memory. This is the basis for Foa and colleague's Exposure Therapy for PTSD (Foa, Rothbaum, Riggs, & Murdock, 1991). Habituation of fear results in alteration of

the fear structure, which allows individuals with PTSD to subsequently alter meanings and self-statements associated with the traumatic event, as well as to decrease the degree to which they generalize their fear (Foa, Rothbaum, Riggs, & Murdock, 1991; Rothbaum & Foa, 1992). While information processing is able to explain much of PTSD symptomatology, it does not place much emphasis on the meaning aspects of the fear structure.

Many theories have arisen to more fully account for the impact that a traumatic event has on personal beliefs and meaning. Thus, while early PTSD theories focused on the fear network, subsequent models began to take more content- rather than process-focused approaches. The content studied in this approach is now widely referred to in the literature as schemas, although they are not always explicitly defined as such (e.g., Horowitz's "completion tendency" or Janoff-Bulman's "world assumptions"). These schema theories are primarily social-cognitive in nature and, while they may include information processing, they also examine the ways in which trauma affects belief systems and how traumas are integrated into individuals' pre-trauma view of the world (Resick et al., 2008). In the PTSD literature, the term schema refers to core schemas, which are generally subconscious global patterns of beliefs about the self, others, and the world that are presumably formed in childhood as a result of interaction with significant others or formative events (Beck, 1995; McGinn & Young, 1996). Core schemas are believed to serve as the foundation for an individual's belief system, which subsequently governs more immediate beliefs such as rules, attitudes, underlying assumptions, and conditional beliefs. Perception of events is also determined by core schemas. Given that schemas can be either positive or negative, rigid or flexible, information can either be

assimilated in accordance with one's schemas or not. It is the failure of information, either in memory or newly gathered from experience, to integrate into one's schemas that serves as the basis for much of the schema-based theories of PTSD.

One of the earliest social-cognitive theorists, Horowitz (1986), hypothesized that information is processed according to a "completion tendency," which leads to the desire for new information to be readily integrated into extant beliefs. Horowitz believed that information was stored in active memory until processing was complete (Horowitz, 1986). However, information related to a trauma is not easily processed given that it is painful and difficult to integrate into one's pre-existing view of the world. This model posits that individuals with more rigid core schemas will have a more difficult time integrating and processing incongruent information. The desire to escape or avoid psychological pain by avoiding processing causes defense mechanisms to activate, resulting in numbing and avoidance behavior. According to Horowitz, individuals with PTSD will experience both intrusive unprocessed thoughts about the trauma and avoidance behavior until the information is finally processed and the experience is resolved. While Horowitz's theory is important in that it serves as the keystone for other schema-based theories of PTSD, the model fails to clearly define pre-existing schema structure or the specific way it affects the processing of information (Dalglish, 1999).

Other content-based social-cognitive theories focus on the fact that, after experiencing a trauma, beliefs about the world and oneself are not only insufficiently integrated but are disproven or shattered. Constructivist theories maintain that individuals make their own internal representations of the world and themselves, integrating new information into their self-made and subjective meaning structures

(Janoff-Bulman, 1985, 1992; Mahoney & Lyddon, 1988; McCann & Pearlman, 1990; McCann, Sakheim, & Abrahamson, 1988). In the aftermath of a trauma, constructivists believe that the inability to flexibly alter initial beliefs to encompass one's experience is the source of PTSD, as information that cannot be integrated into one's internal conceptualization of the world and self result in that information posing an intrusive threat that is to be avoided. For example, Janoff-Bulman (1985) proposes that extreme and rigid core schemas about invulnerability of oneself or the world may be "shattered" as a result of a trauma that challenges these assumptions. As a result, an individual will slide from one absolute polarity to the other (e.g. moving from "invulnerable" to "vulnerable", or from "meaningful" to "meaningless"), which results in confusion, avoidance, and hyperarousal, as well as intrusive cognitions (Janoff-Bulman, 1985, 1992). In order to successfully recover from a trauma, according to constructivist theory, the trauma must be reinterpreted or rescripted so that it can be understood in a way that is not at odds with pre-trauma beliefs or the new beliefs that resulted post-trauma (Janoff-Bulman, 1985). Consequently, rigidity of pre-trauma beliefs also has been examined by social-cognitive theorists. It is hypothesized that pre-existing beliefs that are extreme, whether they be positive or negative, are more likely to lead to severe PTSD as opposed to more flexible beliefs that are less polarized (Foa, 1996; McCann & Pearlman, 1990; Resick & Schnicke, 1992). This is likely due to the fact that extreme positive or negative beliefs are less malleable, meaning that it is markedly more difficult to integrate new or incongruent information into beliefs of this type. Rigid beliefs are also more narrow and specific, making it less likely that the event will be able to fit their mold or that the mold will be shattered. Several theorists have examined beliefs of this type, such as Foa

(1996), who focused on beliefs about predictability and controllability of trauma. Similarly, McCann and Pearlman (1990) examined beliefs they considered to be theoretically related to the experience of trauma such as safety, trust, control/power, esteem, and intimacy. They found that these types of cognitions could be either validated or contradicted as a result of experiencing a trauma, both of which could be difficult to accept.

Another important advancement in the literature concerning content of post-trauma cognitions and schema content is the work of Resick and Schnicke (1992, 1993), who posit that fear is not the only important emotion in PTSD. They hypothesized that other emotions, such as anger and grief may be primary post-trauma feelings alongside fear, while secondary emotional reactions like shame may stem from inaccurate interpretations of the traumatic event. For instance, when an individual experiences an attack, they may feel intense fear or helplessness, but when they think about the incident later they may make secondary attributions that are separate from the event itself (e.g., blaming themselves for the attack, shame or embarrassment that it occurred). Understanding the role that secondary affect plays in the development and maintenance of PTSD is important for several reasons. Social-cognitive theorists believe that, in order to fully process traumatic information, irrational cognitions and the accompanying affects about the trauma, self, and the world must be accessed and challenged (Resick et al., 2008). Once the primary beliefs and affect begin to be integrated into memory, secondary affect will quickly follow suit. This model suggests that prior learning theories of PTSD did not fully capture all aspects of the disorder. Learning theories, which proposed that PTSD could be successfully treated via behavioral methods that result in

habituation or extinction, are challenged by the social-cognitive approach. Success of treatment approaches such as stress inoculation training without trauma exposure exercises (Foa, Rothbaum, Riggs, & Murdock, 1991; Foa et al., 1999) or pure cognitive therapy (Ehlers et al., 2003) in treating PTSD is evidence that habituation and extinction, while effective, are not the only mechanisms of change (Resick et al., 2008). Moreover, Resick and Schnicke's work (1992, 1993) represents an important progression in the content- versus process-oriented literature. It signifies the importance, not only of the relationship between trauma and its ability to mesh with pre-existing beliefs about the world or self, but also of the impact that this then has on subsequent beliefs.

More recently, Ehlers and Clark (2000) have proposed a cognitive model for PTSD that addresses the persistent nature of the disorder. They note that PTSD is categorized as an anxiety disorder, which by nature mandates that anxiety or distress emanates from appraisals in regard to an imminent threat. With PTSD, the trauma has already occurred, leaving only the memory of the event as the most salient threat. Ehlers and Clark (2000) suggest that persistent PTSD will occur when individuals process the event and its sequelae in a manner that causes them to characterize the event as a grave and present threat. Individuals with this type of attributional style lack the ability to conceptualize the traumatic event as a discrete, time-limited event and view the trauma as having negative global consequences on their future (Ehlers & Clark, 2000).

This type of processing is attributed to individual differences in appraisal of both the trauma and its sequelae, as well as individual differences in the way in which the event is remembered and its relation to other autobiographical memories (Ehlers & Clark, 2000). Specifically, the sense of threat is greatest in individuals who appraise a traumatic

event and its aftermath in an excessively negative manner, and who suffer a disturbance in their autobiographical memory as a result of insufficient elaboration or contextualization, strong associative memory, and strong perceptual priming (Ehlers & Clark, 2000). The negatively appraised threat imposed by the trauma and its sequelae can be perceived as internal (e.g., threat to sense of personal capability/acceptability and/or ability to achieve life goals) or external (e.g., the world is dangerous). The threat appraisal is overgeneralized, meaning that individuals perceive things as being more dangerous than they actually are. They may also overestimate the probability that the perceived threat will occur again, and/or underestimate their ability to cope with events in the future. In terms of memory of the event, Ehlers and Clark (2000) propose that, due to unwillingness to process information that is difficult or incongruent with extant beliefs, traumatic memories are not readily integrated into one's life story and are thus not easily recalled intentionally. Most memories are woven into one's autobiographical memory structure so that they can easily be recalled based on thematic content and time periods (Conway & Pleydell-Pearce, 1997; Ehlers & Clark, 2000). Another memory retrieval method of a more sensory and inconspicuous nature occurs when memories are elicited via exposure to a stimulus that triggers them. The elaboration inherent in the autobiographical method makes it easier and more likely to be used, which is believed to inhibit the need for the sensory method (Conway, 1997b; Ehlers & Clark, 2000; Markowitsch, 1995). According to the cognitive model of PTSD, traumatic information is insufficiently elaborated and integrated into autobiographical memory; resulting in difficulty with retrieval, lack of context in terms of place and time (which exacerbates the sense of an impending rather than past threat), inadequate connections to positive post-

trauma information (e.g., “I survived”), and enhanced susceptibility to traumatic cues (Ehlers & Clark, 2000). This explains the difficulty that people with persistent PTSD face in terms of their inability to intentionally recall a traumatic event, and also explains the seemingly intrusive nature of cognitions and emotions that are called forth as a result of exposure to traumatic cues. This cognitive model of PTSD proposes that the disorder is maintained via maladaptive cognitive and behavioral strategies (e.g., thought suppression, rumination, dissociation, avoidance) that increase symptoms, and serve to prevent alteration of the negative trauma appraisal and/or its memory structure. Ehlers and Clark (2000) note that extreme or rigid negative schemas have the potential to be confirmed by traumatic events, whereas extreme or rigid positive schemas may be “shattered” by them. However, in this model core schemas are considered background variables that are considered to be neither necessary nor sufficient for the development of PTSD, with their role considered as primarily more influential in symptom maintenance.

In light of the importance many cognitive models have placed on content and meaning, Foa and colleagues have since elaborated on their initial information processing theory (Foa et al., 1989), transforming it into a more integrated concept which is now referred to as emotional processing theory or the integrated model of PTSD (Foa & Kozak, 1986; Foa & Riggs, 1993; Foa & Rothenbaum, 1998; Tolin & Foa, 2002). Emotional processing theory still conceptualizes PTSD as a form of pathological fear that is maintained via a memory-based cognitive structure that inaccurately relays information about the stimulus-response-meaning relationship, which differs from cognitive structures in those that do not develop PTSD. However, this new model incorporates schemas alongside memory structure, as well as the range of post-trauma reactions to self

and others. The interaction between these three components is seen as the determining factor in the development of PTSD. As with prior schema theories, Foa and colleagues assert that PTSD is likely developed in part as a result of either confirmation of core negative schemas or shattering of positive schemas that were overvalued. Moreover, the integrated model proposes two types of negative beliefs that increase the risk that an individual will develop PTSD. The first type of belief concerns the idea that the world is a dangerous place, while the second concerns the belief that one is incompetent. However, as with other schema-based PTSD theories, this model fails to identify the specific core schemas that may predispose an individual to develop PTSD.

Nevertheless, this amendment to Foa's initial theory is representative of a larger shift in the literature, as theorists are beginning to move away from single explicit aspect models that deal exclusively with either networks or schemas and move towards multirepresentational models that can account for at least two or more representational elements (Dalgleish, 2004). The learning, social-cognitive, and cognitive theories each have contributed useful models for understanding PTSD. However, in an attempt to amalgamate the various PTSD theories, Brewin, Dalgleish, and Joseph (1996) proposed the dual-representation theory. Dual representation theory, which incorporates extensive cognitive research on memory, posits that trauma memory cannot be accurately described by the concept of a single emotional memory, but rather is part of a complex network of conscious and unconscious processing. Specifically, Brewin and colleagues (1996) argue that there are two types of memory (i.e., unconscious sensory and conscious autobiographical) and two types of emotional reactions (i.e., primary "fight or flight" and secondary meaning). According to the dual processing model, emotional processing of a

trauma occurs based on reconciling sensory memory data and primary emotional reactions, as well as processing autobiographical memories of the event to create emotional meaning (Brewin et al., 1996). More detailed descriptions of these types of memory and emotional reactions follow.

Memories that are consciously processed and can be deliberately retrieved are “verbally accessible memories” (VAMs), which tend to contain whole experience data (e.g., some sensory information, emotional and physical reactions, and personal meaning of the experience) (Brewin et al., 1996). VAMs also have the tendency to be selective, curtailed by narrowed attention and limited short-term memory capacity as a result of situational stress. The second type of memory, “situationally accessed memories” (SAMs), is unconscious and more extensive than VAMs (Brewin et al., 1996). However, SAMs are not readily accessible, as they are usually called forth automatically via sensory or cognitive cues. SAMs also cannot be easily changed, as they contain less subjective information and more sensory, physiological, and motoric data. When SAMs related to the trauma are cued, they are experienced as flashbacks and physiological arousal (Brewin et al., 1996).

According to dual representation theory, two types of emotional reactions can occur in response to a trauma. The first type of emotional reaction is a primary emotion such as fear or anger that is conditioned during the trauma, imprinted in the SAMs, and can be cued by sensory and physiological experiences that are associated with the trauma (Brewin, Dalgleish, & Joseph, 1996). Subsequent emotions that may be ascribed to the trauma based on subjective meaning and consequences of the experience are the second type of emotional reaction. Secondary emotions may include the primary emotions of

fear, anger, or helplessness, but also include emotions such as guilt, shame, embarrassment, and/or sadness (Brewin, Dalgleish, & Joseph, 1996).

Based on this understanding, Brewin and colleagues (1996) propose treatment for PTSD that encompasses therapeutic elements of both information processing and social-cognitive theories. In order for an individual with PTSD to successfully process the experience of a trauma, it is necessary for SAMs of the event to be elicited. When traumatic SAMs are activated in a therapeutic environment, new information can be encoded by pairing new bodily states and new cognitions with the cues, thereby helping to decrease negative emotions, attentional biases, and ease of access of the memories (Brewin, Dalgleish, & Joseph, 1996). Secondly, pre-trauma beliefs must be reconciled with the emotions experienced subsequent to the traumatic event. In order to regain a semblance of safety, self-esteem, control, and understanding, it may be necessary for an individual to reexamine his or her VAMs so as to integrate what happened to them with their personal beliefs about the world and self. This may be achieved by either reframing the memory of the event or reframing pre-trauma beliefs and expectations (Brewin, Dalgleish, & Joseph, 1996). Depending on which type of memories and emotional reactions are most problematic for a given individual, Brewin, Dalgleish, and Joseph (1996) suggest that exposure or cognitive therapy should be tailored to focus on whichever aspects of the trauma are most salient for a given client. Support for the dual-processing model is evidenced by the success that exposure and cognitive therapies have had independently.

Most recently, Dalgleish (2004) proposed a new multirepresentational model for PTSD by adapting the SPAARS model of everyday experience to PTSD. SPAARS

stands for four types of mental representation systems: Schematic, Propositional, Analogue, and Associative Representational (Dalglish, 2004). Dalglish (2004) describes the schematic level as representative of abstract information such as self and world schemas, while the propositional level contains readily accessible verbal information and meanings similar to VAMs (Dalglish, 2004). The analogue level is comprised of images stored in various sensory systems and is similar to SAMs (Dalglish, 2004). Finally, the associative representational level contains linkages that constitute networks that represent linkages among other types of representation, much like the fear structures proposed by emotional processing theory (Dalglish, 2004). The SPAARS model proposes that emotions can be generated from a trauma in two ways, the first of which occurs when an event is appraised as threatening based on its incompatibility with a life goal or schema (e.g., fear is elicited in response to a threat to survival), much like Ehlers and Clark's (2000) cognitive model. The second type of fear elicitation occurs via associative learning, like Foa and colleague's (1989) information processing model, which entails an automatic fear response. According to Dalglish (2004) a traumatic event results in an appraisal of strong fear, helplessness, and horror, followed by other emotions. When the event occurs, information about the trauma is simultaneously encoded on the schematic, propositional, and analogue levels. This results in the perception of the event as an ongoing threat, as it is a continuous threat to life goals, leading to low-level fear activation, selective attendance to perceived threats and threat appraisals, as well as intrusive sensory images (Dalglish, 2004). Although the trauma is encoded on various levels of mental representation, it lacks integration into an individual's mental representations as a whole, leaving the memories to be experienced

as flashbacks, nightmares, or intrusive images that are typically dealt with by avoidance behavior (Daggleish, 2004).

Daggleish (1999) notes in the SPAARS model that the more overvalued (meaning rigid and extreme) an individual's schemas are, the more likely they are to develop PTSD. This means that schemas which are inflexible are less able to readily accommodate traumatic information. Similarly, overvalued schemas are excessively positive (e.g., "I'm invulnerable"), which makes it very hard to integrate negative cognitions and information gathered during a trauma, preventing processing or "completion" of the traumatic event (Daggleish, 1999, 2004). The SPAARS model also accounts for the role that pre-existing negative core schemas play in the development of PTSD, as negative beliefs about the self, others, and the world may be confirmed by a traumatic event. It is proposed that this confirmation would result in a state of perpetual anxiety, maintained by the validation of the beliefs that the world is dangerous and that one is vulnerable. Thus, it is likely that both negative and positive core schemas play important roles in the development and maintenance of PTSD following a trauma.

There is still no definitive consensus within the literature as to which of the overarching PTSD theories most accurately conceptualizes the disorder, as each has been demonstrated to have its own respective merits and weaknesses. While multirepresentational theories are likely the most well-rounded and accurate explanations for PTSD, they run the risk of becoming overcomplicated. However, Daggleish's (2004) SPAARS model is considered cutting edge. There are also still many attempts to expand the extant literature on specific components of these broad theories in an effort to address pieces of the PTSD puzzle that have not received as much empirical attention, but are

believed to be important to a more nuanced understanding of the disorder. Of particular importance to the current study, there is as of yet no satisfying answer to the question of why women get PTSD more frequently than men, even after controlling for trauma type, as little effort has been directed at understanding gender differences from a conceptual level (Simmons, 2007; Tolin & Foa, 2006, 2008). Moreover, no theory has addressed sex differences in PTSD, despite the dramatic difference in prevalence rates. There is also the issue of schemas which, while addressed in many PTSD theories (e.g., Dalglish, 2004; Ehlers & Clark, 2000; Foa & Rothbaum, 1998; Janoff-Bulman, 1985, 1992; McCann & Pearlman, 1988, 1990; Simmons & Granvold, 2005), are not always conceptualized consistently and have not been examined in terms of predictive potential. Price (2007) notes that the primary critique of extant schema theories is that they fail to identify the specific core schemas that predispose individuals to develop PTSD. It would be beneficial to more clearly define, identify, and categorize types of schemas associated with PTSD, instead of studying them as broad constructs.

Further investigation of the role that schemas play in the development and maintenance of PTSD is clearly warranted. While EMS have received much attention in regard to their relationship to personality and mood disorders, very few studies have examined them in the context of PTSD (Price, 2007). EMS present a way for theorists to study schemas in a more consistent and organized manner, which may have beneficial clinical implications. It is an established fact that not all individuals who are exposed to a traumatic event will develop Posttraumatic Stress Disorder (PTSD). Moreover, of those that do develop PTSD, women are twice as likely to report PTSD symptomatology as men. Based on current theories of PTSD, it is hypothesized that one factor behind both

of the previous statements is a difference in cognitive processing, specifically schemas. The goals of this study are to expand the literature on the relationship between EMS and PTSD and subsequently examine possible differences in gender-based EMS and PTSD. For theoretical reasons, it is proposed that individuals who have certain types of EMS may also report higher PTSD symptomatology after a traumatic event and that, of those who do report increased symptomatology, females will outnumber males because of sex differences in types of EMS. Thus, the two main purposes of this study are to assess which types of EMS may be related to increased PTSD symptomatology, and to examine gender differences in EMS in an effort to better understand the preponderance of women who develop PTSD.

Early Maladaptive Schemas (EMS)

Beck (1967) defined a schema as “a cognitive structure for screening, coding, and evaluating the stimuli that impinge on the organism,” a definition that focuses more on the role that schemas play in information processing (p. 283). Similarly, Fiske and Linville (1980) define a schema as a way of mentally representing knowledge that allows information to be organized and abstracted at varying levels. However, the content of the schemas is equally important. Thus, schemas of self, world, and others, serve as blueprints that individuals use to effectively experience and understand their environments. Information is selectively attended to and absorbed in accordance with schema consistency (Langer & Abelson, 1974; Swann & Read, 1981).

The schema-focused cognitive theoretical approach to PTSD posits that the disorder is a result of schema incongruity or difficulty integrating/interpreting a traumatic

event based on the content and nature of pre-existing schemas (Cason, Resick & Weaver, 2002; Dalgleish, 2004). Traumatic events are problematic for individuals due to the fact that they shatter adaptive schemas, promote maladaptive schema development or maintenance, or impair adaptive schema development (Newman, Riggs, & Roth, 1997). As mentioned previously, numerous studies have addressed the relationship between PTSD and schemas in one form or another (e.g., Horowitz, 1986, 1997; Janoff-Bulman, 1985, 1989, 1992; Janoff-Bulman & Frantz, 1997; Janoff-Bulman & Frieze, 1983). However, although it is agreed that the term schema refers to a pre-existing mental representation of knowledge through which information is filtered, studies assessing them often utilize divergent language (Newman, Riggs, & Roth, 1997). Many of these studies simply reference negative cognitions, beliefs about self worth, assumptions about benevolence or meaning in the world, or schemas (McCann, Sakheim & Abrahamson, 1988; Resick, Schnicke & Markway, 1991). Only one study (Price, 2007) has specifically addressed Jeffrey Young's Early Maladaptive Schemas (EMS) in relation to PTSD. EMS are widely accepted as the gold standards in terms of models of negative schemas due to the fact that they have the most empirical support (Schmidt, Joiner, Young, & Telch, 1995; Young, Klosko, & Wiershaar, 2003). Thus, Price's (2007) study represents the first step in more clearly defining the concept of the schema within the PTSD literature.

Young (1995) defines EMS as "extremely stable and enduring themes that develop during childhood and are elaborated upon throughout an individual's lifetime" (p.9). His definition incorporates the information processing quality of the schema suggested by Beck, and also emphasizes content and etiology. EMS contain memories,

cognitions, emotions, and bodily sensations, and vary in terms of how predominant or salient they are for each person (Young, Klosko, & Wiershaar, 2003). Unlike other definitions of schemas that would place them in the realm of implicit cognitive structures that cannot be easily accessed via self-report measures, EMS are accessible beliefs that are similar to the core beliefs which have previously been referred to as being schema content or verbal representation (Beck, 1995; Clark & Beck, 1999; James, Southam, & Blackburn, 2004; Segal, 1988). Initially developed to aid in the treatment of personality disorders, there are currently 18 rationally derived EMS (Young, Klosko, & Weishaar, 2003). The Schema Questionnaire was developed to assess for EMS and their severity (YSQ3-L2; Young & Brown, 1990, 2001, 2005).

The 18 EMS fall under 5 different schema domains (Young et al., 2003). The domain of Disconnection and Rejection concerns the expectation that needs for safety, stability, nurturance, empathy, sharing of feelings, acceptance and respect will not be met in a predictable manner. This domain contains the EMS of Abandonment/Instability (AB), Mistrust/Abuse (MA), Emotional Deprivation (ED), Defectiveness/Shame (DS), and Social Isolation/Alienation (SI). Impaired Autonomy and Performance is a domain that is related to expectations about oneself or the environment that disrupt one's perceived ability to separate, survive, function independently, or perform successfully (Young et al., 2003). This domain includes Dependence/Incompetence (DI), Vulnerability to Harm or Illness (VH), Enmeshment/Undeveloped Self (EM), and Failure (FA). The Impaired Limits domain relates to deficiency in regard to internal limits, responsibility to others, or long-term goal-orientation. This domain is marked by difficulty respecting others' rights, cooperating with others, making commitments, or

setting and meeting realistic personal goals (Young et al., 2003). Within the realm of Impaired Limits fall the EMS of Entitlement/Grandiosity (ET), and Insufficient Self-Control/Self-Discipline (IS). The domain of Other-Directedness concerns an excessive focus on others' needs, feelings, and responses, at the expense of one's own needs in order to gain love or approval, maintain a sense of connection, or avoid conflict (Young et al., 2003). EMS within Other-Directedness are Subjugation (SB), Self-Sacrifice (SS), and Approval-Seeking/Recognition-Seeking (AS). Finally, Overvigilance and Inhibition is a domain that entails excessive emphasis on suppressing one's spontaneous feelings, impulses, and choices, or on meeting rigid, internalized rules and expectations about performance and ethical behavior at the expense of happiness, self-expression, relaxation, relationships, or health. This last domain contains the EMS of Negativity/Pessimism (NP), Emotional Inhibition (EI), Unrelenting Standards/Hypercriticalness (US), and Punitiveness (PU).

One major assumption of EMS is that they are stable constructs, originating from formative experiences in childhood (Young, Klosko, & Weishaar, 2003). EMS differ from core beliefs as they have previously been conceptualized in cognitive psychology. For example, core beliefs are conditional and are often contingent on situational contexts (e.g., "If I don't win the race, I'm unworthy"), whereas EMS are unconditional pervasive beliefs (e.g., "I am unworthy"). Young et al. (2003) maintain that EMS are stable over time, which assumes that an individual's highest rated schemas will be consistently problematic. However, much like personality disorder features, EMS can theoretically be ameliorated by therapy or life experiences. This means that they are highly stable but not infinitely so (Young et al., 2003). Despite this possibility, it is likely that, even after

treatment, one's highest rated EMS will still be rated more highly than non-problematic EMS, as the EMS ratings would decrease proportionately. Riso and colleagues (2006) examined the stability of Young's EMS over a period of 2.5 to 5 years in a sample of depressed outpatients. They found high first-order stability correlations for EMS, ranging from .55 to .85 (median = .75), and good to moderate discriminant validity. Even when accounting for mood state biases by recalculating stability correlations for patients in remission at follow-up, EMS stability still remained in the moderate range from .41 to .89 (median = .53). The absolute stability of EMS was examined via paired t-tests for baseline and follow-up, which showed fair to good stability. Riso et al. (2006) note that the longitudinal stability and discriminant validity of EMS are comparable to personality disorder features. Young's EMS questionnaire has also been used in research on eating disorders (e.g., Cooper, 1997; Cooper & Hunt, 1998) as well as substance abuse (e.g., Ball & Cecero, 2001) and depression (e.g., Riso et al., 2003). These studies have consistently found that EMS are maintaining factors in many disorders, related to maladaptive coping styles and represent areas of vulnerability that, if not addressed, will impede treatment.

PTSD and EMS: Empirical Evidence

Price (2007) examined cognitive and psychodynamic models of PTSD to ascertain which EMS and defenses account for PTSD symptoms (i.e., Intrusion and Avoidance subscales of the Impact of Events Scale; IES). This was done by regressing Jeffrey Young's schema questionnaire (YSQ-SI) onto the IES. He found that the EMS of Defectiveness, Dependence, Enmeshment, and Failure held, suggesting that there is

indeed a link between EMS and PTSD. Specifically, on the intrusion subscale of the IES, the predictor EMS model was comprised of the early maladaptive schemas of Defectiveness, Dependence, and Enmeshment, which accounted for 26.2% of the variance. On the avoidance subscale, the EMS of Failure accounted for 25.3% of the variance. However, possible gender differences within the group were not discussed. Other than Price's findings, there is a dearth in the literature in regard to the relationship between EMS and PTSD.

Price's study (2007) broke important ground in identifying EMS associated with PTSD. According to Young (1999), the EMS of Defectiveness is the core belief that one is defective, inferior, or bad. Young's EMS are organized with respect to various domains. Defectiveness is under the domain of Disconnection/Rejection, which revolves around the idea that one's needs for stability, security, safety, empathy, and respect will never be sufficiently met (Young, 1999). Another domain, Impaired Autonomy, contains EMS such as Dependence, Enmeshment, and Failure. The predominant theme of impaired autonomy is that of personal inadequacy (Young et al., 2003). The Dependence EMS is the core belief that one is incapable of functioning without considerable aid or guidance from others as a result of one's incompetence. Enmeshment refers to excessive emotional involvement with others which results in stunted personal growth and development. Finally, the Failure EMS refers to the core belief that one is a failure and/or destined to fail. As evidenced by Price's study (2007), the Impaired Autonomy domain appears to be highly related to the development of PTSD symptomatology. These findings are consistent with the literature, as Flach (1990) proposed personality factors such as flexibility, creativity, and self-esteem to be protective factors against the

development of PTSD. The EMS found in Price's study represent the opposite of those factors. Similarly, Foa and Rothbaum (1998) proposed that individuals with an "incompetent" schema may be more likely to develop PTSD and that PTSD symptomatology may result in self-perceptions of ineptitude. Price (2007) argues that Defectiveness, Dependence, and Enmeshment may, with respect to the EMS of Failure, be less extreme. He notes that individuals with Defectiveness, Dependence, and Enmeshment EMS may view themselves as inferior and somewhat incompetent when compared to others, but may not necessarily believe that they are completely incompetent. Price maintains that this may allow individuals to get "glimpses" of the trauma but would not allow them to process it fully, maintaining the symptoms, which would result in intrusion symptoms of PTSD. The EMS of Failure, on the other hand, represents an absolute condemnation of the self. Price proposes that avoidance may be the only way individuals with this EMS can cope with traumatic experience, as processing the traumatic data would only lead to further activation of the schema. Price's (2007) suggestions are consistent with Foa and Rothbaum's (1998) integrated model. Finally, Price (2007) makes a point of stating that, if PTSD reactions can be triggered by events that activate an individual's EMS, then whether or not an individual may find an event traumatic may be based on individual factors such as EMS. This speaks to the possibility that EMS may be able to account for why some individuals develop PTSD symptomatology after a trauma while others do not. There is theoretical reason to believe that certain EMS may be likely to predispose individuals to developing PTSD.

Price (2007) is one of the only studies to have looked at the relationship between EMS and PTSD. His study broke new ground in establishing that there is indeed a

relationship between the EMS of Defectiveness, Dependence, Enmeshment, and Failure, and PTSD symptomatology. In addition to Price, other research and theory has examined various types of cognitions thought to be related to PTSD symptomatology. Although these studies did not specifically examine EMS as conceptualized by Young, they relate to cognitions similar to core beliefs associated with certain EMS. Some studies, like McCann, Sakheim, and Abrahamson (1988), even refer to the cognitions as “schemas,” though this is based on the traditional idea of a schema as a basic belief about self, others, or the world, rather than Young’s empirically derived EMS. Thus, based on previous studies involving cognitions or non-EMS schemas and PTSD, there is some precedence for the type of content, and thus which specific EMS, may be most related to the disorder in addition to those EMS already established by Price (2007). For example, based on qualitative data and clinical experience, McCann, Sakheim, and Abrahamson (1988) proposed that cognitive distortions related to schemas within the areas of safety, trust, power, esteem, and intimacy were related to the development of PTSD. Resick et al. (1991) confirmed that rape victims hold dysfunctional beliefs in regard to each of these areas, and that the severity of PTSD symptoms was correlated with the strength of these beliefs. The EMS of Mistrust/Abuse pertains to the areas of safety and trust, while the area of safety also applies to the EMS of Vulnerability to Harm or Illness. Janoff-Bulman (1985, 1992) found that PTSD was related to shattered beliefs about one’s invulnerability, the meaningfulness of the world, and positive self-perception, which match up with several of McCann and colleagues’ proposed areas (i.e., safety, trust, and esteem). Specifically, shattered beliefs about invulnerability would suggest that the EMS of Vulnerability to Harm or Illness would apply. Other cognitive themes that have been

proposed to be related to PTSD are self-denigratory beliefs (e.g., Jehu, 1988; Linehan, 1993), shame and guilt (e.g., Lee, Scragg, & Turner, 2001) or safety and competence (e.g., Foa & Riggs, 1993), all of which are still consistent with cognitive schemas in the areas of safety, trust, power, esteem, and intimacy proposed by McCann et al. (1988) and McCann and Pearlman (1990). The idea that beliefs concerning self-denigration, shame, and competence are related to PTSD would suggest that the EMS of Punitiveness, as well as Negativity/Pessimism may apply due to the fact that they may pertain to self-punishment or degradation, and/or negative perceptions about one's abilities. The concept of shame may also be related to the previously mentioned EMS of Failure, as discussed in Price (2007).

Thus, consistent with the literature on cognitive themes related to PTSD, as well as Price's study, it is proposed that EMS that pertain to these cognitive areas will be most likely to be associated with higher PTSD symptomatology. Specifically, based on Price's (2007) study, the schemas of Defectiveness/Shame, Dependence, Enmeshment, and Failure have been found to be related to PTSD symptomatology. Furthermore, other EMS related to established cognitive themes (e.g., McCann & Pearlman, 1990) are also estimated to be related to the development of PTSD symptomatology. These EMS are Mistrust/Abuse, Vulnerability to Harm or Illness, Negativity/Pessimism, and Punitiveness.

PTSD, EMS, and Gender Differences

It has been established that previous findings on gender differences, such as differences in likelihood and type of exposure to trauma, cannot fully account for the fact

that women experience PTSD more frequently than men (Tolin & Foa, 2008). A review of the literature by Tolin and Foa (2008) on sex differences and PTSD confirmed that there is a great discrepancy in rates of PTSD between the sexes, for which we have not yet accurately accounted. Specifically, their meta-analyses of the last 25 years of PTSD literature yielded four important points.

First, they noted that across studies the odds that women and girls will meet diagnostic criteria for PTSD were twice as likely as those of men and boys. Second, they found that male participants were actually significantly more likely than female participants to report a potentially traumatic event (PTE), signifying that women's higher rates of PTSD cannot be attributed to increased risk or exposure to trauma. However, their third finding did reveal that there are sex differences in the type of trauma history that is likely to be reported, as males are more likely to report experiencing accidents, nonsexual assault, combat/war, disaster or fire, and serious illness/injury, while women are more likely to report sexual assault or abuse. Yet, even when controlling for type of trauma reported, women were still more likely to meet PTSD criteria and to report greater severity of PTSD symptoms than men. This final point confirms the notion that there are still sex differences in the development of PTSD that have not been sufficiently explained by previous studies.

Tolin and Foa (2008) note that they obtained the strongest effects for gender differences, meaning higher rates of PTSD among females, when they examined studies which utilized the DSM-IV A1 and A2 criteria for a traumatic event. These criteria go beyond merely defining an event as traumatic based on the aspects of the event alone. Criteria A1 and A2 assess the cognitive and emotional impact on an individual during

and after the event in question. This suggests that an underlying reason for gender differences in the development of PTSD is likely linked to a cognitive piece of the puzzle. Indeed, Tolin and Foa (2008) propose that these sex differences may be due to variables such as, “aspects of the traumatic event, preexisting cognitive and affective reactions to PTE, and a tendency toward different expressions of distress for male versus female participants” (p. 65).

A previous study (Tolin & Foa, 2002), concerning sex differences on the Posttraumatic Cognitions Inventory (Foa, Ehlers, Clark, Tolin, & Orsillo, 1999), revealed that female PTE survivors endorsed more self-blame, incompetence, defectiveness, and belief that the world is dangerous than did men. Several other studies have also examined the link between cognitions and sex differences in the development of PTSD symptomatology. For example, some theories suggest that the missing piece may be differences in cognitive processing, specifically schemas (e.g., Simmons, 2007; Simmons & Granvold, 2005). Schemas have been associated with the development of PTSD, but there is a scarcity of research as to which Early Maladaptive Schemas (EMS) specifically relate to this matter (with the exception of Price, 2007), and no research on gender differences therein.

As to why the differences may exist between schemas of males and females, Simmons and Granvold (2005) reference gender schema theory, suggesting that this may explain some differences in pretrauma schemas. Gender schema theory states that children develop a certain view of the world based on their gender, which they maintain as adults even in situations where gender is not a factor (Bem, 1981, 1982, 1984). Bem (1981) posits that as children learn about themselves and the world they learn a plethora

of content-based information, including qualitative differences that constitute the male/female dichotomy. More importantly, Bem (1981) notes that children also learn to create and reference a diverse network of sex-related associations that they use to evaluate and assimilate new information, including their view of themselves. Bem asserts that this process, which she refers to as gender-based schematic processing, results in sex typing. Through sex typing, males and females learn to determine self-worth, preferences, attitudes, behaviors, and personal attributes based on how they match up with their respective gender schemas (Bem, 1981). This process is perpetuated by the individual's desire to fit in with their own culture and the individual's resulting attitudes and behaviors further reinforce the gender-based differentiation of self-concept (Bem, 1981). Thus, men and women are socialized to believe and act in different ways and these dissimilarities result in potentially very different schema profiles. Given that current literature on PTSD has demonstrated that schemas play a significant role in determining how individuals process and respond to traumatic events, it follows that differences in schemas based on gender socialization would result in different gender-based ways of dealing with trauma (Krause, DeRosa, & Roth, 2002; Simmons & Granvold, 2005).

There is evidence to suggest that women tend to have more negative cognitions (e.g., schemas) than men. As previously mentioned, Tolin and Foa (2002) found that female survivors of a traumatic event reported more self-blame, incompetence, defectiveness, and belief that the world is dangerous than did men. A non-trauma related study examining gender differences on moral affect and cognitive processes (Lutwak & Ferran, 1996) found that, when men and women were administered assessments of

shame, guilt, self-critical cognitions, and perfectionism, women endorsed significantly higher rates of shame and guilt than did men. According to further factor analyses, the study also found that for men, shame loaded with self-critical cognitions and guilt loaded with aspects of perfectionism. Among women, both shame and guilt loaded with self-critical cognitions yet only with aspects of socially prescribed perfectionism, suggesting that individuals differ in perceptions of shame and guilt based on gender. Similarly, Lutwak (2001) found that women are more prone to experience shame and guilt than are men. This would suggest that women process and perceive themselves and their world differently from men. A review of the literature concerning gender differences in depression by Nolen-Hoeksema (2001), further solidifies the notion that men and women differ fundamentally in terms of their self-concept and coping styles. For example, she notes that females have been found to have poorer self-concepts than males. Furthermore, females markedly differ from males in terms of how they view interpersonal orientation with regard to self-concept, as females tend to place more concern on relationship status and how they are perceived by others (Nolen-Hoeksema, 2001). This higher degree of interpersonal orientation may lead females to subordinate their own needs or put them at greater risk for depression when problems arise in relationships, which has been established by studies showing that females have a greater likelihood of developing depression following interpersonal stress (Nolen-Hoeksema, 2001). Females also are more likely than males to respond to stressful life events with rumination, or preoccupation with internal feelings of distress or concern (Nolen-Hoeksema, 2001).

While much literature exists on differences in self and world schemas in terms of the formation of gender identity (e.g., Bem, 1981), there is little research examining schema differences based on gender as they relate to PTSD (Tolin & Foa, 2002) and very little research on gender differences and EMS. Evidence from a recent factor analytic study on the short form of the Young Schema Questionnaire utilizing a clinical sample indicates that women were significantly higher than men on their endorsement of Self-Sacrifice, Enmeshment, Failure, Abandonment, and Defectiveness (Welburn, Coristine, Dagg, Pontefract, & Jordan, 2002). Welburn and colleagues (2002), in a within-subjects exploration, found that both males and females in the study rated Unrelenting Standards and Social Isolation as their highest schemas, while females were lowest on Entitlement and males were lowest on Enmeshment. Gender differences in the Welburn et al. (2002) study were attributed to differences in gender socialization, which is consistent with Gender Schema theory. Extant literature has shown that women tend to have differences in cognitive appraisal, such as higher threat appraisals than men and also less perceived control over traumatic events, yet there is a dearth of literature on gender differences in cognitive schemas and traumatic events (Cole & Sapp, 1998; Mak, Blewitt, & Heaven, 2004; Olff, Langeland, Draijer, & Gersons, 2007).

It has also been established that women are more likely than men to develop PTSD following a trauma. This study contends that one of the reasons for this difference may be due to cognitive factors, particularly differences in EMS. Thus, it is proposed that women will endorse higher scores on the EMS of Defectiveness/Shame, Dependence, Enmeshment, Failure, Mistrust/Abuse, Vulnerability to Harm or Illness,

Negativity/Pessimism, and Punitiveness, which are all EMS thought to be related to PTSD symptomatology.

Hypotheses

The overall objective of the present research was to determine if early maladaptive schemas (EMS) were related to PTSD symptomatology. The specific aims of the study were to determine the effects of EMS type on PTSD symptomatology, and to examine gender differences in EMS type as it relates to the severity of PTSD symptomatology. This study proposes several hypotheses based on existing theory and research.

Hypothesis One

Concurrent with the literature on trauma, it is first hypothesized that significantly more women than men will report elevated levels of PTSD symptomatology following a trauma.

Hypothesis Two

While there is reason to presume that many of the 18 EMS may be related to PTSD symptomatology, the weight of the evidence points to the following eight EMS specifically, as some have been found to be highly related to PTSD criteria (Price, 2007) and others match for cognitive content that has consistently been found qualitatively in cases of PTSD (McCann et al., 1988). Therefore, it is hypothesized that, for those who have experienced a trauma, men and women alike will report greater PTSD symptomatology if they have the following eight EMS that make them more vulnerable:

defectiveness/shame, dependence, enmeshment, failure, mistrust/abuse, vulnerability to harm or illness, negativity/pessimism, and punitiveness.

Hypothesis Three

It is also hypothesized that more women than men will report having these particular EMS.

Hypothesis Four

Moreover, it is proposed that these EMS will partially mediate the connection between trauma and PTSD symptomatology.

Hypothesis Five

Furthermore, it is hypothesized that, for individuals who report they have experienced a trauma, the EMS found to be significantly higher in one gender over another (i.e., those described in hypothesis three) will partially mediate the relationship between gender and PTSD symptomatology.

METHOD

Participants

Participants were male and female undergraduate students recruited from introductory psychology classes at the University of Tennessee. There were no restrictions on the type of individuals who participated, other than the fact that they were required to be at least 18 years of age.

Measures

Demographics Questionnaire

This 11-item questionnaire gathers basic information about each participant, including age, race/ethnicity, income, education, relationship status, etc. (See Appendix A).

Trauma History Questionnaire (THQ)

The THQ (Green, 1996) is a 24-item questionnaire addressing a range of traumatic events in areas: crime-related events (e.g., robbery, mugging), general disaster and trauma (e.g., injury, disaster, witnessing death), and unwanted physical and sexual experiences. For each item, the subject indicates whether or not he or she experienced it, and if so, the number of times and approximate age(s) of occurrence. Specifics are requested for most of the questions (e.g., if someone was injured, who was it?). For the sexual and physical abuse questions, the subject is asked whether the experience was repeated, and if so, approximately how often and at what age. According to Green's (1996) reliability data, excluding the severe-threat index (stability coefficient = .14), the test-retest correlations ranged from .54 to .92 over a two to three month period and items had a mean of .70, with scale means highest in the outpatient versus university sample. In a sample of patients with severe mental illness, test-retest kappa coefficients ranged from moderate (.57) to high (.89) for items endorsed by at least twenty percent of the sample, though coefficients were lower for traumatic events occurring less frequently (.36-

.43) (Mueser, Salyers, Rosenberg, Ford, Fox, & Carty, 2001). Inter-rater reliability was high among the mentally ill, as kappas ranged from .76 to 1.0 (Mueser et al, 2001). Mueser and colleagues (2001) noted that information regarding validity was limited, but found that trauma reports of severely mentally ill patients were comparable to persons with no serious psychiatric condition. The THQ is a history collection instrument with no standard scoring method, although the most common method is to add the number of traumas to report an overall trauma history (Green, 1996). For the purposes of this study, the total number of reported traumas was summed to create a continuous variable of lifetime trauma frequency. However, total scores for each trauma type were also calculated for use as descriptive statistics (See Appendix B).

Posttraumatic Stress Disorder Checklist Specific Version (PCL-S)

The PCL-S (Weathers, Litz, Herman, Huska, & Keane, 1993) is a 17-item self-report instrument used to assess symptoms consistent with a DSM diagnosis of PTSD. The PCL-S requires participants to respond to items in reference to their self-reported most distressing event. Responses range from 1 (“not at all”) to 5 (“extremely”). There are various cutoff scores that can be used on the PCL-S depending on the population of study. The National Center for PTSD (2010) recommends a higher cutoff score of 44 to avoid false positives and to ensure diagnostic efficiency (Blanchard, Jones-

Alexander, Buckley, & Forneris, 1996). Reliability and validity of the PCL has been reported in several studies (e.g., Andrykowski, Cordova, Studts, & Miller, 1998). High correlations (overall $r = .93$) have been found between PCL derived symptom ratings and other well known assessments of PTSD, such as the CAPS (Blanchard et al., 1996). The PCL has also been determined to have high diagnostic accuracy (Forbes et al., 2001). A recent study of the PCL psychometric properties found evidence of high internal consistency, with Cronbach's alpha coefficients of .94, .85, .85, and .87 for the PCL total, re-experiencing, avoidance, and hyperarousal scores, respectively (Ruggiero, Ben, Scotti, & Rabalais, 2003). Ruggiero et al. (2003) also found strong convergent and discriminant validity (See Appendix C).

Young Schema Questionnaire Long Form, Version 3 (YSQ-L3)

The YSQ-L3 (Young, 1994, updated in 2009) is a 232-item questionnaire that assesses early maladaptive schemas (EMS). The YSQ was first developed by Young in 1990 in order to give clinicians a valid and reliable way to assess EMS. The YSQ-Long Form (YSQ-LF; Young 1990, 1994) was created based on Young's rationally derived EMS, gleaned from his clinical intuition and experience. The initial YSQ-LF contained 205 items and 16 subscales that corresponded to Young's 16 proposed schemas (1990). Early factor analysis of the YSQ-LF was conducted by Schmidt, Joiner, Young, and Telch (1995). They employed an exploratory factor analytic technique (principal components analysis, or PCA) on YSQ-LF data gathered from 1129 students

and 187 clinical patients in the United States. Schmidt et al.'s (1995) factor analysis supported the rationally derived schemas proposed by Young (1990, 1994). However, it also cast doubt on the inclusion of the EMS of Social Undesirability and Failure to Achieve (Oei & Baranoff, 2007). Replication of this PCA factor analytic study in a sample of 433 Australian clinical patients was conducted by administering the 205-item version of the YSQ (Lee, Taylor, & Dunn, 1999). Lee and colleagues (1999) confirmed the presence of 16 factors that accounted for 60% of the variance. Fourteen of Young's proposed 16 factors emerged, with Social Undesirability again failing to emerge, which was not included in Young's revised classification of the EMS in 1994 (Lee et al., 1999). Lee and colleagues (1999) confirmed that the long form of the YSQ has good internal consistency and stable primary factor structure across clinical samples. Young's EMS revision (1994) was a product of factor analytic studies, resulting in the exclusion of two original EMS, as well as the addition of four new EMS. The YSQ-L2 was developed by Young and Brown in 2007 as a 205-item scale to assess 16 EMS. Based on factor analytic work, Young has now established that there are 18, rather than 16 EMS. The most current form of the YSQ is the YSQ-L3, the third version of the long form which contains the 18 EMS proposed by Young (2009). Due to its recent development, the YSQ-L3 does not have readily available psychometric data as does the YSQ-L2. However, the YSQ-L2 reliability coefficients range from .58 for the Social Undesirability scale (no longer contained in the YSQ-L3) to .88 for Mistrust/Abuse (Sava, 2009). The

items were scored by only summing the ratings of 4, 5 and 6 (ratings of 1, 2 and 3 were not counted). Scores were obtained for each schema by calculating the proportion of the total possible score for each schema. For instance, the emotional deprivation schema score was calculated by summing each item score above 3 and dividing by 54 (the highest possible score since there are nine items), and then multiplying by 100. This is in keeping with the scoring key accompanying the YSQ-L3 (Young & Brown, 2003). (See Appendix D).

Brief Symptom Inventory (BSI)

The BSI (Derogatis, 1993) is a 53-item self-report inventory used to assess symptoms associated with a wide range of psychological disorders, including anxiety, phobias, obsessive-compulsive disorder, and hostility. It was designed to be a short form of the SCL-90-R (Derogatis, 1975, 1977) that assesses the nine symptom dimensions: Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic anxiety, Paranoid ideation and Psychoticism; and three global indices of distress: Global Severity Index, Positive Symptom Distress Index, and Positive Symptom Total. The measure has been shown to have good internal consistency and reliability for the nine dimensions, ranging from .71 on Psychoticism to .85 on Depression (Derogatis, 1993). Test-retest reliability for the nine symptom dimensions ranges from .68 (Somatization) to .91 (Phobic

Anxiety), and for the three Global Indices from .87 (PSDI) to .90 (GSI).

Factor analysis results confirmed the a priori construction of the symptom dimensions and correlations between the BSI and SCL-R-90 were .92 to .99 (Derogatis, 1993). (See Appendix E).

Anger Questionnaire (BPAQ)

The BPAQ (Buss & Perry, 1992) consists of 4 subscales: Physical Aggression, Verbal Aggression, Anger, and Hostility. Correlational analysis reveal that anger is the bridge between both physical and verbal aggression and hostility. The scales have demonstrated internal consistency and stability over time. Men tend to score slightly higher on Verbal Aggression and Hostility and much higher on Physical Aggression. Past results are not indicative of sex differences for Anger. The various scales correlate differently with various personality traits. Scale scores correlate with peer nominations of the various kinds of aggression. (See Appendix F).

Acceptance and Action Questionnaire (AAQ)

The AAQ (Hayes et al., 2004) is a 9-item self-report measure that assesses emotional avoidance and emotion-focused inaction. The questionnaire consists of a 7-point Likert scale measuring the degree to which a particular statement applies to subjects (1=never true to 7=always true). Sample items include “Anxiety is bad,” “I’m not afraid of my feelings”. High scores indicate high experiential avoidance while low scores indicate acceptance and

commitment to action. Research suggests a single factor structure for the AAQ and shows strong positive correlations with several measures of depression and anxiety (Hayes et al., 2004). (See Appendix G).

Anxiety Disorders Interview Schedule (ADIS-IV)

The ADIS-IV (Di Nardo, Brown, & Barlow, 1994) is a structured clinical interview specifically targeted to anxiety and affective disorders. For the purposes of the present study, only the PTSD module of the ADIS-IV was administered to participants. The PTSD module assesses participant exposure to traumatic stressors and 17 symptoms of PTSD in accordance with the DSM-IV-TR criteria for PTSD. The interview allows the administering clinician to make a diagnosis of PTSD.

Procedures

Participants were recruited via the University of Tennessee online research participation website (i.e., <https://hpr.msu.edu/utk/>). Students were made aware of this website and the opportunity to participate in research through their General Psychology professors. This site is used by all psychology faculty interested in recruiting undergraduate students for their research. In order to participate, students were required to sign up, identify a password, and provide minimal personal information (e.g., name, student ID, and email address) for awarding research credit. Once signed into HPR using a password, students were allowed to sign up for studies of interest to them. Those who decided to participate were directed to an external website (www.surveymonkey.com)

where they completed a survey (described below) that took approximately one hour to complete (earning them 4 HPR credits).

Before being presented with any surveys, participants were able to read a consent form, which again informed them of any potential risks and/or benefits, as well as the confidential manner in which their data is protected. They were also informed that their participation was completely voluntary in nature and that they would not face any negative consequences, should they elect not to participate. Consent (See Appendix I) was obtained via a button at the bottom of the consent page that allowed participants to click “Yes” or “No.” If they selected “No,” they were sent to a screen thanking them for their time and were allowed to exit out of the program. A choice of “Yes” sent the participant to the first survey page of the study. Participants who selected “Yes” were also informed that they could exit the survey at any time without penalty.

Following informed consent, the participants were able to complete a series of questionnaires about mood, life experiences, and perceptions. Once the questionnaires were completed, the participants were presented with a final page thanking them for their participation, and were presented with researcher contact information so that they could ask any questions they had related to the research or their participation in it. This page also contained a list of area references (see Appendix J) in the event that they found answering the questions upsetting. Participants were then informed that they had been credited 4 HPR points. At the end of the survey, participants were asked whether they would be willing to come to a UT psychology lab in order to participate in a clinical interview, for which they would be awarded an additional 4 HPR points. Individuals that indicated they were interested in the lab-based interview were sent an invitational email.

These participants were administered the PTSD module of the ADIS-IV structured clinical interviews by research assistants. The research assistants had been trained in ADIS-IV administration by a graduate student until satisfactory reliability was established. Research assistants were required to attend two training sessions pertaining to administration of clinical interviews, PTSD criteria and diagnosis, and ethical clinical behavior. Following this training, each research assistant was required to watch a video of an actor portraying a patient being interviewed about PTSD symptoms and was required to score an ADIS in accordance with this video. Accuracy of the ADIS scores was assessed and research assistants were asked to repeat this scoring twice, and then as many times thereafter as needed until they could correctly complete the task. All research members were required to sign a statement of confidentiality (Appendix K).

Data was transferred from the SurveyMonkey.com website and hard copies of the ADIS-IV questionnaire booklets, then entered using the Statistical Package for the Social Sciences (SPSS 17, 2008). Imputation was performed via the data imputation option in SPSS, which employs a rule of imputing missing data for cases that have at least 70% of their data. Cases missing 30% or more of their data were not included in the analysis. Imputation was not used if a subject was missing an entire subscale on a questionnaire, nor was it used on ADIS-IV data.

RESULTS

Descriptive Statistics

The sample was comprised of 859 undergraduates (See Table 1 for Descriptives). The average age of participants was 18 years old ($SD = 1.96$). Over half of the sample were female (59.7%) and participants reported their academic level as that of freshman

(77.9%), sophomore (14.7%), junior (4.9%), senior (2.7%). Most participants indicated that they were Caucasian (86.6%), while others endorsed African American (6.4%), Asian (2.4%), Mixed Race (2.1%), Hispanic (1%), Other (.9%), Indian/Middle Eastern (.3%), and Native American (.1%) ethnicities. The majority of participants reported their religion as Non-Catholic/Christian (68.4%), followed by Catholic (13%), Atheist/Agnostic (9.4%), Other (7.1%), Jewish (.8%), Buddhist (.5%), Hindu (.5%), and Muslim (.2%). Family Income level was reported as follows: greater than \$100,000 (30.8%), \$60,000 - \$80,000 (18.5%), \$40,000 - \$60,000 (15.9%), \$80,000 - \$100,000 (15.8%), \$20,000 - \$40,000 (12.2%), and less than \$20,000 (6.9%).

In regard to relationship status, participants indicated the following: not dating anyone right now (59.1%), dating (38.6%), engaged to be married (1.3%), married (.9%), or divorced/widowed (.1%). The majority of the sample reported that they were heterosexual (97.9%), while others reported that they were bisexual (1.3%), lesbian (.6%), or gay (.2%). A small portion of the sample indicated that they had served in the military (1.4%; $n = 12$), with service ranging from 1 year ($n = 1$), 2-4 years ($n = 7$), and 5-7 years ($n = 4$).

An independent samples *t*-test indicated significant differences between males and females in the BSI Global Severity Index, $t(779.89) = -4.17, p < .001$, the BSI Somatization Index, $t(820.64) = -4.16, p < .001$, the BSI Obsessive-Compulsive Index, $t(853) = -3.74, p < .001$, the BSI Interpersonal Sensitivity Index, $t(812.67) = -6.42, p < .001$, the BSI Depression Index, $t(853) = -2.63, p < .01$, the BSI Anxiety Index, $t(820.81) = -5.20, p < .001$, the BSI Phobic Anxiety Index, $t(765.50) = -2.43, p < .05$, the BSI Paranoid Ideation Index, $t(797.72) = -3.275, p \leq .001$, the BSI Psychoticism Index, $t(853)$

= -2.04, $p < .05$, the AAQ, $t(857) = -4.23$, $p < .001$, Aggression Questionnaire Total, $t(857) = 2.81$, $p < .01$, Aggression Physical, $t(690.83) = 9.81$, $p < .001$, Aggression Hostility, $t(785.06) = -3.26$, $p \leq .001$, and Aggression Verbal, $t(857) = 2.13$, $p < .05$. No significant gender differences were found on the BSI Hostility Index or the Aggression Anger Subscale (See Table 2).

Trauma History

Overall Trauma Types Reported

Results of the THQ indicate that many participants experienced traumatic events in their lifetimes (See Tables 3 and 4). In terms of crime-related events, 52 (6.1%) participants indicated that they experienced someone attempting to take something from them by force, such as a mugging, and some reported that it occurred more than once (twice, $n=2$; three times, $n=1$). Many participants reported that they had been robbed ($n=176$; 20.6%), with many indicating it occurred more than once (twice, $n=37$; three times, $n=10$; four times, $n=3$; five times, $n=1$). Similarly, 134 (15.7%) participants reported that someone had succeeded in breaking into their home when they were not there, with some indicating it occurred more than once (twice, $n=25$; three times, $n=9$; four times, $n=4$; eight times, $n=1$). Fewer reported that they were the victim of such a break-in when they were at home ($n=39$; 4.6%), with only a few reporting this happened more than once (twice, $n=1$; three times, $n=3$).

In regard to a serious accident, such as one at work or in a car, 226 (26.6%) participants indicated that this had happened at least once, while others endorsed more occurrences (twice, $n=22$; three times, $n=3$; four times, $n=3$; five times, $n=1$; six times,

n=1; fifteen times, n=1). Natural disasters, such as an earthquake, tornado, flood, or hurricane that posed a threat to self or loved ones, were endorsed by 230 participants (26.9%). Man-made disasters, such as a building collapse, fire, or train crash, were endorsed by 51 participants (6%). Others indicated that they had been exposed to dangerous chemicals or radioactivity that might have threatened their health (n=30; 3.5%). Participants indicated that they had been in a situation in which they were seriously injured (n=81; 9.5%), or other situations in which they feared they would be killed or seriously injured (n=126; 14.8%), while 191 (22.4%) indicated that they actually had been in a situation where they saw someone injured or killed.

Some participants reported that they had seen a dead body before that was not at a funeral (n=131; 15.3%), and 77 (9%) indicated that they had a close friend or family member murdered or killed by a drunk driver. Participants also reported having a spouse or child die (n=17; 2%), having a life-threatening illness (n=96; 11.2%), or having received news of a serious injury, life-threatening illness, or unexpected death of someone close to them (n=537; 62.8%). Other participants endorsed having had to engage in combat while in military service in an official or unofficial war zone (n=15; 1.8%).

Sexual intercourse, anal, or oral sex against one's will was reported by 50 participants (5.8%; n=38 indicated it was repeated), while 72 participants (8.5%) indicated that someone had touched private parts of the participant's body (or made the participant touch theirs) under force or threat, which some indicated was repeated (n=19). Other situations in which another person tried to force unwanted sexual contact were endorsed by 58 participants (6.9%), with 19 indicating it was repeated.

An attack with a gun, knife, or other weapon was endorsed by 31 participants (3.6%), with 5 reporting it was repeated. Attacks without a weapon were reported by 43 participants (5%), with 15 stating it was repeated. Beating, spanking, or pushing hard enough to cause injury was endorsed by 76 participants (8.9%), with 42 stating it was repeated. Finally, many participants ($n=157$; 18.3%) reported that they had experienced a stressful life event or trauma that was not covered by the previous THQ categories. These events were categorized as other trauma (44.9%), accident (27.7%), natural disaster (7.4%), crime (6.6%), sexual assault (4.1%), physical assault (3%), childhood sexual abuse (2.7%), childhood physical abuse (2.1%), and combat (1.4%).

Gender Differences in Trauma Frequency and Type

An independent samples *t*-test was performed to assess for gender differences in overall traumas. Male ($M = 6.67$, $SD = 21.34$) and female ($M = 6.39$, $SD = 15.61$) participants did not differ significantly in the overall number of traumatic events they experienced, $t(857) = 0.22$, $p > .05$. However, a Chi Square test of independence was performed to examine whether there were statistically significant differences in types of trauma reported on the THQ based on participant gender. Males reported significantly more muggings, robbery, exposure to harmful chemicals or radiation, other situations in which they were seriously injured, and combat than did females. Females reported significantly more friends and family killed by drunk drivers, receiving news of a loved one's injury/illness/death, forced intercourse/anal/oral sex against their will, forced touching of private parts of self or others, repetition of the forced touching, other situations in which there was unwanted forced sexual contact, and other stressful life

events not covered by previous THQ questions than did males. Specific findings are listed below.

The percentage of participants who reported that someone had tried to take something directly from them by using force or threat of force (i.e., mugging) differed significantly by gender, $\chi^2(1, N = 859) = 4.24, p < .05$, as this was reported more frequently by males than females. Attempted or actual robbery also differed significantly by gender, $\chi^2(1, N = 857) = 5.78, p < .05$, with more males reporting this than females. Responses to the question about whether or not someone had attempted or succeeded to break into the participant's home when they were not there did not differ significantly by gender, $\chi^2(1, N = 853) = .76, p > .05$, nor did responses to the same question in regard to when the participants were home, $\chi^2(1, N = 853) = .32, p > .05$.

Responses to whether participants had experienced a serious accident also did not differ by gender, $\chi^2(1, N = 853) = 0.03, p > .05$. There was no gender difference in responses to the question of whether participants had experienced a natural disaster in which they or loved ones were in danger of death or injury, $\chi^2(1, N = 859) = 2.80, p > .05$, as was the case with the question of a man-made disaster $\chi^2(1, N = 859) = 3.01, p > .05$. However, there was a gender difference in reports of exposure to health-damaging chemicals or radioactivity, $\chi^2(1, N = 857) = 6.81, p \leq .01$, with more males reporting this than females. More males than females also indicated that they had been in another situation in which they were seriously injured. The difference was significant, $\chi^2(1, N = 859) = 3.97, p \leq .05$. There was no significant gender difference for the question of whether participants had ever been in a situation in which they felt or feared they might be killed or seriously injured, $\chi^2(1, N = 858) = 1.55, p > .05$. There was also no

significant gender difference for participants who indicated that they had seen someone seriously injured or killed, $\chi^2(1, N = 859) = 2.60, p > .05$.

Participants who endorsed seeing or handling a dead body other than at a funeral also did not differ significantly by gender, $\chi^2(1, N = 858) = 0.67, p > .05$. There was a significant gender difference for those who indicated they had ever had a close friend or family member murdered or killed by a drunk driver, $\chi^2(1, N = 859) = 5.95, p < .05$, as more women endorsed this than men. However, there was no significant gender difference among those who indicated that they had ever seen a spouse, romantic partner, or child die, $\chi^2(1, N = 859) = 2.02, p > .05$. Similarly, participants did not differ significantly by gender on whether or not they had ever had a serious or life-threatening illness, $\chi^2(1, N = 857) = .06, p > .05$. More women indicated that they had received news of a serious injury, life-threatening illness, or unexpected death of someone close to them than did men, which was a significant difference, $\chi^2(1, N = 859) = 6.23, p \leq .01$. There was a significant gender difference among participants who indicated that they had ever had to engage in combat while in military service in an official or unofficial war zone, $\chi^2(1, N = 858) = 8.15, p < .001$, as more men reported this than women.

Participants who reported that they had been made by someone to have intercourse, anal, or oral sex against their will differed significantly by gender, $\chi^2(1, N = 859) = 27.40, p < .001$, as more women reported this than did men. Moreover, participants who reported that this trauma was repeated differed significantly by gender, $\chi^2(1, N = 625) = 10.46, p < .001$, with women endorsing it more than men. Participants also differed significantly by gender in response to the question of whether or not anyone had ever touched private parts of their body or made the participant touch theirs, $\chi^2(1, N =$

853) = 37.64, $p < .001$, as more women indicated this happened to them than men.

Women also reported that this trauma was repeated more than did men, which was a significant difference, $\chi^2(1, N = 606) = 17.51, p < .001$. Similarly, the women reported that they had been in other situations in which another person forced them to have unwanted sexual contact more than men, which was a significant difference, $\chi^2(1, N = 859) = 14.32, p < .001$. However, there was no significant gender difference among participants who indicated that this trauma was repeated, $\chi^2(1, N = 588) = 2.41, p > .05$.

Among participants who endorsed having been attacked by anyone with a weapon, there was no significant gender difference, $\chi^2(1, N = 859) = .88, p > .05$, nor was there any significant gender difference when asked if this trauma was repeated, $\chi^2(1, N = 573) = 0.06, p > .05$. There was also no significant difference by gender for whether or not anyone had attacked participants without a weapon, $\chi^2(1, N = 859) = 0.01, p > .05$, and no significant gender difference was found when asked if this trauma was repeated, $\chi^2(1, N = 576) = 0.18, p > .05$. Participants who reported being spanked or pushed hard enough to cause injury did not differ significantly by gender, $\chi^2(1, N = 859) = 1.28, p > .05$, and also did not differ significantly when asked if it was repeated, $\chi^2(1, N = 593) = 3.13, p > .05$. However, participants did differ significantly by gender when asked if they had experienced any other extraordinarily stressful situation or event that had not been previously covered, $\chi^2(1, N = 859) = 10.03, p < .001$, with more women endorsing this than men.

Thus, males appear to have experienced more traumas of a physically violent nature (i.e., combat, mugging/robbery, exposure to situations where they feared they would be killed or injured), whereas females reported more events that were traumatic for

emotional reasons (e.g., dealing with the violent death or serious injury of a loved one, being sexually abused) as well as the combined physical and emotional trauma of sexual assault.

Analyses

Although all participants were invited to participate in an ADIS interview following their completion of the online survey, only 49 participants completed the lab-based interview. Of the 49 participants who completed this component of the study, 12 individuals reported that they had never experienced a traumatic event and were not required to complete the ADIS. Thirty-seven participants reported events that they deemed traumas; however, only 20 participants had legitimate traumas (i.e., events that met DSM-IV-TR criteria for a traumatic event). Five out of the 20 participants who completed the ADIS for a legitimate trauma met criteria for a diagnosis of PTSD, with PCL scores ranging from 48 to 70 ($M=56.00$), which is above the traditional cutoff of 44 on the PCL for a likely diagnosis of PTSD. The 15 participants who participated in the interview process but did not report a legitimate trauma and did not meet PTSD criteria ranged in PCL scores from 18 to 35 ($M=25.07$), with none being above the standard cutoff. The 17 participants who had a legitimate trauma and completed a full ADIS but did not meet diagnostic criteria for PTSD ranged in PCL scores from 17 to 42 ($M=29.76$). Thus, although the sample size of those who completed ADIS interviews is small, these data are in line with expectations, as those who met ADIS diagnostic criteria also met the required cutoff score for the PCL. Moreover, no individuals exceeded the PCL cutoff score that did not meet ADIS criteria for PTSD. These findings solidify the notion that

the PCL provides an accurate and trustworthy manner of delineating between those who do and do not meet diagnostic criteria for PTSD.

PCL scores were tabulated for the entire sample; however, due to the fact that the PCL does not allow for an official confirmation of a diagnosis of PTSD, PCL scores were utilized as both a continuous variable and were also used to create a categorical variable based on the standardized cutoff score of 44 for PTSD (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996).

Hypothesis One

It was hypothesized that significantly more women than men would report elevated levels of PTSD symptomatology following a trauma. An independent samples *t*-test was performed, revealing that there was a significant difference in PCL total scores between males ($M = 26.81$, $SD = 11.04$) and females ($M = 30.59$, $SD = 13.32$), $t(857) = -4.52$, $p < .001$, indicating that women endorsed significantly more PTSD symptomatology than did men. Moreover, after performing a chi-square test of independence to examine gender differences in whether or not participants met the criteria for the PCL cutoff score of 44, significant differences were also found, $\chi^2(1, N = 859) = 7.48$, $p < .01$, indicating that females were more likely to meet the cutoff criteria for PTSD. Thus, hypothesis one was supported.

Given that previous analyses revealed significant gender differences on the BSI, AAQ, and AQ, further analysis was performed to ensure that gender differences on the PCL total score (continuous) held even when the BSI, AAQ, and AQ were entered as covariates. A one-way between subjects ANOVA was conducted to compare the effect

of gender on psychopathology, acceptance and action, aggression, and PTSD symptomatology. There was still a significant effect of gender on PCL scores [$F(1, 857) = 19.03, p < .001$], with women ($M = 30.59$) reporting higher PCL scores than men ($M = 26.81$). However, there were also significant effects for acceptance and action [$F(1, 857) = 17.89, p < .001$], aggression [$F(1, 857) = 7.69, p = .006$], and general psychopathology [$F(1, 857) = 16.71, p < .001$]. Women scored higher on acceptance and action ($M = 34.54$) than did men ($M = 32.68$), as well as on psychopathology (women $M = .64$; men $M = .47$). Although men ($M = 75.01$) scored higher on aggression than did women ($M = 71.61$).

Hypothesis Two

It was hypothesized that both men and women would report more PTSD symptomatology if they have (e.g., score higher on) the following eight EMS: defectiveness/shame, dependence, enmeshment, failure, mistrust/abuse, vulnerability to harm or illness, negativity/pessimism, and punitiveness. To test this hypothesis, an independent samples *t*-test was performed, comparing whether or not participants met the PCL cutoff score of 44 and their EMS scores. Results indicated that there were significant differences, as participants who met the cutoff score on the PCL were more likely to score higher on not only the eight hypothesized EMS, but all EMS subscales. Even after employing a Bonferroni correction to account for multiple comparisons, which required a *p* value of .0027 or less, all comparisons were significant.

As mentioned above, all of the proposed EMS were determined to be significantly higher among participants who met the PCL cutoff for PTSD. Specifically, participants

who met the PCL cutoff ($M = 52.48$, $SD = 21.48$) were also significantly higher on defectiveness-shame than those who did not meet the PCL cutoff score ($M = 37.95$, $SD = 14.66$), $t(129.84) = -5.80$, $p < .001$. Participants who met the PCL cutoff ($M = 45.29$, $SD = 18.51$) were significantly higher on dependence than those who did not meet the PCL cutoff score ($M = 34.66$, $SD = 11.19$), $t(101.42) = -4.87$, $p < .001$. Participants who met the PCL cutoff ($M = 44.06$, $SD = 14.98$) were significantly higher on enmeshment than those who did not meet the PCL cutoff score ($M = 36.24$, $SD = 12.16$), $t(97.32) = -3.72$, $p < .001$. The participants who met the PCL cutoff ($M = 62.11$, $SD = 2.52$) were significantly higher on failure than those who did not meet the PCL cutoff score ($M = 47.70$, $SD = 14.87$), $t(99.88) = -5.01$, $p < .001$. Those who met the PCL cutoff ($M = 56.73$, $SD = 18.10$) were significantly higher on mistrust abuse than those who did not meet the PCL cutoff score ($M = 33.37$, $SD = 15.11$), $t(143.60) = -13.05$, $p < .001$. Participants who met the PCL cutoff ($M = 51.21$, $SD = 17.69$) were also significantly higher on vulnerability than those who did not meet the PCL cutoff score ($M = 37.54$, $SD = 11.37$), $t(117.91) = -6.87$, $p < .001$. Those who met the PCL cutoff ($M = 62.79$, $SD = 18.39$) were significantly higher on negativity-pessimism than those who did not meet the PCL cutoff score ($M = 47.11$, $SD = 15.36$), $t(128.47) = -7.36$, $p < .001$. Participants who met the PCL cutoff ($M = 59.52$, $SD = 17.40$) were significantly higher on punitiveness than those who did not meet the PCL cutoff score ($M = 47.07$, $SD = 12.99$), $t(115.24) = -6.57$, $p < .001$.

The remaining ten EMS, although not initially hypothesized to be associated with PTSD, also all emerged as significant. Participants who met the PCL cutoff ($M = 57.16$, $SD = 20.88$) scored significantly higher on emotional deprivation than those who did not

meet the cutoff score ($M = 43.61$, $SD = 15.73$), $t(120.08) = -5.40$, $p < .001$. Participants who met PCL criteria also had significantly higher scores on abandonment ($M = 56.93$, $SD = 17.92$) than those who did not meet the cutoff ($M = 40.78$, $SD = 14.45$), $t(159.81) = -8.62$, $p < .001$. Those who scored high on social isolation ($M = 57.72$, $SD = 20.15$) were significantly more likely to meet the PCL cutoff score than those who scored low ($M = 43.65$, $SD = 15.07$), $t(117.09) = -5.74$, $p < .001$. The participants who met the PCL cutoff ($M = 55.76$, $SD = 17.98$) were also significantly higher on subjugation than those who did not meet the PCL cutoff score ($M = 42.39$, $SD = 13.45$), $t(124.28) = -6.36$, $p < .001$. Those who met the PCL cutoff ($M = 64.12$, $SD = 16.62$) were significantly higher on self-sacrifice than those who did not meet the PCL cutoff score ($M = 52.03$, $SD = 13.86$), $t(145.29) = -7.33$, $p < .001$. Those who met the PCL cutoff ($M = 53.06$, $SD = 16.48$) were significantly higher on emotional inhibition than those who did not meet the PCL cutoff score ($M = 40.88$, $SD = 12.50$), $t(123.40) = -6.22$, $p < .001$. Participants who met the PCL cutoff ($M = 60.51$, $SD = 17.86$) scored significantly higher on unrelenting standards than those who did not meet the PCL cutoff score ($M = 51.09$, $SD = 14.79$), $t(138) = -5.21$, $p < .001$. The participants who met the PCL cutoff ($M = 49.39$, $SD = 14.59$) were significantly higher on entitlement than those who did not meet the PCL cutoff score ($M = 43.42$, $SD = 12.45$), $t(420) = -3.81$, $p < .001$. Those who met the PCL cutoff ($M = 48.75$, $SD = 15.21$) were significantly higher on insufficient self-control than those who did not meet the PCL cutoff score ($M = 39.73$, $SD = 12.31$), $t(433) = -5.94$, $p < .001$. Those who met the PCL cutoff ($M = 57.07$, $SD = 20.01$) were significantly higher on approval-seeking than those who did not meet the PCL cutoff score ($M = 45.82$, $SD = 14.58$), $t(112.03) = -5.11$, $p < .001$.

Thus, hypothesis two is supported, as participants who met the PCL cutoff score also scored significantly higher on the EMS of defectiveness-shame, dependence, enmeshment, failure, mistrust-abuse, vulnerability to harm or illness, negativity-pessimism, and punitiveness than participants who did not meet PCL cutoff. Furthermore, results indicate that high scores on all of the 18 EMS were associated with higher levels of PTSD symptomatology (i.e., higher PCL scores that surpassed the cutoff criteria for a diagnosis of PTSD). The EMS with the greatest differences in scores (e.g., EMS scores for the groups PCL cutoff met vs. PCL cutoff not met) were mistrust/abuse (23.36 point difference), abandonment (16.15 point difference), negativity-pessimism (15.68 point difference), defectiveness-shame (14.53 point difference), failure (14.41 point difference), and social isolation (14.07 point difference).

Given that it was hypothesized that EMS scores would be higher among those who met the PCL cutoff score regardless of gender, independent samples *t*-tests were run on each gender separately to examine this relationship further. For men, most EMS were again significantly higher for those who met the PCL cutoff score, with the exception of unrelenting standards and entitlement, both of which were not significant ($p > .05$). For women, all 18 EMS were again significantly higher for those who met the PCL cutoff score.

Hypothesis Three

It was also hypothesized that more women than men would report having the EMS of defectiveness-shame, dependence, enmeshment, failure, mistrust-abuse, vulnerability to harm or illness, negativity-pessimism, and punitiveness. An independent

samples *t*-test revealed that there were significant gender differences on several hypothesized YSQ subscales, as well as a few of the subscales that were not initially hypothesized.

Of the eight hypothesized EMS, women scored higher on failure, mistrust-abuse, vulnerability, and negativity pessimism. On the failure subscale, women ($M = 54.49$, $SD = 18.83$) scored significantly higher than did men ($M = 48.88$, $SD = 16.67$), $t(188) = -2.01$, $p < .05$. Women ($M = 39.31$, $SD = 18.72$) also scored significantly higher than men ($M = 33.16$, $SD = 15.25$) on the mistrust-abuse subscale, $t(720.19) = -4.97$, $p < .001$. Women ($M = 42.77$, $SD = 14.40$) scored significantly higher than did men ($M = 37.86$, $SD = 14.57$) on the vulnerability subscale, $t(341) = -2.95$, $p < .01$. On the negativity-pessimism subscale, women ($M = 51.97$, $SD = 17.59$) scored significantly higher than did men ($M = 48.21$, $SD = 16.76$), $t(388) = -2.02$, $p < .05$. No significant gender differences emerged on the defectiveness-shame, dependence, enmeshment, or punitiveness subscales.

Women also scored higher than men on several EMS subscales not initially hypothesized (i.e., abandonment, subjugation, self-sacrifice, and approval-seeking). On the abandonment subscale, women ($M = 47.14$, $SD = 16.91$) scored significantly higher than did men ($M = 39.89$, $SD = 15.77$), $t(446) = -4.35$, $p < .001$. On the subjugation subscale, women ($M = 47.50$, $SD = 16.16$) scored significantly higher than did men ($M = 43.15$, $SD = 15.11$), $t(327) = -2.39$, $p < .05$. Women ($M = 55.09$, $SD = 15.62$) scored significantly higher than did men ($M = 52.06$, $SD = 13.69$) on the self-sacrifice subscale, $t(634.67) = -2.74$, $p < .01$. Women ($M = 49.08$, $SD = 16.52$) also scored significantly higher than men ($M = 45.81$, $SD = 15.55$) on the approval-seeking subscale, $t(530) = -$

2.29, $p < .05$. No significant gender differences emerged on the emotional deprivation, social isolation, unrelenting standards, entitlement, insufficient self-control, which were not initially hypothesized to be higher in women.

Conversely, men ($M = 46.46$, $SD = 14.05$) scored significantly higher than did women ($M = 42.50$, $SD = 15.00$) on the emotional inhibition subscale, $t(314) = 2.39$, $p < .05$.

Thus, hypothesis three was partially supported, as the hypothesized EMS of failure, mistrust-abuse, vulnerability to harm or illness, and negativity-pessimism were significantly higher for women, as well as the EMS of abandonment, subjugation, self-sacrifice, and approval-seeking, which were not initially hypothesized. Though not part of the original hypothesis, emotional inhibition was higher in men than women. There were not significant gender differences on the hypothesized subscales of defectiveness/shame, dependence, enmeshment, or punitiveness. However, although the differences were not significant, mean scores were still higher for women than men on the subscales of defectiveness/shame ($p = .21$) and dependence ($p = .12$). Mean scores were only slightly higher for men on enmeshment ($p = .53$) and punitiveness ($p = .70$), though these differences also were not significant.

Hypothesis Four

Finally, it was proposed that the eight EMS thought to be associated with PTSD would mediate the connection between trauma and PTSD symptomatology. Tests of mediation were conducted for each of the hypothesized EMS. First, tests of mediation were performed using the PCL total score (continuous variable) in order to test the extent

to which the EMS mediated the relationship between trauma and PTSD symptomatology. The independent variable (IV) was the total number of traumas endorsed on the THQ, while the dependent variable (DV) was either entered as the PCL total score or a categorical variable of whether or not the PCL score met the cutoff of 44. The proposed mediator variables were the eight subscales of the YSQ (i.e., MA, FA, DS, DI, VU, EU, NP, and PU). Gender was controlled for during the tests of mediation. Other mediation tests were subsequently run on the remaining ten EMS to ascertain whether or not they mediated the trauma-PTSD relationship as well. Gender was also controlled for during these tests.

The bootstrapping method (Preacher & Hayes, 2008) of mediation analysis was employed, as it is a more robust test compared to the traditional mediation analysis proposed by Baron and Kenny (1986). Bootstrapping makes no distributional assumptions of normality and instead uses sample data to construct a sampling distribution by repeatedly sampling from within the gathered sample (Preacher & Hayes, 2004, 2008). For example, in a dataset with a sample size of N , B “bootstrap” samples of size N (usually 5000) are taken with replacement from the original dataset and the estimator of each of these B bootstrap samples is computed. The B bootstrap estimates are a sample of size B , allowing inferences to be made about the estimator (Preacher & Hayes, 2008). Additionally, bootstrapping provides a standard error and confidence interval for the median, for which parametric estimates are unavailable. As long as the confidence intervals do not contain 0 between their upper and lower bounds, it is accepted that the indirect effect is significant (Hayes, 2009; Preacher & Hayes, 2008). In this instance, 95% bias-corrected and accelerated (BCa) confidence intervals were

employed, which account for median bias and skewness, and are equivalent to the .05 α level of significance (Efron & Tibshirani, 1993).

Thus, bootstrapping allows for a nonparametric sampling procedure in which the indirect effect of an independent variable on a dependent variable via a mediating variable can be assessed. Bootstrapping is also different from traditional causal steps approaches to mediation analysis, as it is not necessary for there to be significant direct effects between the dependent variable, independent variable, and mediator, in order to establish that mediation has taken place (Hayes, 2009). Furthermore, using bootstrapping techniques decreases the chance of encountering Type I errors, affords more statistical power, and is thus better suited to smaller data sets than traditional mediation analyses (Preacher & Hayes, 2004). As per Preacher and Hayes (2008), a custom dialogue was downloaded from Hayes' website (www.afhayes.com/spss-sas-and-mplus-macros-and-code.html) and run in SPSS. It should be noted that this dialogue allows for the estimation of models with dichotomous outcome variables.

It was initially hypothesized that the eight EMS of mistrust-abuse, vulnerability, failure, enmeshment, defectiveness-shame, dependence, negativity-pessimism, and punitiveness would mediate the effect of trauma on PTSD symptomatology. However, given that all eighteen EMS were found to be higher in participants who met cutoff criteria for PTSD on the PCL, tests of mediation were performed for all eighteen EMS. Separate tests of indirect effects were conducted in which each EMS was entered into the mediation model individually. The eight EMS initially hypothesized to be mediators are discussed first. Of those eight EMS, mistrust-abuse and vulnerability emerged as significant mediators of the relationship between trauma and PTSD (See table 5).

Specifically, mistrust-abuse was entered in an indirect test of trauma on PTSD symptomatology (PCL total score – continuous). Results based on 5000 bootstrapped samples indicated that, controlling for the effect of gender [$b=1.31$, $se=.78$, $p=.09$], trauma had a significant Total Effect on PTSD symptomatology [Total Effect=.13, $se=.02$, $p<.001$], a significant residual Direct Effect [Direct Effect=.09, $se=.02$, $p<.001$], and a significant Indirect Effect [Indirect Effect=.04, $se=.06$, Lower Level CI =.01, Upper Level CI =.16, $p<.05$]. A Sobel test of mediation was also performed and was significant ($Z=2.97$, $p<.01$), although this did not allow for the control of gender. The indirect test was repeated using the PCL cutoff variable but results were not significant.

Vulnerability was entered in an indirect test of trauma on PTSD symptomatology (PCL total score – continuous). Results based on 5000 bootstrapped samples indicated that, controlling for the effect of gender [$b=-.08$, $se=1.45$, $p>.05$], trauma had a significant Total Effect on PTSD symptomatology [Total Effect=.10, $se=.03$, $p<.001$], a significant residual Direct Effect [Direct Effect=.08, $se=.03$, $p<.001$], and a significant Indirect Effect [Indirect Effect=.02, $se=.09$, Lower Level CI =.0001, Upper Level CI =.28, $p<.05$]. A Sobel test of mediation was also performed and was not significant ($Z=1.18$, $p>.05$), although this did not allow for the control of gender. The indirect test was repeated using the PCL cutoff variable but results were not significant.

Failure, enmeshment, defectiveness-shame, dependence, negativity-pessimism, and punitiveness were also entered into bootstrapping analyses, using both the PCL total and the PCL cutoff scores, but results were not significant.

Though not part of the initial eight EMS hypothesized to be mediators, the other ten EMS were also entered into indirect tests due to the fact that they were all found to be

higher in participants that met PCL cutoff criteria (i.e., hypothesis two). Of the ten non-hypothesized EMS, unrelenting standards, abandonment, subjugation, and self-sacrifice emerged as significant mediators.

Unrelenting standards was entered in an indirect test of trauma on PTSD symptomatology (PCL total score – continuous). Results based on 5000 bootstrapped samples indicated that, controlling for the effect of gender [$b=4.16$, $se=.94$, $p<.001$], trauma had a significant Total Effect on PTSD symptomatology [Total Effect=.12, $se=.02$, $p<.001$], a significant residual Direct Effect [Direct Effect=.10, $se=.02$, $p<.001$], and a significant Indirect Effect [Indirect Effect=.02, $se=.02$, Lower Level CI =.006, Upper Level CI =.06, $p<.05$]. A Sobel test was performed, which did not allow for the control of gender. Its results were significant ($Z=2.59$, $p<.01$). The same indirect test was repeated using the PCL cutoff variable but results were not significant.

Abandonment was entered in an indirect test of trauma on PTSD symptomatology (PCL total score – continuous). Results based on 5000 bootstrapped samples indicated that, controlling for the effect of gender [$b=.44$, $se=1.23$, $p>.05$], trauma had a significant Total Effect on PTSD symptomatology [Total Effect=.20, $se=.04$, $p<.001$], a significant residual Direct Effect [Direct Effect=.16, $se=.03$, $p<.001$], and a significant Indirect Effect [Indirect Effect=.04, $se=.11$, Lower Level CI =.001, Upper Level CI =.28, $p<.05$]. A Sobel test was performed, which did not allow for the control of gender. Its results were not significant ($Z=1.90$, $p=.06$). The same indirect test was repeated using the PCL cutoff variable but results were not significant.

Subjugation was entered in an indirect test of trauma on PTSD symptomatology (PCL total score – continuous). Results based on 5000 bootstrapped samples indicated that,

controlling for the effect of gender [$b=1.19$, $se=1.50$, $p>.05$], trauma had a significant Total Effect on PTSD symptomatology [Total Effect=.79, $se=.12$, $p<.001$], a significant residual Direct Effect [Direct Effect=.68, $se=.11$, $p<.001$], and a significant Indirect Effect [Indirect Effect=.11, $se=.06$, Lower Level CI =.02, Upper Level CI =.27, $p<.05$]. A Sobel test was performed, which did not allow for the control of gender. Its results were also significant ($Z=2.36$, $p<.05$). The same indirect test was repeated using the PCL cutoff variable, wherein subjugation was entered in an indirect test of trauma on PTSD symptomatology (PCL cutoff). Results based on 5000 bootstrapped samples indicated that, controlling for the effect of gender [$b=-.10$, $se=.30$, $p>.05$], trauma had a significant Total Effect on PTSD symptomatology [Total Effect=.10, $se=.02$, $p<.001$], a significant residual Direct Effect [Direct Effect=.10, $se=.02$, $p<.001$], and a significant Indirect Effect [Indirect Effect=.01, $se=.009$, Lower Level CI =.002, Upper Level CI =.04, $p<.05$].

Self-Sacrifice was entered in an indirect test of trauma on PTSD symptomatology (PCL total score – continuous). Results based on 5000 bootstrapped samples indicated that, controlling for the effect of gender [$b=3.11$, $se=.93$, $p<.001$], trauma had a significant Total Effect on PTSD symptomatology [Total Effect=.12, $se=.02$, $p<.001$], a significant residual Direct Effect [Direct Effect=.11, $se=.02$, $p<.001$], and a significant Indirect Effect [Indirect Effect=.02, $se=.02$, Lower Level CI =.003, Upper Level CI =.05, $p<.05$]. A Sobel test was performed, which did not allow for the control of gender. Its results were significant ($Z=2.30$, $p<.05$). The same indirect test was repeated using the PCL cutoff variable but results were not significant.

Emotional inhibition, social isolation, emotional deprivation, entitlement, approval-seeking, and insufficient self-control were entered in indirect tests of trauma on PTSD

symptomatology (using the PCL total score – continuous and the PCL cutoff score), but results were not significant.

These indirect tests revealed that, even after controlling for the effects of gender, mistrust-abuse, vulnerability, unrelenting standards, abandonment, subjugation, and self-sacrifice respectively were significant mediators of the effect of trauma on PTSD symptomatology ($p < .05$), as zero did not fall within their confidence intervals. The other twelve EMS did not emerge as significant mediators.

Finally, the six EMS that emerged as significant mediators (i.e., MA, VU, US, AB, SB, and SS) in the relationship between trauma and PTSD were entered into the model simultaneously utilizing the PCL total (continuous) score (See figure 1). Results based on 5000 bootstrapped samples indicated that, controlling for the effect of gender [$b = -1.02$, $se = 2.17$, $p > .05$], trauma had a significant Total Effect on PTSD symptomatology [Total Effect = .63, $se = .16$, $p < .001$], a significant residual Direct Effect [Direct Effect = .33, $se = .15$, $p < .05$], and a significant Indirect Effect [Indirect Effect = .30, $se = .13$, Lower Level CI = .09, Upper Level CI = .60, $p < .05$]. Results suggest that increases in PTSD symptomatology after a trauma were significantly and substantially mediated only by the abandonment variable. Abandonment met bootstrapping criteria for significance (i.e., lower 95% CI = .01, upper 95% CI = .29), as the indirect effect is significantly different from zero at $p < .05$ (two tailed), while all other bias corrected and accelerated confidence intervals for the EMS fell within the range of 0. The effect on PTSD symptomatology attributed to trauma was reduced from .63 to .33 by the set of six mediator variables (i.e., mistrust-abuse, vulnerability, unrelenting standards, abandonment, subjugation, and self-sacrifice). However, it was abandonment that

accounted for nearly all these mediational effects (.10 of the total of .30). Although not significant at the $p=.05$ level, mistrust-abuse accounted for .08 of the total .30 variance, and vulnerability accounted for .07 of the total .30, suggesting a trend. Results indicate that, when all variables are put into the model, there is a significant general multiple mediation so that the six EMS do mediate the effect of trauma on PTSD symptomatology (PCL total-continuous), although specifically only abandonment is unique. A Sobel test was also performed, which did not allow for the control of gender. The results were significant ($Z=3.22$, $p<.01$), indicating that mediation had occurred.

The same test was repeated using the PCL cutoff variable. Results based on 5000 bootstrapped samples indicated that, controlling for the effect of gender [$b=-.34$, $se=.40$, $p>.05$], trauma had a significant Total Effect on PTSD symptomatology [Total Effect=.07, $se=.02$, $p<.01$], no significant residual Direct Effect [Direct Effect=.04, $se=.03$, $p>.05$], but a significant Indirect Effect [Indirect Effect=.04, $se=.03$, Lower Level CI =.003, Upper Level CI =.10, $p<.05$]. Results suggest that increases in PTSD symptomatology after a trauma were significantly and substantially mediated by the six EMS variables. While the overall indirect effect was significant, no single EMS met bootstrapping significance, as the bias corrected and accelerated confidence intervals for each of the EMS fell within the range of 0. The effect on PTSD symptomatology attributed to trauma was reduced from .07 to .04 by the set of six mediator variables. Although not significant at the $p=.05$ level, abandonment accounted for .02 of the total .04 variance, while mistrust-abuse accounted for .01, and self-sacrifice accounted for .01 of the total .04, suggesting trends. Results indicate that, when all variables are put into the model, there is a significant general multiple mediation so that the six EMS do

mediate the effect of trauma on PTSD symptomatology (PCL cutoff), although no particular EMS emerged as unique.

Hypothesis Five

The EMS found to be significant in hypothesis three were hypothesized to mediate the relationship between gender and PTSD symptomatology in individuals who report traumatic experience. Only participants who reported at least one traumatic event were included in these analyses ($n=789$). Depression is highly prevalent among college populations, particularly in women, and has been found to be related to EMS (ACHA, 2006; Calvete, Estevez, Lopes-de-Arroyabe, & Ruiz, 2005; Harris & Curtin, 2002; Kessler et al., 2003; Schmidt, Joiner, Young, & Telch, 1995). For this reason, the BSI depression subscale was used to control for depression in these mediational analyses. Based on hypothesis three, the EMS found to differ significantly in regard to gender were entered individually into mediation models. These EMS consisted of mistrust-abuse, failure, vulnerability to harm or illness, and negativity-pessimism, as well as abandonment, subjugation, self-sacrifice, approval-seeking, and emotional inhibition. All EMS had significant mediational effects on the relationship between gender and PTSD symptomatology at the bivariate level, with the exception of approval-seeking, which was not a significant mediator.

Specifically, mistrust-abuse was entered in an indirect test of gender on PTSD symptomatology (PCL total score – continuous). Results based on 5000 bootstrapped samples indicated that, controlling for the effect of depression [$b=4.88$, $se=.55$, $p<.001$], gender had a significant Total Effect on PTSD symptomatology [Total Effect=2.69,

se=.87, $p<.01$], no significant residual Direct Effect [Direct Effect=1.41, se=.81, $p>.05$], and a significant Indirect Effect [Indirect Effect=1.27, se=.35, Lower Level CI =.65, Upper Level CI =2.03, $p<.05$]. The same indirect test was repeated using the PCL cutoff variable. Controlling for the effect of depression [$b=.88$, se=.14, $p<.001$], gender did not have a significant Total Effect on PTSD symptomatology [Total Effect=.46, se=.26, $p>.05$], and no significant residual Direct Effect [Direct Effect=.17, se=.27, $p>.05$], but did have a significant Indirect Effect [Indirect Effect=.24, se=.07, Lower Level CI =.11, Upper Level CI =.39, $p<.05$]. This indicates that mistrust-abuse was a significant positive mediator for the effect of gender on PTSD symptomatology.

Failure was entered in an indirect test of gender on PTSD symptomatology (PCL total score – continuous). Results based on 5000 bootstrapped samples indicated that, controlling for the effect of depression [$b=5.89$, se=1.00, $p<.001$], gender did not have a significant Total Effect on PTSD symptomatology [Total Effect=3.39, se=2.16, $p>.05$], and no significant residual Direct Effect [Direct Effect=2.27, se=2.11, $p>.05$], but there was a significant Indirect Effect [Indirect Effect=1.13, se=.69, Lower Level CI =.09, Upper Level CI =2.89, $p<.05$]. The same indirect test was repeated using the PCL cutoff variable. Controlling for the effect of depression [$b=.81$, se=.19, $p<.001$], gender did not have a significant Total Effect on PTSD symptomatology [Total Effect=.31, se=.39, $p>.05$], and had no significant residual Direct Effect [Direct Effect=.18, se=.40, $p>.05$], and a significant Indirect Effect [Indirect Effect=.16, se=.10, Lower Level CI =.01, Upper Level CI =.42, $p<.05$]. This indicates that failure was a significant positive mediator for the effect of gender on PTSD symptomatology.

Vulnerability was entered in an indirect test of gender on PTSD symptomatology (PCL total score – continuous). Results based on 5000 bootstrapped samples indicated that, controlling for the effect of depression [$b=4.83$, $se=.83$, $p<.001$], gender did not have a significant Total Effect on PTSD symptomatology [Total Effect= 1.86 , $se=1.51$, $p>.05$], no significant residual Direct Effect [Direct Effect= $.44$, $se=1.46$, $p>.05$], but a significant Indirect Effect [Indirect Effect= 1.41 , $se=.51$, Lower Level CI = $.57$, Upper Level CI = 2.60 , $p<.05$]. The same indirect test was repeated using the PCL cutoff variable. Controlling for the effect of depression [$b=.88$, $se=.17$, $p<.001$], gender did not have a significant Total Effect on PTSD symptomatology [Total Effect= $.28$, $se=.32$, $p>.05$], and no significant residual Direct Effect [Direct Effect= $.17$, $se=.33$, $p>.05$], but did have a significant Indirect Effect [Indirect Effect= $.17$, $se=.08$, Lower Level CI = $.06$, Upper Level CI = $.36$, $p<.05$]. This indicates that vulnerability was a significant positive mediator for the effect of gender on PTSD symptomatology.

Negativity-pessimism was entered in an indirect test of gender on PTSD symptomatology (PCL total score – continuous). Results based on 5000 bootstrapped samples indicated that, controlling for the effect of depression [$b=6.01$, $se=.80$, $p<.001$], gender did not have a significant Total Effect on PTSD symptomatology [Total Effect= 2.18 , $se=1.38$, $p>.05$], and no significant residual Direct Effect [Direct Effect= 1.74 , $se=1.37$, $p>.05$], but did have a significant Indirect Effect [Indirect Effect= $.44$, $se=.29$, Lower Level CI = $.03$, Upper Level CI = 1.19 , $p<.05$]. The same indirect test was repeated using the PCL cutoff variable. Controlling for the effect of depression [$b=.92$, $se=.16$, $p<.001$], gender did not have a significant Total Effect on PTSD symptomatology [Total Effect= $.43$, $se=.32$, $p>.05$], and did not have a significant

residual Direct Effect [Direct Effect=.31, $se=.32$, $p>.05$], but did have a significant Indirect Effect [Indirect Effect=.09, $se=.06$, Lower Level CI =.004, Upper Level CI =.25, $p<.05$]. This indicates that negativity-pessimism was a significant positive mediator for the effect of gender on PTSD symptomatology.

Abandonment was entered in an indirect test of gender on PTSD symptomatology (PCL total score – continuous). Results based on 5000 bootstrapped samples indicated that, controlling for the effect of depression [$b=4.46$, $se=.74$, $p<.001$], gender had a significant Total Effect on PTSD symptomatology [Total Effect=2.59, $se=1.31$, $p<.05$], no significant residual Direct Effect [Direct Effect=.87, $se=1.27$, $p>.05$], and a significant Indirect Effect [Indirect Effect=1.71, $se=.48$, Lower Level CI =.89, Upper Level CI =2.78, $p<.05$]. The same indirect test was repeated using the PCL cutoff variable. Controlling for the effect of depression [$b=.78$, $se=.15$, $p<.001$], gender had no significant Total Effect on PTSD symptomatology [Total Effect=.25, $se=.28$, $p>.05$], no significant residual Direct Effect [Direct Effect=.005, $se=.15$, $p>.05$], but a significant Indirect Effect [Indirect Effect=.25, $se=.08$, Lower Level CI =.11, Upper Level CI =.43, $p<.05$]. This indicates that abandonment was a significant positive mediator for the effect of gender on PTSD symptomatology.

Subjugation was entered in an indirect test of gender on PTSD symptomatology (PCL total score – continuous). Results based on 5000 bootstrapped samples indicated that, controlling for the effect of depression [$b=6.57$, $se=.83$, $p<.001$], gender did not have a significant Total Effect on PTSD symptomatology [Total Effect=2.72, $se=1.52$, $p>.05$], no significant residual Direct Effect [Direct Effect=2.10, $se=1.50$, $p>.05$], but a significant Indirect Effect [Indirect Effect=.62, $se=.40$, Lower Level CI =.05, Upper

Level CI =1.62, $p<.05$]. The same indirect test was repeated using the PCL cutoff variable. Controlling for the effect of depression [$b=1.00$, $se=.17$, $p<.001$], gender did not have a significant Total Effect on PTSD symptomatology [Total Effect=.27, $se=.01$, $p>.05$], no significant residual Direct Effect [Direct Effect=.18, $se=.32$, $p<.05$], but a significant Indirect Effect [Indirect Effect=.10, $se=.06$, Lower Level CI =.01, Upper Level CI =.27, $p<.05$]. This indicates that subjugation was a significant positive mediator for the effect of gender on PTSD symptomatology.

Self-sacrifice was entered in an indirect test of gender on PTSD symptomatology (PCL total score – continuous). Results based on 5000 bootstrapped samples indicated that, controlling for the effect of depression [$b=7.21$, $se=.51$, $p<.001$], gender had a significant Total Effect on PTSD symptomatology [Total Effect=2.86, $se=.89$, $p<.01$], a significant residual Direct Effect [Direct Effect=2.41, $se=.87$, $p<.01$], and a significant Indirect Effect [Indirect Effect=.45, $se=.22$, Lower Level CI =.09, Upper Level CI =.96, $p<.05$]. The same indirect test was repeated using the PCL cutoff variable controlling for the effect of depression [$b=1.21$, $se=.13$, $p<.001$], gender had no significant Total Effect on PTSD symptomatology [Total Effect=.48, $se=.26$, $p>.05$], no significant residual Direct Effect [Direct Effect=.40, $se=.27$, $p>.05$], and a significant Indirect Effect [Indirect Effect=.11, $se=.06$, Lower Level CI =.02, Upper Level CI =.24, $p<.05$]. This indicates that self-sacrifice was a significant positive mediator for the effect of gender on PTSD symptomatology.

Approval-seeking was entered in an indirect test of gender on PTSD symptomatology (PCL total score – continuous). Results based on 5000 bootstrapped samples indicated that, controlling for the effect of depression [$b=1.08$, $se=.15$, $p<.001$],

gender did not have a significant Total Effect on PTSD symptomatology [Total Effect=.36, $se=.28$, $p>.05$], nor did it have a significant residual Direct Effect [Direct Effect=.34, $se=.28$, $p>.05$], and had no significant Indirect Effect [Indirect Effect=.03, $se=.03$, Lower Level CI = -.01, Upper Level CI = .12, $p<.05$]. The same indirect test was repeated using the PCL cutoff variable but results were not significant. This indicates that approval-seeking was not a significant mediator for the effect of gender on PTSD symptomatology when analyzed using either the PCL total score or the PCL cutoff score.

Emotional inhibition was entered in an indirect test of gender on PTSD symptomatology (PCL total score – continuous). Results based on 5000 bootstrapped samples indicated that, controlling for the effect of depression [$b=6.19$, $se=.84$, $p<.001$], gender had a significant Total Effect on PTSD symptomatology [Total Effect=3.98, $se=1.47$, $p<.01$], a significant residual Direct Effect [Direct Effect=4.99, $se=1.49$, $p<.01$], and a significant Indirect Effect [Indirect Effect= -1.01, $se=.53$, Lower Level CI = -2.53, Upper Level CI = -.25, $p<.05$]. The same indirect test was repeated using the PCL cutoff variable. Controlling for the effect of depression [$b=.93$, $se=.17$, $p<.001$], gender had no significant Total Effect on PTSD symptomatology [Total Effect=.58, $se=.31$, $p>.05$], but a significant residual Direct Effect [Direct Effect=.83, $se=.33$, $p<.05$], and a significant Indirect Effect [Indirect Effect= -.22, $se=.10$, Lower Level CI = -.47, Upper Level CI = -.07, $p<.05$]. This indicates that emotional inhibition was a significant negative mediator for the effect of gender on PTSD symptomatology.

Finally, the EMS that were found to be significant mediators at the bivariate level were entered simultaneously into an indirect test of gender on PTSD symptomatology using the PCL continuous score (See figure 2). Results based on 5000 bootstrapped

samples indicated that, controlling for the effect of depression [$b=5.22$, $se=1.87$, $p<.01$], gender had a significant Total Effect on PTSD symptomatology [Total Effect= 7.44 , $se=3.30$, $p<.05$], no significant residual Direct Effect [Direct Effect= 1.62 , $se=3.49$, $p>.05$], and a significant Indirect Effect [Indirect Effect= 5.82 , $se=2.67$, Lower Level CI = 1.12 , Upper Level CI = 11.85 , $p<.05$]. The same indirect test was repeated using the PCL cutoff variable but results were not significant. Thus, the presence of the EMS of MA, FA, VU, NP, AB, SB, SS, and EI has a significant positive overall mediational effect on the relationship between gender and PTSD symptomatology. In the multivariate model, vulnerability emerged as a unique significant mediator, as its bias corrected and accelerated confidence intervals did not encompass zero [Indirect Effect= 1.63 , $se=2.67$, Lower Level CI = $.01$, Upper Level CI = 4.85 , $p<.05$]. Although, not significant, mistrust-abuse accounted for 3.60 of the overall indirect effect, which was 5.82.

DISCUSSION

Summary of Findings

General support was found for all hypotheses. Hypothesis one was supported as, consistent with the literature on gender and PTSD (Tolin & Foa, 2006), women were found to report significantly more PTSD symptomatology than men. As has been found by numerous studies (for review see Tolin & Foa, 2006), this finding reaffirms the fact that women report higher degrees of PTSD symptomatology regardless of differences in trauma type or frequency. This suggests, as posited by Simmons and Granvold (2005),

that the reason for the dissimilarity may lie in gender-based cognitive differences. Thus, hypothesis one solidifies the importance of further study in regard to gender differences in PTSD.

Hypothesis two speculated that, regardless of gender, participants with high EMS scores (specifically MA, FA, VU, EU, DS, DI, NP, and PU) would report more PTSD symptomatology. This hypothesis was confirmed and, furthermore, all of the eighteen EMS were found to be significantly higher in those who reported more PTSD. This finding suggests that there is a link between EMS and PTSD. While causal statements cannot be made from the results of this hypothesis, the fact remains that high scores on EMS, which are maladaptive ways of thinking about oneself and the world, are found in individuals with high levels of PTSD symptomatology. Given that EMS represent maladaptive cognitive and behavioral patterns, and that participants higher on EMS were also found to have scored higher on measures of general psychopathology, experiential avoidance, and anger, it may be that EMS are merely one aspect of the problems that accompany PTSD symptomatology. For example, individuals suffering from PTSD may be experiencing a general sense of distress and an inability to effectively cope with their situation, resulting in legitimately inflated profiles of psychopathology, anger, schemas, and avoidance. The fact that participants with PTSD symptomatology scored significantly higher on all EMS than those without PTSD symptomatology may indicate that those individuals are in crisis and therefore are more likely to endorse any items that describe personal and interpersonal distress.

However, EMS are described by Young as being maladaptive beliefs about the self, others, and world that serve as the basis for future interactions and behaviors, rendering

them (at least theoretically) as the lens through which all things are filtered; meaning they have the power to influence how one interprets events and interactions. In keeping with Young's ideas, the findings of hypothesis two support the notion that individuals with EMS would be more susceptible (i.e., cognitively vulnerable) to developing PTSD symptomatology, as they may be less apt at coping with a traumatic event. For instance, individuals with high EMS might tend to have difficulty establishing and maintaining relationships or interpreting events in a way that does not entail self-blame or intentional harm. This would not only affect the way they made meaning of a trauma (e.g., expecting to be hurt or abused and having that confirmed), but also the social support and processing afterwards. For this reason, it makes sense that EMS would be higher in individuals who report high PTSD symptomatology, but future research is needed to further explore the nature of the relationship between EMS and PTSD.

It was further hypothesized that women would be higher on the proposed eight initial EMS than men. Hypothesis three was partially confirmed, as women scored significantly higher on failure, mistrust-abuse, vulnerability, and negativity pessimism than did men. However, women also scored significantly higher on abandonment, subjugation, self-sacrifice, and approval-seeking than did men, although these were not included in the initial hypothesis. Interestingly, men scored significantly higher than women on emotional inhibition. While the eight EMS originally hypothesized to be related to increased PTSD symptomatology have been theorized and found to be related to the disorder (e.g., McCann, Sakheim, & Abrahamson, 1988; Price, 2007), the current findings suggest that a different set of EMS may be more relevant for women. The eight initially hypothesized EMS contained some but not all of the EMS that turned out to be

highest in women. As no previous study has examined gender differences in EMS as they relate to PTSD, these findings may have important implications both for future research and clinical interventions.

Hypothesis four, which stated that the eight EMS would mediate the relationship between trauma and PTSD, was also partially confirmed. Given that all of the eighteen EMS were found to be significantly higher in participants who met PCL cutoff scores for PTSD, all eighteen EMS were entered into separate bootstrap mediation analyses with trauma and PTSD symptomatology. Of the originally hypothesized eight EMS, only mistrust-abuse and vulnerability emerged as significant mediators. Of the remaining ten schemas, unrelenting standards, abandonment, subjugation, and self-sacrifice emerged as significant mediators of the effect of trauma on PTSD symptomatology. These six EMS were then entered into a multiple mediation model simultaneously. Of the six potential mediation factors for the development of PTSD symptomatology, only abandonment demonstrated a significant and substantial effect when using the PCL total score. These results suggest that overall the high levels of PTSD symptomatology can be partially attributed to the presence of the abandonment schema. When the model was run using the PCL cutoff score, no variable emerged as unique, though there was general mediation by the presence of all six EMS. These findings suggest that there is something about the cognitions related to these six EMS, and the abandonment schema in particular, that is linked to PTSD symptomatology. Similarly, though not significant at the $p=.05$ level, trends were found for mistrust abuse, vulnerability, and self-sacrifice. Thus, while the initial eight hypothesized EMS were not all mediators of the relationship between trauma and PTSD, a pattern did emerge among other schemas.

Finally, hypothesis five posited that, for individuals who reported they had experienced a trauma, the EMS found in hypothesis three to differ as a function of gender would partially mediate the relationship between gender and PTSD symptomatology. Of the hypothesized nine EMS (MA, FA, VU, NP, AB, SB, SS, EI, AS), eight were found to be significant mediators at the bivariate level. Approval-seeking was not significant mediator at the bivariate level. When the significant EMS were entered in a multivariate model, there was a significant overall mediational effect. Furthermore, vulnerability to harm or illness emerged as a significant and substantial mediator at this level. This suggests that the presence of these EMS has a considerable mediational effect on the relationship between gender and PTSD symptomatology, with vulnerability emerging as a unique mediator. Thus, the partial mediation of the effect of gender on PTSD symptomatology by these EMS indicates that the presence of (i.e., high scores on) these EMS can somewhat explain the relationship. These findings are consistent with the idea that women tend to have more negative beliefs about the self, world, and others than do men and that this cognitive difference may make them more vulnerable to PTSD following a trauma (Foa, Ehlers, Clark, Tolin, & Orsillo, 1999; Simmons, 2007; Simmons & Granvold, 2005). The EMS of MA, FA, VU, NP, AB, SB, and SS were all found to be significantly higher in women, while EI was found to be significantly higher in men. For women, although gender was found to have a direct effect on PTSD symptomatology, the effect was decreased by the mediators (MA, FA, VU, NP, AB, SB, and SS), such that to the extent that women reported these increased EMS, the gender effect on PTSD symptomatology was reduced. The same was true for men in regard to the EI EMS. This suggests that women and men differ in the types of EMS that are

related to increased symptomatology, which could have helpful clinical implications in terms of how interventions may be best tailored to PTSD patients based on their gender.

In summary, women reported more PTSD symptomatology, which was found to be related to high scores on all eighteen EMS. Women scored significantly higher than men on the EMS of failure, mistrust-abuse, vulnerability, negativity pessimism, abandonment, subjugation, self-sacrifice, and approval-seeking. It was found that mistrust-abuse, abandonment, vulnerability, unrelenting standards, subjugation, and self-sacrifice were significant mediators of the trauma-PTSD relationship. When tested simultaneously, there was a significant general mediation by the presence of the six EMS, with abandonment emerging as unique. Thus, these data establish a connection between EMS and PTSD, with six EMS standing out as partial mediators. Of special note is the fact that women scored significantly higher than men on five of the six EMS mediators, further solidifying the notion that gender differences in EMS may be a large part of the reason for the gender disparity in PTSD diagnoses. Moreover, the EMS of mistrust-abuse, abandonment, vulnerability, failure, negativity-pessimism, subjugation, self-sacrifice, and emotional inhibition were found to partially mediate the relationship between gender and PTSD symptomatology, with vulnerability emerging as unique.

Although not all of the initially hypothesized mediators in hypothesis four were significant (e.g., only MA and FA), it is pertinent to note that much of the initial hypothesis was inspired by Price's study. Price (2007) found that defectiveness, dependence, enmeshment, and failure were correlated with the intrusion and avoidance subscales of the IES, in a community sample of police, medical, and psychology professionals. The present study differs from Price's in several important ways, namely

that it is comprised of college students, is notably larger, and employs different measures of PTSD. It may be that this played a role in why such different EMS were found to be related to PTSD in the present study. Given that Price's study is one of the only other studies to have examined PTSD explore this relationship to solidify which EMS are specifically related to PTSD. It is worth noting that no single EMS domain emerged as unique, though disconnection and rejection as well as impaired autonomy and performance seemed to provide many of the EMS that were related to PTSD symptomatology.

The primary purpose of this study was two-fold, as it was designed to explore cognitive differences in individuals who do and do not develop PTSD, and to ascertain why women develop PTSD more than men. Accordingly, it was hypothesized that EMS constituted the reason behind both of these issues. Given that it was established that EMS mediated the relationship between trauma and PTSD, and that women have higher scores on EMS, it follows that women would be more susceptible to PTSD.

Specifically, abandonment seemed to have a very strong effect on the relationship between trauma and PTSD over and above the other five EMS in the multiple mediation model of hypothesis four. Young describes the EMS of abandonment, which is under the schema domain of disconnection and rejection, as a pervasive belief in the instability and unreliability of others' ability to provide support and connection (Young, Klosko, & Weishaar, 2003). Furthermore, the abandonment EMS is described as the sense that significant others will not be able to provide adequate emotional support, connection, strength, or practical protection, due to the others' own emotional instability,

unpredictability, unreliability, imminent mortality, or the belief that the other will abandon the individual for someone better (Young et al., 2003).

Mistrust-abuse, which emerged as a trend in hypotheses four and five, also falls within the domain of disconnection and rejection. Young and colleagues describe it as the assumption that others will hurt, abuse, embarrass, cheat, lie, manipulate, or take advantage of the individual, and is usually contingent on the belief that the harm is intentional or a result of egregious negligence (2003). Individuals with the mistrust-abuse EMS tend to feel perpetually cheated or wronged in relation to how others are treated (Young et al., 2003).

Vulnerability to harm or illness, which also emerged as a trend in hypothesis four and as a unique mediator in the multivariate model of hypothesis five, falls under the domain of impaired autonomy and performance, which involves beliefs the one is incapable of separating, surviving, functioning, or performing successfully (Young et al., 2003). The specific beliefs attributed to the vulnerability EMS pertain to a disproportionate fear that catastrophe is imminent and unavoidable, with specific regard to medical, emotional, and external catastrophes such as accidents and natural disasters (Young et al., 2003).

The core beliefs attributed to abandonment, mistrust-abuse, and vulnerability to harm or illness have certain underlying similarities. Each of the schemas refers in some way to the belief that harm, whether it be of an emotional or physical nature, is imminent, unavoidable, and either intentional or the result of negligence or inability on the part of oneself or others. Such negative beliefs about the self, world and others are consistent with other findings related to posttraumatic cognitions (Elwood & Williams, 2007; Foa, Ehlers, Clark, Tolin, & Orsillo, 1999). These beliefs coincide markedly with criteria C

and D from the DSM-IV criteria for PTSD, as persistent avoidance and arousal would be understandable responses to a trauma that confirmed the belief that one would be harmed and could be harmed again. In particular, several aspects of criterion C, such as a feeling of detachment and estrangement from others or a sense of a foreshortened future, seem to dovetail nicely with the EMS domain of disconnection and rejection (e.g., abandonment and mistrust-abuse). Similarly, the hypervigilance and irritability described in criterion D correspond to the EMS of vulnerability to harm or illness, as the belief that harm is imminent or intentional would surely result in increased arousal. However, while the EMS in this study found to mediate PTSD symptomatology appear to parallel the criteria for the disorder, it is still not known whether these types of cognitions pre-dated the trauma or were a result of it that merely serves to maintain and perpetuate the disorder.

As of yet, there is little information of a longitudinal nature that would shed light on whether negative cognitions about the self, world, and others pre-dates trauma or whether they arise from it (Dalglish, 1999). The Schematic, Propositional, Associative and Analogical Representational Systems (SPAARS) theory (Power & Dalglish, 1996) claims that individuals with extreme or rigid schemas are at an increased risk of developing PTSD, as the inflexibility of these schemas makes them less able to process and make meaning of traumatic information (Dalglish, 1999). Like Janoff-Bulman's shattered assumptions theory (1985), the SPAARS model proposes that excessively positive schemas (e.g. beliefs of invulnerability) are incongruous with the reality of a traumatic event, making it difficult to process and assimilate the information that is contradictory to the beliefs. However, the SPAARS model is unique in that it also accounts for the fact that it is possible for pre-existing negative core schemas to make an

individual more cognitively susceptible to PTSD following a trauma, as the trauma would be seen as confirmatory evidence of the negative beliefs about the self, world, or others, thereby heightening and perpetuating the individual's beliefs leading to increased PTSD symptomatology (Power & Dalgleish, 1996). Therefore, the SPAARS model allows for the presence of either positive or negative pre-trauma beliefs, or a mix of both. Findings from the current study lend support to the notion that negative beliefs are associated with trauma. Moreover, given that Young (2003) has hypothesized that EMS are formed in childhood or adolescence and have been found to have the same stability as personality disorder characteristics, it is likely that EMS are crystallized at a fairly young age. Given this theory, it would follow that the negative beliefs associated with EMS would exist pre-trauma. Again, this highlights the importance of future longitudinal study to affirm this notion.

Furthermore, given that this study has established that trauma-related EMS are found in higher degrees in women than men, it would seem to affirm Bem's gender schema theory (1981), which asserts that men and women are raised and socialized in significantly different ways, accounting for their differences in cognition. This idea could perhaps make for interesting studies in the future, as it would fit well with studies of a longitudinal nature. Though it may be difficult to undertake, developmental studies that assess parenting styles (e.g., how and how rigidly gender roles are enforced) in relation to the participants' EMS and experience (or not) of trauma as an adult would yield important and interesting results.

Limitations and Suggestions for Future Research

One limitation of the study was the small number of participants who met cutoff criteria for PTSD when using the PCL cutoff score. This may have resulted in a power issue during analyses. While bootstrapping of 5000 samples is the most appropriate test for a small sample, it will be important to replicate this study with a sample in which more participants meet criteria for PTSD.

The way the trauma variable was calculated may also be considered a limitation. While the THQ assessed for various trauma types and whether or not a trauma was repeated, the trauma variable used in the mediation analyses was a cumulative value consisting of the total number of traumas a person reported experiencing in their lifetime, including times when a trauma was repeated. The variable was computed in this way in order to assess total lifetime prevalence. This decision was made due to the fact that women have been found to report more PTSD than men regardless of trauma type or frequency (Tolin & Foa, 2006). Thus, for the purposes of the current study, it was only important to know if a participant had experienced trauma in general. However, this did not allow mediation analyses to take into account the nature of the trauma or trauma type (i.e., Type I, Type II Repeated, or Type III Multiple Complex). Future studies should consider taking these differences into account.

Another limitation was the non-clinical college sample, as it is not necessarily representative of the general population despite the fact that many participants reported a wide range of traumatic experiences and posttraumatic symptomatology. College students who have experienced trauma may represent a sample that is more cognitively resilient than the average person (Arehart-Treichel, 2004). While gathering data from a college population is important in the overall study of PTSD, as it assesses a group of

young adults who constitute a large portion of the population, future studies should continue to explore the relationship between EMS and PTSD in larger representative samples.

Recruitment for the portion of the study involving the ADIS questionnaire was also subject to limitation. Participants were presented with a question at the end of the online study asking them if they would be interested in coming in to a lab for an hour-long interview that would result in HPR credit. This resulted in a convenience sample of participants who indicated that they were willing to participate. Participants in this group may have been different from others who indicated they were not interested in attending, and thus may not be representative of the sample as a whole.

The current study required participants to utilize self-report measures to convey their traumatic experiences, which may have been either under- or over-reported. While the ADIS interview was utilized to ensure that those who met criteria for a PTSD diagnosis were in fact experiencing significant symptomatology to justify this claim, not all participants were able to be interviewed. In the future, it would be beneficial for self-report measures to be backed up if possible by clinician administered interviews. In terms of self-reported EMS, participants may under-report due to schema avoidance (e.g., denial) or overcompensation (e.g., knowing that one has a schema but striving to hide it) (Young, Klosko, & Weishaar, 2003). Young et al. (2003) suggest that, in instances where avoidance may be suspected, the Young Parenting Inventory (YPI) may be administered to more accurately assess an individual's EMS. Future studies might consider administering both the YSQ-L3 and the YPI in order to compare the two measures to ascertain the accuracy of an individual's schema pattern. The importance of

this step is highlighted by the high levels of experiential avoidance that were found in this sample, as well as the avoidance that is known to be a symptom of PTSD.

Another limitation of the current study is that it was cross-sectional, and thus is unable to address the issue of causality. Hence, it is not possible to ascertain whether EMS cause, or result from, PTSD. While theoretically, Young et al. (2003) provide convincing arguments that EMS are formed in childhood or early adolescence and are relatively stable, more data is needed to validate this claim. Future studies might consider ways in which longitudinal data may be gathered that could answer these questions. For example, schema questionnaires might be administered to adolescents and then re-administered several years later along with measures of PTSD, in order to assess whether individuals within that sample who may have experienced a trauma during the time between studies still maintained the same schema patterns. Given that many college students experience traumatic events during their time at a university, it is feasible for such a study to be conducted.

Furthermore, if specific pre-trauma EMS could be determined to be causal factors in the development of PTSD, it could have important clinical implications, as therapeutic interventions (such as schema therapy) could be targeted to those EMS. For example, there is already some precedence for utilizing schema therapy to treat PTSD, as a study of Vietnam veterans receiving schema-focused therapy, all of whom had PTSD, showed remarkable decreases in PTSD symptomatology and anxiety following treatment (Cockram, Drummond, & Lee, 2010). Schema therapy is designed to be tailored to the individual patient's needs by administering the schema questionnaire at the beginning of treatment. In this way, the therapist can focus exclusively on the EMS that are

problematic for the patient (Young et al., 2003). Given that the current study has further established a link between EMS and PTSD, it would follow that clinical interventions for PTSD may be more effective if they include schema-focused work. Although, it is not possible at this point to say whether EMS predate PTSD or vice versa until longitudinal studies are undertaken, the beauty of cognitive behavioral therapy, such as schema therapy, is that it can address the maladaptive beliefs and improve symptoms regardless of the beliefs' temporal origins.

Results of the present study have demonstrated that the EMS of abandonment and mistrust-abuse are mediators of PTSD symptomatology. Clinically, this could have major implications on trauma screening and treatment. For example, pre-deployment screening for military or other personnel who may be exposed to traumatic situations may help detect individuals that may be more at risk for PTSD and could allow for preventative measures. Similarly, mental health professionals may consider using the YSQL3 as a screening tool, noting that individuals with the schemas discovered to be related to PTSD may need careful assessment of their trauma history. As for therapy, the fact that abandonment and mistrust-abuse mediate PTSD could serve as a fruitful starting point for interventions. The approaches to understanding and eventually ameliorating these particular schemas, as suggested by Young et al. (2003) may be helpful when considering treatments for PTSD, especially for female patients. Future research may consider tailoring schema therapy to meet the needs of patients with PTSD. As demonstrated by hypotheses three and five, there is support for the idea that women would benefit from clinical interventions that focus on different cognitive themes from those that might be more pertinent to men. Specifically, interventions for women might

consider focusing on cognitions related to the idea that harm is imminent (e.g., thoughts related to the EMS of vulnerability to harm or illness or mistrust-abuse), while interventions for men might focus on issues related to avoidance and emotional inhibition.

In conclusion, even though the EMS were hypothesized to exist pre-trauma, it may be that individuals' cognitions about the self and the world were also affected by the trauma itself and the resulting PTSD. It could be possible that an increase in PTSD symptomatology may alter schemas because those who have PTSD differ cognitively from those who do not, or that certain schemas predispose individuals (especially women) to develop the disorder. Nevertheless, although this study cannot speak to causality, the fact remains that EMS mediated the relationship between trauma and PTSD symptomatology. While this study has established a link between gender, EMS, and PTSD, further study is needed to explore the exact nature of the relationship.

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APPENDICES

Appendix A
Demographics Questionnaire

1. Age: _____

2. Sex/Gender: Circle One Female / Male

3. Academic Level: Circle One
 1. Freshman
 2. Sophomore
 3. Junior
 4. Senior
 5. Post-Baccalaureate/Graduate Student

4. Ethnic/Racial Background: Circle One
 1. White/Caucasian
 2. Black/African-American
 3. Hispanic/Latino
 4. Asian-American
 5. Native American
 6. Indian/Middle Eastern
 7. Mixed race/ethnicity
 8. Other (please list): _____

5. Religious Background/Affiliation:
 1. Catholic

Circle One

2. Non-Catholic/Christian (e.g., Baptist)

3. Jewish

4. Muslim

5. Buddhist

6. Hindu

7. Atheist / Agnostic

8. Other (please list): _____

6. Family Income Level: Circle One
1. Less than \$20,000
 2. \$20,000 - \$40,000
 3. \$40,000 - \$60,000
 4. \$60,000 - \$80,000
 5. \$80,000 - \$100,000
 6. Greater than \$100,000

7. What is your current relationship status?

1. Not dating anyone right now
2. Dating
3. Engaged to be married
3. Married
4. Divorced/Widowed

8. Sexual Orientation (circle one): Heterosexual / Gay / Lesbian / Bisexual

9. Have you ever served in the military? Yes / No

10. If yes, how long? _____

Appendix B

Trauma History Questionnaire

The following is a series of questions about serious or traumatic life events. These types of events actually occur with some regularity, although we would like to believe they are rare, and they affect how people feel about, react to, and/or think about things subsequently. Knowing about the occurrence of such events, and reactions to them, will help us to develop programs for prevention, education, and other services. The questionnaire is divided into questions covering crime experiences, general disaster and trauma questions, and questions about physical and sexual experiences.

For each event, please indicate whether it happened, and if it did, the number of times and your approximate age when it happened (give your best guess if you are not sure). Also note the nature of your relationship to the person involved, and the specific nature of the event, if appropriate.

Crime-Related Events

		<u>If Yes</u>
	# of	Approx.
	Times	Age(s)
1. Has anyone ever tried to take something directly from you by using force or the threat		

- | | | | |
|--|----------|-------|-------|
| of force, such as a stick-up
or mugging? | No Yes | _____ | _____ |
| | | | |
| 2. Has anyone ever attempted to
rob you or actually robbed you
(i.e. stolen your personal
belongings)? | No Yes | _____ | _____ |
| | | | |
| 3. Has anyone ever attempted to or
succeeded in breaking into your
home when you weren't there? | No Yes | _____ | _____ |
| | | | |
| 4. Has anyone ever tried to or
succeeded in breaking into your
home while you <u>were</u> there? | No Yes | _____ | _____ |

General Disaster and Trauma

If Yes

Of

Approx

Times Age(s)

- | | | | |
|---|----------|-------|-------|
| 5. Have you ever had a serious
accident at work, in a car or
somewhere else? | No Yes | _____ | _____ |
|---|----------|-------|-------|

If yes, please specify

6. Have you ever experienced a natural disaster such as a tornado, hurricane, flood, major earthquake, etc., where you felt you or your loved ones were in danger of death or injury?

No Yes

If yes, please specify

7. Have you ever experienced a "man-made" disaster such as a train crash, building collapse, bank robbery, fire, etc., where you felt you or your loved ones were in danger of death or injury?

No Yes

If yes, please specify

8. Have you ever been exposed to

dangerous chemicals or radioac-
tivity that might threaten your
health?

No Yes

If yes, please specify

9. Have you ever been in any other
situation in which you were
seriously injured?

If yes, please specify

No Yes

10. Have you ever been in any other
situation in which you feared you
might be killed or seriously
injured?

No Yes

If yes, please specify

11. Have you ever seen someone

seriously injured or killed?

No Yes

If yes, please specify who

If Yes

Approx. # of

Times & Age(s)

12. Have you ever seen dead bodies

(other than at a funeral) or had

to handle dead bodies for any

reason?

No Yes

If yes, please specify

13. Have you ever had a close friend

or family member murdered, or

killed by a drunk driver?

No Yes

If yes, please specify

relationship (e.g.mother,

grandson,etc.)_____

14. Have you ever had a spouse,
romantic partner, or child die? No Yes _____
If yes, please specify
relationship_____
15. Have you ever had a serious
or life-threatening illness? No Yes _____
If yes, please specify

16. Have you ever received news of a
serious injury, life-threatening
illness or unexpected death
of someone close to you?
If yes, please indicate No Yes _____
17. Have you ever had to engage in
combat while in military service
in an official or unofficial war
zone? No Yes _____

If yes, please indicate where.

Physical and Sexual Experiences

If Yes

Was it repeated?

How often & what

Age(s)

18. Has anyone ever made you have

intercourse, oral or anal sex

against your will?

No Yes

If yes, please indicate

nature of relationship with

person (e.g. stranger, friend, relative, parent, sibling)_____

19. Has anyone ever touched

private parts of your body,

or made you touch theirs,

under force or threat?

No Yes

If yes, please indicate

nature of relationship with

person (e.g. stranger,

friend, relative, parent,

sibling)

20. Other than incidents mentioned in Questions 18 and 19, have there been any other situations in which another person tried to force you to have unwanted sexual contact?

No Yes

21. Has anyone, including family members or friends, ever attacked you with a gun, knife or some other weapon?

No	Yes

22. Has anyone, including family members or friends, ever attacked you without a weapon and seriously injured you?

No Yes _____

23. Has anyone in your family ever beaten, "spanked" or pushed you hard enough to

cause injury?

No Yes

Was it repeated? No Yes

If Yes

Approx. how often & what age(s)

Other Events

24. Have you experienced any
other extraordinarily
stressful situation or
event that is not covered
above?

No Yes

If yes, please specify.

Appendix C

PTSD Checklist - Specific Version

(PCL-S)

INSTRUCTIONS TO PATIENT: Below is a list of problems and complaints that people sometimes have in response to stressful experiences. Answer these questions in regard to the event you listed as the most difficult or traumatic life experience in the previous questionnaire. Please read each one carefully, select an answer to indicate how much you have been bothered by that problem in the past month.

What is the traumatic event? _____

1. Repeated, disturbing memories, thoughts, or images of a stressful experience?

1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely

2. Repeated, disturbing dreams of a stressful experience?

1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely

3. Suddenly acting or feeling as if a stressful experience were happening again (as if you were reliving it)?

1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely

4. Feeling very upset when something reminded you of a stressful experience?

1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely

5. Having physical reactions (e.g., heart pounding, trouble breathing, sweating) when something reminded you of a stressful experience?

1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely

6. Avoiding thinking about or talking about a stressful experience or avoiding having feelings related to it?

1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely

7. Avoiding activities or situations because they reminded you of a stressful experience?

1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely

8. Trouble remembering important parts of a stressful experience?

1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely

9. Loss of interest in activities that you used to enjoy?

1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely

10. Feeling distant or cut off from other people?

1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely

11. Feeling emotionally numb or being unable to have loving feelings for those close to you?

1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely

12. Feeling as if your future will somehow be cut short?

1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely

13. Trouble falling or staying asleep?

1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely

14. Feeling irritable or having angry outbursts?

1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely

15. Having difficulty concentrating?

1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely

16. Being "super-alert" or watchful or on guard?

1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely

17. Feeling jumpy or easily startled?

1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely

Appendix D
Young Schema Questionnaire Long Form
YSQ – L3

Name _____

Date _____

INSTRUCTIONS:

Listed below are statements that someone might use to describe him or herself.

Please read each statement and decide how well it describes you. When you are not sure, base your answer on what you emotionally feel, not on what you think to be true.

If you desire, reword the statement so that it would be even more accurate in describing you (but do not change the basic meaning of the question).

Then choose the highest rating from 1 to 6 that describes you (including your revisions), and write the number on the line before each statement.

RATING SCALE:

1 = Completely untrue of me

2 = Mostly untrue of me

3 = Slightly more true than untrue

4 = Moderately true of me

5 = Mostly true of me

6 = Describes me perfectly

EXAMPLE:

A. 4 I worry that people ("I care about") will not like me.

1. _____ People have not been there to meet my emotional needs.
 2. _____ I haven't gotten enough love and attention.
 3. _____ For the most part, I haven't had someone to depend on for advice and emotional support.
 4. _____ Most of the time, I haven't had someone to nurture me, share him/herself with me, or care deeply about everything that happens to me.
 5. _____ For much of my life, I haven't had someone who wanted to get close to me and spend a lot of time with me.
 6. _____ In general, people have not been there to give me warmth, holding, and affection.
 7. _____ For much of my life, I haven't felt that I am special to someone.
 8. _____ For the most part, I have not had someone who really listens to me, understands me, or is tuned into my true needs and feelings.
 9. _____ I have rarely had a strong person to give me sound advice or direction when I'm not sure what to do.
- *ed
10. _____ I worry that the people I love will die soon, even though there is little medical reason to support my concern.

11. _____ I find myself clinging to people I'm close to, because I'm afraid they'll leave me.
12. _____ I worry that people I feel close to will leave me or abandon me.
13. _____ I feel that I lack a stable base of emotional support.
14. _____ I don't feel that important relationships will last; I expect them to end.
15. _____ I feel addicted to partners who can't be there for me in a committed way.
16. _____ In the end, I will be alone.
17. _____ When I feel someone I care for pulling away from me, I get desperate.
18. _____ Sometimes I am so worried about people leaving me that I drive them away.
19. _____ I become upset when someone leaves me alone, even for a short period of time.
20. _____ I can't count on people who support me to be there on a regular basis.
21. _____ I can't let myself get really close to other people, because I can't be sure they'll always be there.
22. _____ It seems that the important people in my life are always coming and going.
23. _____ I worry a lot that the people I love will find someone else they prefer and leave me.
24. _____ The people close to me have been very unpredictable: one moment they're available and nice to me; the next, they're angry, upset, self-absorbed, fighting, etc.
25. _____ I need other people so much that I worry about losing them.
26. _____ I can't be myself or express what I really feel, or people will leave me.
- *ab
27. _____ I feel that people will take advantage of me.

28. _____ I often feel that I have to protect myself from other people.
29. _____ I feel that I cannot let my guard down in the presence of other people, or else they will intentionally hurt me.
30. _____ If someone acts nicely towards me, I assume that he/she must be after something.
31. _____ It is only a matter of time before someone betrays me.
32. _____ Most people only think about themselves.
33. _____ I have a great deal of difficulty trusting people.
34. _____ I am quite suspicious of other people's motives.
35. _____ Other people are rarely honest; they are usually not what they appear.
36. _____ I'm usually on the lookout for people's ulterior motives.
37. _____ If I think someone is out to hurt me, I try to hurt him or her first.
38. _____ People usually have to prove themselves to me before I can trust them.
39. _____ I set up "tests" for other people, to see if they are telling me the truth and are well-intentioned.
40. _____ I subscribe to the belief: "Control or be controlled."
41. _____ I get angry when I think about the ways I have been mistreated by other people during my life.
42. _____ During my life, those close to me have taken advantage of me or used me for their own purposes.
43. _____ I have been physically, emotionally, or sexually abused by important people in my life.

44. _____ I don't fit in.
45. _____ I'm fundamentally different from other people.
46. _____ I don't belong; I'm a loner.
47. _____ I feel alienated from other people.
48. _____ I feel isolated and alone.
49. _____ I always feel on the outside of groups.
50. _____ No one really understands me.
51. _____ My family was always different from the families around us.
52. _____ I sometimes feel as if I'm an alien.
53. _____ If I disappeared tomorrow, no one would notice.
- *si
54. _____ No man/woman I desire could love me once he/she saw my defects.
55. _____ No one I desire would want to stay close to me if he/she knew the real me.
56. _____ I am inherently flawed and defective.
57. _____ No matter how hard I try, I feel that I won't be able to get a significant man/woman to respect me or feel that I am worthwhile.
58. _____ I'm unworthy of the love, attention, and respect of others.
59. _____ I feel that I'm not lovable.
60. _____ I am too unacceptable in very basic ways to reveal myself to other people.
61. _____ If others found out about my basic defects, I could not face them.
62. _____ When people like me, I feel I am fooling them.
63. _____ I often find myself drawn to people who are very critical of me or reject me.
64. _____ I have inner secrets that I don't want people close to me to find out.

65. _____ It is my fault that my parent(s) could not love me enough.

66. _____ I don't let people know the real me.

67. _____ One of my greatest fears is that my defects will be exposed.

68. _____ I cannot understand how anyone could love me.

*ds

69. _____ Almost nothing I do at work (or school) is as good as other people can do.

70. _____ I'm incompetent when it comes to achievement.

71. _____ Most other people are more capable than I am in areas of work (or school) and achievement.

72. _____ I'm a failure.

73. _____ I'm not as talented as most people are at their work (or at school).

74. _____ I'm not as intelligent as most people when it comes to work (or school).

75. _____ I am humiliated by my failures and inadequacies in the work (or school) sphere.

76. _____ I often feel embarrassed around other people, because I don't measure up to them in terms of my accomplishments.

77. _____ I often compare my accomplishments with others and feel that they are much more successful.

*fa

78. _____ I do not feel capable of getting by on my own in everyday life.

79. _____ I need other people to help me get by.

80. _____ I do not feel I can cope well by myself.

81. _____ I believe that other people can take care of me better than I can take care of myself.

82. _____ I have trouble tackling new tasks outside of work, unless I have someone to guide me.
83. _____ I think of myself as a dependent person when it comes to everyday functioning.
84. _____ I screw up everything I try, even outside of work (or school).
85. _____ I'm inept in most areas of life.
86. _____ If I trust my own judgment in everyday situations, I'll make the wrong decision.
87. _____ I lack common sense.
88. _____ My judgment cannot be relied on in everyday situations.
89. _____ I don't feel confident about my ability to solve everyday problems that come up.
90. _____ I feel that I need someone I can rely on to give me advice about practical issues.
91. _____ I feel more like a child than an adult when it comes to handling everyday responsibilities.
92. _____ I find the responsibilities of everyday life overwhelming.
- *di
93. _____ I can't seem to escape the feeling that something bad is about to happen.
94. _____ I feel that a disaster (natural, criminal, financial, or medical) could strike at any moment.
95. _____ I worry about becoming a street person or vagrant.
96. _____ I worry about being attacked.

97. _____ I take great precautions to avoid getting sick or hurt.
98. _____ I worry that I'm developing a serious illness, even though nothing serious has been diagnosed by a physician.
99. _____ I am a fearful person.
100. _____ I worry a lot about the bad things happening in the world: crime, pollution, etc.
101. _____ I often feel that I might go crazy.
102. _____ I often feel that I'm going to have an anxiety attack.
103. _____ I often worry that I might have a heart attack or cancer, even though there is little medical reason to be concerned.
104. _____ I feel that the world is a dangerous place.
- *vu
105. _____ I have not been able to separate myself from my parent(s), the way other people my age seem to.
106. _____ My parent(s) and I tend to be overinvolved in each other's lives and problems.
107. _____ It is very difficult for my parent(s) and me to keep intimate details from each other, without feeling betrayed or guilty.
108. _____ My parent(s) and I have to speak to each other almost every day, or else one of us feels guilty, hurt, disappointed, or alone.
109. _____ I often feel that I do not have a separate identity from my parents or partner.
110. _____ I often feel as if my parent(s) are living through me -- I don't have a life of my own.

111. ____ It is very difficult for me to maintain any distance from the people I am intimate with; I have trouble keeping any separate sense of myself.
112. ____ I am so involved with my partner or parent(s) that I do not really know who I am or what I want.
113. ____ I have trouble separating my point of view or opinion from that of my parent(s) or partner.
114. ____ I often feel that I have no privacy when it comes to my parent(s) or partner.
115. ____ I feel that my parent(s) are, or would be, very hurt about my living on my own, away from them.
- *eu
116. ____ I let other people have their way, because I fear the consequences.
117. ____ I believe that if I do what I want, I'm only asking for trouble.
118. ____ I feel that I have no choice but to give in to other people's wishes, or else they will retaliate or reject me in some way.
119. ____ In relationships, I let the other person have the upper hand.
120. ____ I've always let others make choices for me, so I really don't know what I want for myself.
121. ____ I feel the major decisions in my life were not really my own.
122. ____ I worry a lot about pleasing other people, so they won't reject me.
123. ____ I have a lot of trouble demanding that my rights be respected and that my feelings be taken into account.
124. ____ I get back at people in little ways instead of showing my anger directly.
125. ____ I will go to much greater lengths than most people to avoid confrontations.

*sb

126. _____ I put others' needs before my own, or else I feel guilty.
127. _____ I feel guilty when I let other people down or disappoint them.
128. _____ I give more to other people than I get back in return.
129. _____ I'm the one who usually ends up taking care of the people I'm close to.
130. _____ There is almost nothing I couldn't put up with if I loved someone.
131. _____ I am a good person because I think of others more than of myself.
132. _____ At work, I'm usually the one to volunteer to do extra tasks or to put in extra time.
133. _____ No matter how busy I am, I can always find time for others.
134. _____ I can get by on very little, because my needs are minimal.
135. _____ I'm only happy when those around me are happy.
136. _____ I'm so busy doing for the people that I care about that I have little time for myself.
137. _____ I've always been the one who listens to everyone else's problems.
138. _____ I'm more comfortable giving a present than receiving one.
139. _____ Other people see me as doing too much for others and not enough for myself.
140. _____ No matter how much I give, I feel it is never enough.
141. _____ If I do what I want, I feel very uncomfortable.
142. _____ It's very difficult for me to ask others to take care of my needs.

*ss

143. _____ I worry about losing control of my actions.

144. _____ I worry that I might seriously harm someone physically or emotionally, if my anger gets out of control.

145. _____ I feel that I must control my emotions and impulses, or something bad is likely to happen.

146. _____ A lot of anger and resentment build up inside of me that I don't express.

147. _____ I am too self-conscious to show positive feelings to others (e.g., affection, showing I care).

148. _____ I find it embarrassing to express my feelings to others.

149. _____ I find it hard to be warm and spontaneous.

150. _____ I control myself so much that people think I am unemotional.

151. _____ People see me as uptight emotionally.

*ei

152. _____ I must be the best at most of what I do; I can't accept second best.

153. _____ I strive to keep almost everything in perfect order.

154. _____ I must look my best most of the time.

155. _____ I try to do my best; I can't settle for "good enough."

156. _____ I have so much to accomplish that there is almost no time to really relax.

157. _____ Almost nothing I do is quite good enough; I can always do better.

158. _____ I must meet all my responsibilities.

159. _____ I feel there is constant pressure for me to achieve and get things done.

160. _____ My relationships suffer because I push myself so hard.

161. _____ My health is suffering because I put myself under so much pressure to do well.

162. _____ I often sacrifice pleasure and happiness to meet my own standards.
163. _____ When I make a mistake, I deserve strong criticism.
164. _____ I can't let myself off the hook easily or make excuses for my mistakes.
165. _____ I'm a very competitive person.
166. _____ I put a good deal of emphasis on money or status.
167. _____ I always have to be Number One, in terms of my performance.

*us

168. _____ I have a lot of trouble accepting "no" for an answer when I want something from other people.
169. _____ I often get angry or irritable if I can't get what I want.
170. _____ I'm special and shouldn't have to accept many of the restrictions placed on other people.
171. _____ I hate to be constrained or kept from doing what I want.
172. _____ I feel that I shouldn't have to follow the normal rules and conventions other people do.
173. _____ I feel that what I have to offer is of greater value than the contributions of others.
174. _____ I usually put my needs ahead of the needs of others.
175. _____ I often find that I am so involved in my own priorities that I don't have time to give to friends or family.
176. _____ People often tell me I am very controlling about the ways things are done.
177. _____ I get very irritated when people won't do what I ask of them.
178. _____ I can't tolerate other people telling me what to do.

*et

179. _____ I have great difficulty getting myself to stop drinking, smoking, overeating, or other problem behaviors.
180. _____ I can't seem to discipline myself to complete routine or boring tasks.
181. _____ Often I allow myself to carry through on impulses and express emotions that get me into trouble or hurt other people.
182. _____ If I can't reach a goal, I become easily frustrated and give up.
183. _____ I have a very difficult time sacrificing immediate gratification to achieve a long-range goal.
184. _____ It often happens that, once I start to feel angry, I just can't control it.
185. _____ I tend to overdo things, even though I know they are bad for me.
186. _____ I get bored very easily.
187. _____ When tasks become difficult, I usually cannot persevere and complete them.
188. _____ I can't concentrate on anything for too long.
189. _____ I can't force myself to do things I don't enjoy, even when I know it's for my own good.
190. _____ I lose my temper at the slightest offense.
191. _____ I have rarely been able to stick to my resolutions.
192. _____ I can almost never hold back from showing people how I really feel, no matter what the cost may be.
193. _____ I often do things impulsively that I later regret.

*is

194. _____ It is important to me to be liked by almost everyone I know.

195. _____ I change myself depending on the people I'm with, so they'll like me more.
196. _____ I try hard to fit in.
197. _____ My self-esteem is based mostly on how other people view me.
198. _____ Having money and knowing important people make me feel worthwhile.
199. _____ I spend a lot of time on my physical appearance so people will value me.
200. _____ Accomplishments are most valuable to me if other people notice them.
201. _____ I am so focused on fitting in that sometimes I don't know who I am.
202. _____ I find it hard to set my own goals, without taking into account how others will respond to my choices.
203. _____ When I look at my life decisions, I see that I made most of them with other people's approval in mind.
204. _____ Even if I don't like someone, I still want him or her to like me.
205. _____ Unless I get a lot of attention from others, I feel less important.
206. _____ If I make remarks at a meeting or am introduced at a gathering, I look forward to recognition and admiration.
207. _____ Lots of praise and compliments make me feel like a worthwhile person.
- *as
208. _____ Even when things seem to be going well, I feel that it is only temporary.
209. _____ If something good happens, I worry that something bad is likely to follow.
210. _____ You can't be too careful; something will almost always go wrong.
211. _____ No matter how hard I work, I worry that I could be wiped out financially.
212. _____ I worry that a wrong decision could lead to disaster.

213. _____ I often obsess over minor decisions, because the consequences of making a mistake seem so serious.
214. _____ I feel better assuming that things will not work out for me, so that I don't feel disappointed if things go wrong.
215. _____ I focus more on the negative aspects of life and of events than on the positive.
216. _____ I tend to be pessimistic.
217. _____ People close to me consider me a worrier.
218. _____ If people get too enthusiastic about something, I become uncomfortable and feel like warning them of what could go wrong.
- *np
219. _____ If I make a mistake, I deserve to be punished.
220. _____ If I don't try my hardest, I should expect to lose out.
221. _____ There is no excuse if I make mistake.
222. _____ People who don't "pull their own weight" should get punished in some way.
223. _____ Most of the time, I don't accept the excuses other people make. They're just not willing to accept responsibility and pay the consequences.
224. _____ If I don't do the job, I should suffer the consequences.
225. _____ I often think about mistakes I've made and feel angry with myself.
226. _____ When people do something bad, I have trouble applying the phrase, "Forgive and forget".
227. _____ I hold grudges, even after someone has apologized.
228. _____ I get upset when I think someone has been "let off the hook" too easily.

229. _____ I get angry when people make excuses for themselves, or blame other people for their problems.

230. _____ It doesn't matter why I make a mistake; when I do something wrong, I should pay the price.

231. _____ I "beat up" on myself a lot for things I screw up.

232. _____ I'm a bad person who deserves to be punished.

*pu

Appendix E
Brief Symptom Inventory
 (BSI)

INSTRUCTIONS: Below is a list of problems and complaints that people sometimes have. For each one, tell me how much that problem has bothered or distressed you during the past week, including today, using the following scale.

	Not at All	A little bit	Moderately	Quite a bit	Extremely
1. Nervousness or shakiness inside.	1	2	3	4	5
2. Faintness or dizziness.	1	2	3	4	5
3. The idea that someone else can control your thoughts.	1	2	3	4	5
4. Feeling others are to blame for most of your troubles.	1	2	3	4	5
5. Trouble remembering things.	1	2	3	4	5

- | | | | | | |
|---|---|---|---|---|---|
| 6. Feeling easily annoyed or irritated. | 1 | 2 | 3 | 4 | 5 |
| 7. Pains in heart or chest. | 1 | 2 | 3 | 4 | 5 |
| 8. Feeling afraid in open spaces. | 1 | 2 | 3 | 4 | 5 |
| 9. Thoughts of ending your life. | 1 | 2 | 3 | 4 | 5 |
| 10. Feeling that most people cannot be trusted. | 1 | 2 | 3 | 4 | 5 |
| 11. Poor appetite. | 1 | 2 | 3 | 4 | 5 |
| 12. Suddenly scared for no reason. | 1 | 2 | 3 | 4 | 5 |
| 13. Temper outbursts that you could not control. | 1 | 2 | 3 | 4 | 5 |
| 14. Feeling lonely even when you are with people. | 1 | 2 | 3 | 4 | 5 |
| 15. Feeling blocked in getting things done. | 1 | 2 | 3 | 4 | 5 |

- | | | | | | |
|---|---|---|---|---|---|
| 16. Feeling lonely. | 1 | 2 | 3 | 4 | 5 |
| 17. Feeling blue. | 1 | 2 | 3 | 4 | 5 |
| 18. Feeling no interest in things. | 1 | 2 | 3 | 4 | 5 |
| 19. Feeling fearful. | 1 | 2 | 3 | 4 | 5 |
| 20. Your feelings being easily hurt. | 1 | 2 | 3 | 4 | 5 |
| 21. Feeling that people are unfriendly or dislike you. | 1 | 2 | 3 | 4 | 5 |
| 22. Feeling inferior to others. | 1 | 2 | 3 | 4 | 5 |
| 23. Nausea or upset stomach. | 1 | 2 | 3 | 4 | 5 |
| 24. Feeling that you are watched or talked about by others. | 1 | 2 | 3 | 4 | 5 |
| 25. Trouble falling asleep. | 1 | 2 | 3 | 4 | 5 |
| 26. Having to check and double check what you do. | | | | | |

	1	2	3	4	5
27. Difficulty in making decisions.	1	2	3	4	5
28. Feeling afraid to travel on buses, subways, or trains.	1	2	3	4	5
29. Trouble getting your breath.	1	2	3	4	5
30. Hot or cold spells.	1	2	3	4	5
31. Having to avoid certain things, places, or activities because they frighten you.	1	2	3	4	5
32. Your mind going blank.	1	2	3	4	5
33. Numbness or tingling in parts of your body.	1	2	3	4	5
34. The idea that you should be punished for your sins.	1	2	3	4	5

35. Feeling hopeless about the future.	1	2	3	4	5
36. Trouble concentrating.	1	2	3	4	5
37. Feeling weak in parts of your body.	1	2	3	4	5
38. Feeling tense or keyed up.	1	2	3	4	5
39. Thoughts of death or dying.	1	2	3	4	5
40. Having urges to beat, injure, or harm someone.	1	2	3	4	5
41. Having urges to break or smash things.	1	2	3	4	5
42. Feeling very self-conscious with others.	1	2	3	4	5
43. Feeling uneasy in crowds.	1	2	3	4	5
44. Never feeling close to another person.	1	2	3	4	5
45. Spells of terror or panic.	1	2	3	4	5

46. Getting into frequent arguments. 1 2 3 4 5

47. Feeling nervous when you are left alone. 1 2 3 4 5

48. Others not giving you proper credit for your achievements.

1 2 3 4 5

49. Feeling so restless you could not sit still. 1 2 3 4 5

50. Feelings of worthlessness. 1 2 3 4 5

51. Feeling that people will take advantage of you if you let them.

1 2 3 4 5

52. Feelings of guilt. 1 2 3 4 5

53. The idea that something is wrong with your mind.

1 2 3 4 5

Appendix F

Aggression Questionnaire

Instructions:

Using the 5 point scale shown below, indicate how uncharacteristic or characteristic each of the following statements is in describing you. Place your rating in the box to the right of the statement.

1 = extremely uncharacteristic of me

2 = somewhat uncharacteristic of me

3 = neither uncharacteristic nor characteristic of me

4 = somewhat characteristic of me

5 = extremely characteristic
of me

- | | | |
|-----|---|--------------|
| 1. | Some of my friends think I am a hothead | A (subscale) |
| 2. | If I have to resort to violence to protect my rights, I will. | PA |
| 3. | When people are especially nice to me, I wonder what they want. | H |
| 4. | I tell my friends openly when I disagree with them. | VA |
| 5. | I have become so mad that I have broken things. | PA |
| 6. | I can't help getting into arguments when people disagree with me. | VA |
| 7. | I wonder why sometimes I feel so bitter about things. | H |
| 8. | Once in a while, I can't control the urge to strike another person. | PA |
| 9.* | I am an even-tempered person. | A |
| 10. | I am suspicious of overly friendly strangers. | H |
| 11. | I have threatened people I know. | PA |
| 12. | I flare up quickly but get over it quickly. | A |
| 13. | Given enough provocation, I may hit another person. | PA |

- | | | |
|------|---|----|
| 14. | When people annoy me, I
may tell them what I think of
them. | VA |
| 15. | I am sometimes eaten up
with jealousy. | H |
| 16.* | I can think of no good
reason for ever hitting a
person. | PA |
| 17. | At times I feel I have gotten
a raw deal out of life. | H |
| 18. | I have trouble controlling
my temper. | A |
| 19. | When frustrated, I let my
irritation show. | A |
| 20. | I sometimes feel that people
are laughing at me behind
my back. | H |
| 21. | I often find myself
disagreeing with people. | VA |
| 22. | If somebody hits me, I hit
back. | PA |
| 23. | I sometimes feel like a
powder keg ready to
explode. | A |
| 24. | Other people always seem to
get the breaks. | H |
| 25. | There are people who
pushed me so far that we
came to blows. | PA |

Appendix G

Acceptance and Action Questionnaire

(AAQ)

Below you will find a list of statements. Please rate the truth of each statement as it applies to you. Use the following scale to make your choice.

1-----2-----3-----4-----5-----6-----7
 Never True___Very Seldom True___Seldom True___Sometimes True___Frequently True___Almost Always True___Always True

- _____ 1. I am able to take action on a problem even if I am uncertain what is the right thing to do.
- _____ 2. I often catch myself daydreaming about things I've done and what I would do differently next time.
- _____ 3. When I feel depressed or anxious, I am unable to take care of my responsibilities.
- _____ 4. I rarely worry about getting my anxieties, worries, and feelings under control.
- _____ 5. I'm not afraid of my feelings.
- _____ 6. When I evaluate something negatively, I usually recognize that this is just a reaction, not an objective fact.
- _____ 7. When I compare myself to other people, it seems that most of them are handling their lives better than I do.
- _____ 8. Anxiety is bad.
- _____ 9. If I could magically remove all the painful experiences I've had in my life, I would do so.
- _____ 10. I have been told by someone that I experienced a trauma that I don't remember
 If 2 or higher, please briefly list trauma_____

Ratings on items 1, 4, 5, and 6 are reversed for scoring purposes.

Appendix H

Anxiety Disorders Interview Schedule

(ADIS-IV)

Anxiety Disorders Interview Schedule for DSM-IV: Adult Version

Clinical Interview Schedule

PTSD Module

Introduction:

The interview should begin with a brief introduction and explanation of the purpose of the interview. A brief description of the presenting complaint should be obtained. In this section, a preliminary determination of the presence of panic attacks, phobic anxiety, and chronic worry should be made (as well as any medical difficulties or life circumstances that may be associated with the presenting complaints).

I will be asking you a number of questions about different areas of your life. First, I would like to get a general idea of what sorts of problems you have been having recently. What have they been?

If you had to identify one factor, what would you say is the main reason that brought you here today? (Record patient's response verbatim.)

In the past year, have you had any changes in or difficulties with:

Family / Relationships?

Legal Matters / Police?

Work / School?

Financial?

Health (self)?

Health (significant others)?

AFTER BRIEF INQUIRY:

Now I am going to ask you more questions about some specific kinds of problems that may or may not apply to you. We have already touched briefly on some of them, but now I would like to get more details.

POSTTRAUMATIC STRESS DISORDER/ACUTE STRESS DISORDER

I. INITIAL INQUIRY

1a. Have you ever experienced or witnessed a traumatic or life-threatening event such as assault, rape, seeing someone badly injured or killed, combat, accidents, or natural or man-made disasters?

YES___ NO___

If YES, specify nature and date of event(s); specify date trauma ended if the event persisted (e.g., ongoing physical abuse):

b. Do you recall any events of this nature occurring when you were a child?

YES___ NO___

If YES, specify nature and date of event(s); specify date trauma ended if the event persisted (e.g., ongoing physical abuse):

.....
 If NO to both 1a. and 1b., End interview.

c. What was your emotional response while the event was occurring? (Specify for each trauma reported in 1a. and 1b.)

If uncertain, **While the event was occurring, did you experience intense fear, helplessness, or horror?**

YES___ NO___

d. Currently, are you being bothered by such things as recurrent memories, thoughts, or dreams about the event, or distress when you hear or see things that remind you of the event?

YES___ NO___

If YES, **How soon after the event occurred/began did you begin having these symptoms?**

Skip to 2.

If NO,

e. Since the event occurred, have you ever been bothered by such things as recurrent and distressing memories, dreams, or thoughts about the event?

YES___ NO___

If NO, skip to 2.

After the event occurred, how soon did you begin to experience these distressing thoughts/memories/dreams?; When did these symptoms stop?

2. Re-experiencing Symptoms

Use the space below each symptom to record the specific nature of that symptom (e.g., cues that elicit distress associated with the trauma). Use comment section to record clinically useful information (e.g., duration of symptom more consistent with Acute Stress Disorder).

For each re-experiencing symptom, make ratings of Recurrence/Distress (i.e., frequency and intensity) using the scale and suggested queries below.

RECURRENCE / DISTRESS

Inquiry for patients who respond YES to either items 1d. or 1e.:

How often do you experience _____?; How much distress does/did this produce?

Inquiry for patients who respond NO to Items 1d. and 1e.:

Within a month after the event occurred/began, did you experience _____?; Currently, often do you experience _____?; How much distress does this produce?

0-----	1-----	2-----	3-----	4-----	5-----	6-----	7-----	8-----
No/ No distress		Rarely/ Mild distress		Occasionally/ Moderate distress		Frequently/ Severe distress		Constantly/ Extreme distress

	RECURRENCE / DISTRESS	COMMENTS
a. Intrusive recollections of the event (including images, thoughts, perceptions)		
b. Dreams of the event		
c. Acting or feeling as if the event were recurring (e.g., flashbacks, hallucinations, illusions, reliving the trauma)		

d. Emotional distress at exposure to
internal or external cues that are
reminders of the event

e. Physical response at exposure to
internal or external cues that are
reminders of the event

.....

.....

..... If no evidence of current or past re-experiencing symptoms, End interview.

II. CURRENT EPISODE

Now I want to ask you a series of questions about this current period when you have been experiencing recurrent and distressing memories/dreams/thoughts of the event.

Specify traumatic event: _____

1. Since the event occurred/began, how often have you experienced _____?; To what degree have you experienced _____?; Have you had this symptom only since the event occurred/began? (Do not record symptoms that are associated with other conditions such as panic, depression, generalized anxiety, etc.)

0-----1-----2-----3-----4-----5-----6-----7-----8
 Never/ Rarely/ Occasionally/ Frequently/ Constantly/
 None Mild Moderate Severe Very severe

ONSET SINCE
SEVERITY TRAUMA

a. avoidance of thoughts, feelings, or conversations associated with event

b. avoidance of activities, situations, or people that are reminders of the event

c. inability to recall important aspects of the event

d. loss of interest and/or decreased participation in significant activities

- | | | |
|---|-------|-----|
| e. feeling detached or emotionally distant from others | _____ | Y N |
| f. restricted emotions (e.g., unable to have pleasant or loving feelings) | _____ | Y N |
| g. sense of foreshortened future (e.g., does not expect career, marriage, normal life span) | _____ | Y N |
| | _____ | Y N |

2. Since the event occurred/began, how often have you experienced _____?; To what degree have you experienced _____?; Have you had this symptom only since the event occurred/began? (Do not record symptoms that are associated with other conditions such as panic, depression, generalized anxiety, etc.)

0-----	1-----	2-----	3-----	4-----	5-----	6-----	7-----	8-----
Never/ None		Rarely/ Mild		Occasionally/ Moderate		Frequently/ Severe		Constantly/ Very severe
							ONSET SINCE	
							SEVERITY	TRAUMA

- | | | |
|--|-------|-----|
| a. difficulty falling or staying asleep | _____ | Y N |
| b. irritability or outbursts of anger | _____ | Y N |
| c. difficulty concentrating | _____ | Y N |
| d. hypervigilance (e.g., constant vigilance of surroundings) | _____ | Y N |
| e. exaggerated startle response | _____ | Y N |

3. In what ways have these recurrent and distressing memories/thoughts/dreams and the symptoms associated with them interfered with your life (e.g., daily routine, job, social activities)?; How much are you bothered by these symptoms?

Rate interference: _____ distress: _____

0-----	1-----	2-----	3-----	4-----	5-----	6-----	7-----	8-----
Never/ None		Rarely/ Mild		Occasionally/ Moderate		Frequently/ Severe		Constantly/ Very severe

If there is any uncertainty regarding when the traumatic event occurred/began, ask:

4a. Do you recall the specific date that the event occurred/began? (Note: if patient is vague in date of occurrence, attempt to ascertain more specific information, e.g., by linking onset to objective life events.)

Date of Event: _____ Month _____ Year

For events that were ongoing (e.g., recurrent physical abuse), ask:

b. Do you recall the specific date that the event ended?

Date Event Ended: _____ Month _____ Year

If there is any uncertainty regarding the onset of the disorder, ask:

5a. When did these recurrent and distressing memories/thoughts/dreams and the symptoms associated with them become a problem in that they occurred persistently, you were bothered by the symptoms and they interfered with your life in some way? (Note: if patient is vague in date of onset, attempt to ascertain more specific information, e.g., by linking onset to objective life events.)

Date of Onset: _____ Month _____ Year

b. How soon after the event occurred/began did you begin having the recurrent and distressing memories/thoughts/dreams as well as the other symptoms associated with them?

Note: Assign PTSD with Delayed Onset if syndrome began at least 6 months after the stressor. If symptoms occurred within four weeks of the event and lasted no longer than four weeks, consider Acute Stress Disorder.

Besides this current period of time when you've been having these recurrent and distressing memories/thoughts/dreams, have there been other, separate periods of time before this when you have had the same problems either in relation to this event or to another event?

YES _____ NO _____

If YES, the clinician should consider inquiring about past episodes, particularly if the clinician determines that this information may be important for clinical or diagnostic reasons.

Date(s) of prior episodes: _____

III. ACUTE STRESS DISORDER

If it has been determined that the patient has experienced a traumatic event associated with symptoms of re-experiencing and avoidance of trauma-related stimuli and symptoms of marked arousal/anxiety that emerged within four weeks of the event and lasted no longer than four weeks, administer this section.

Specify traumatic event: _____

1. **Since the event occurred/began, how often have you experienced _____?; To what degree do you experience _____?** (Do not record symptoms that are associated with other conditions such as panic, depression, generalized anxiety, etc.)

0-----1-----2-----3-----4-----5-----6-----7-----8
 Never/ Rarely/ Occasionally/ Frequently/ Constantly/
 None Mild Moderate Severe Very severe

	SEVERITY	COMMENTS
a. sense of numbing, detachment, or absence of emotional responsiveness	_____	_____
b. decreased awareness of surroundings (e.g., being in a “daze”)	_____	_____
c. derealization	_____	_____
d. depersonalization	_____	_____
e. inability to recall an important aspect of the event	_____	_____
f. being restless, unable to sit still	_____	_____

Note: Rating for motor restlessness (1f.) applies not to the B criterion of Acute Stress Disorder but to the E criterion 9the remaining symptoms of the E criterion are rated previously in PTSD).

2. **How long after the event occurred/began, did you begin to experience these symptoms?**

3. During the past several weeks, have you been regularly taking any types of drugs? (include drugs of abuse, medication.)

YES _____ NO _____

Specify (type; amount; dates of use):

4. During the past several weeks, have you had any physical conditions?

YES _____ NO _____

Specify (type; date of onset/remission):

Appendix I

Consent for Participation in a Research Project

Life Experiences & Perceptions Study

Invitation to Participate and Description of Project

You are invited to participate in a research study designed to assess your experiences and world views. Participation will consist of answering an online survey. The study will consist of a few online questionnaires that will take approximately 60 minutes to complete. You will receive 4 credits in HPR for completing this survey.

In order to decide whether or not you wish to be a part of this research study, you should know enough about its risks and benefits to make an informed judgment. This consent form gives you detailed information about the research study. This consent form should cover all aspects of this research: its purpose, the procedures that will be performed, and any risks of the procedures, possible benefits and possible alternative treatments. Once you understand the study, you will be asked if you wish to participate; if so, you will be asked to click the “consent” button, indicating that you give consent to participate.

Description of Procedures

If you decide to participate, you will be asked to complete an online survey regarding your life experiences, mood, perceptions, and opinions. You will be asked

questions about whether or not you have experienced a traumatic event and, if so, what effect that event has had on your feelings and behavior. You will also be asked questions about your health and the way you think about the world.

Risks and Inconveniences

There is very little risk to participating in this study. You may decide to end your participation in the study at any time. A potential risk is the loss of confidentiality. None of the information you might share regarding sensitive aspects of your experience will be shared with anyone, including university officials, parents, or police. Your name will not be linked to your answers to survey questions, as the online survey is completely anonymous. To ensure that the information you provide us remains confidential, it will be identified with a numeric code only and stored in a locked file cabinet or on a password protected computer in a locked lab room. Only the research team will be able to access your name during the study and they will only be able to see that you took the study (there is nothing linking your name to the data).

Another possible risk is that answering some of the questions may bring up difficult memories, as some questions are in regard to trauma. It is not required that you answer these questions. You can choose to skip them without any penalty if they are upsetting to you. If answering them does prove distressing, a list of referrals is provided at the end of the study and may also be requested by emailing the researchers.

Benefits

Participants have a chance to contribute to a scientific study that may help people in the future. In addition, for those participants who wish to receive additional counseling, a referral list will automatically appear at the end of the study.

Compensation

Your participation will last approximately 60 minutes. Thus, you will receive 4 credit points in your Psychology course for completing this study.

Alternative Treatments

In case of any discomfort from participating in this study, you can expect to receive the following treatment or care which will be sought after by you and provided at your expense: assistance from the UT Counseling Center (974-2196) or the UT Psychological Clinic (974-2161).

Confidentiality

To ensure that the information you provide us remains confidential, the data you provide will be identified with a numeric code only and stored on a password protected computer in a locked lab office. The website on which the survey is housed is also password encrypted and only researchers working on this study will be able to download it. You will not be personally identified in any reports or publications that may result from this study. None of the information you provide us will be shared with anyone, including university officials, parents, police, or your relationship partner (if you have one). The only exception to confidentiality is the duty to notify the appropriate

authorities in compliance with state law if we become aware of the possibility of a participant posing an imminent risk to him or herself or another, though the surveys do not ask such questions.

Voluntary Participation

You are free to decide whether or not to participate in this study and free to withdraw from the study at any time. Refusal to participate will not result in any penalties. While withdrawing from the study at any time will not result in any penalties, you will not receive credit in your Psychology course if you elect to withdraw prior to beginning the questionnaires.

Authorization: I have read this form thoroughly and I voluntarily agree to participate in this study as indicated by my responding to the online consent prompt. I can print a copy of this consent form for my records or contact Vanessa Handsel to receive a copy at (865) 257-5024. I agree that by clicking the “consent” button it will serve as my electronic signature. If you have further questions about this project, please contact:

Vanessa Handsel

Email: vhandsel@utk.edu

Telephone: 865-257-5024

For research-related problems or questions regarding subjects’ rights, the Institutional Review Board may be contacted through the Compliance Office at 974-3466.

Appendix J

Referral List

Knoxville Area Services for Women:

211-East Tennessee Information and Referral (Non-emergency line for health & human service information)

AGAPE 525-1661 - 428 East Scott Avenue, Knoxville, Tennessee 37917

Halfway House and Residential Treatment

A residential treatment program for female substance abusers.

CATHOLIC CHARITIES 524-9896 - 3009 Lake Brook Boulevard, Knoxville, Tennessee 37909. This program provides a safe and supportive place for, or when, people stay on a short-term basis. It provides support when someone leaves their home because of abuse, exploitation, neglect, self-neglect, or when a financial crisis leads to a loss of housing, times where the present home is unsafe or in need of major repair, or during any emergency that threatens one's safety.

CHILD & FAMILY TENNESSEE 524-7483 - 901 East Summit Hill Drive, Knoxville, Tennessee 37915

Family Crisis Center

This program provides an emergency shelter for abused women ages 18 and older,

with or without children. In addition to shelter, they receive treatment and case management services.

Family Life Enrichment

This program provides assistance to individuals and/or families concerning such issues as marriage, divorce, family violence, sexual abuse, parent-child problems, dealing with grief, and other areas.

PASAAC/ Sex Abuse Counseling

This program assists individuals and families affected by sexual abuse. The program helps them to cope with the trauma and understand their individual and family dynamics so they can lead personally satisfying, socially useful lives and prevent further occurrences of abuse.

Therapy Center

A licensed outpatient mental health program that provides psychotherapy for individual and family emotional problems. Services are provided for people of all ages and income levels.

CONTACT OF KNOXVILLE 523-9108 / 523-9124 (Helpline) P.O. Box 11234,

Knoxville, Tennessee 37939-1234

This service provides telephone counseling for clients in crisis.

HELEN ROSS McNABB CENTER 637-9711 - 201 West Springdale Avenue,

Knoxville, Tennessee 37917

Adult Residential

A detoxification service in a short-term residential rehabilitation facility that includes group and individual counseling, chemical dependency education, life skills training, family and aftercare counseling, referral, and assessment.

Sisters of the Rainbow

This service provides day treatment to women whose lives are affected by substance abuse and addiction.

Women's Intensive Outpatient

This program provides outpatient substance abuse support services to women whose lives are affected by their own substance abuse.

LADIES OF CHARITY 524-0538 - Administrative Office: 119 Dameron Avenue,
Knoxville, Tennessee 37917-6414

Thrift Store: 1031 North Central Avenue, Knoxville, Tennessee 37917-6449

This program provides emergency assistance such as food, rent, medication, clothing, and limited utility assistance to individuals and families.

LEGAL AID OF EAST TENNESSEE 637-0484 - 502 South Gay Street, Suite 404,
Knoxville, Tennessee 37902-1595 Domestic Violence Civil Legal Services

This program provides legal representation to victims of domestic violence with the goal of ending physical and psychological abuse.

MENTAL HEALTH ASSOCIATION 584-9125 - 9050 Executive Park Drive, Suite 104-A, P. O. Box 32731, Knoxville, Tennessee 37930-2731

Client Service Programs

This program assists individuals who are mentally and emotionally disturbed and their families with direct services such as depression screenings, matched mentors, and material resources.

THE SALVATION ARMY 525-9401 - 409 North Broadway, P.O. Box 669, Knoxville, Tennessee 37901 Emergency Assistance Program

This is an emergency service program that provides financial assistance and supplementary aid such as food, clothing, prescriptions, and furniture to local families and individuals in emergency situations.

Joy Baker Center

This program for women provides emergency residential services and ongoing treatment and support. Information and referrals are also provided in an effort to end the cycle of victimization and enable clients to positively restructure their lives.

SAFE HAVEN CRISIS AND RECOVERY CENTER FOR SEXUAL ASSAULT

522-7273 (crisis line) 558-9040 (administration) P.O. Box 11523, Knoxville, Tennessee 37939-1523 Victim Assistance

A program providing a variety of services to victims of rape and sexual abuse including 24-hour crisis counseling, medical information, hospital and court accompaniment, legal

information, and cooperation with law enforcement officials. It also operates the Rape Hotline, 522 RAPE.

YWCA 523-6126 420 West Clinch Avenue SW, Knoxville, Tennessee 37902-2198

Residential Program

This service provides residence for women who are in transitional situations brought about after personal traumas such as divorce, the death of spouse, or escape from abuse from a spouse or family member.

Victim Advocacy Program

The program provides direct services to victims of domestic violence and elder abuse. These services include crisis intervention, intake and needs assessment, assistance in completing court documents, preparation of victims for court appearances, accompaniment to court, and referral to other community agencies. This program also includes community education presentations and training sessions for local police officers and attorneys.

Knoxville Area Services for Men:

211-East Tennessee Information and Referral (Non-emergency line for health & human service information)

CATHOLIC CHARITIES 524-9896

3009 Lake Brook Boulevard, Knoxville, Tennessee 37909

This program provides a safe and supportive place for, or when, people stay on a short-term basis. It provides support when someone leaves their home because of abuse, exploitation, neglect, self-neglect, or when a financial crisis leads to a loss of housing, times where the present home is unsafe or in need of major repair, or during any emergency that threatens one's safety.

CHILD & FAMILY TENNESSEE 524-7483

901 East Summit Hill Drive, Knoxville, Tennessee 37915

Family Life Enrichment

This program provides assistance to individuals and/or families concerning such issues as marriage, divorce, family violence, sexual abuse, parent-child problems, dealing with grief, and other areas.

Managing Emotions Nonviolently

This program provides group counseling for men who have been referred by the courts for spousal and/or family abuse.

PASAAC/ Sex Abuse Counseling

This program assists individuals and families affected by sexual abuse. The program helps them to cope with the trauma and understand their individual and family dynamics so they can lead personally satisfying, socially useful lives and prevent further occurrences of abuse.

Therapy Center

A licensed outpatient mental health program that provides psychotherapy for individual and family emotional problems. Services are provided for people of all ages and income levels.

CONTACT OF KNOXVILLE 523-9108 / 523-9124 (Helpline) P.O. Box 11234,

Knoxville, Tennessee 37939-1234

This service provides telephone counseling for clients in crisis.

HELEN ROSS McNABB CENTER 637-9711 201 West Springdale Avenue,

Knoxville, Tennessee 37917

Adult Residential

A detoxification service in a short-term residential rehabilitation facility that includes group and individual counseling, chemical dependency education, life skills training, family and aftercare counseling, referral, and assessment.

Men's Intensive Outpatient

This service provides outpatient substance abuse support services to men whose lives are affected by their own substance abuse.

LADIES OF CHARITY 524-0538

Administrative Office: 119 Dameron Avenue, Knoxville, Tennessee 37917-6414

Thrift Store: 1031 North Central Avenue, Knoxville, Tennessee 37917-6449

This program provides emergency assistance such as food, rent, medication, clothing, and limited utility assistance to individuals and families. Non-utility fuel assistance is also available for coal, firewood, and kerosene. Transportation assistance is provided in the form of a gas voucher or bus passes for transportation to a job or interview, social services appointments, or funerals.

LEGAL AID OF EAST TENNESSEE 637-0484 502 South Gay Street, Suite 404,
Knoxville, Tennessee 37902-1595

Domestic Violence Civil Legal Services

This program provides legal representation to victims of domestic violence with the goal of ending physical and psychological abuse.

MENTAL HEALTH ASSOCIATION 584-9125 -

9050 Executive Park Drive, Suite 104-A, P. O. Box 32731, Knoxville, Tennessee 37930-2731

Client Service Programs

This program assists individuals who are mentally and emotionally disturbed and their families with direct services such as depression screenings, matched mentors, and material resources.

THE SALVATION ARMY

525-9401

409 North Broadway, P.O. Box 669, Knoxville, Tennessee 37901

Emergency Assistance Program

This is an emergency service program that provides financial assistance and supplementary aid such as food, clothing, prescriptions, and furniture to local families and individuals in emergency situations.

Men's Shelter Program

A service providing emergency shelter care for homeless and transient men in crisis.

Services include lodging, meals, clothing, and counseling.

YWCA 523-6126 - 420 West Clinch Avenue SW, Knoxville, Tennessee 37902-2198

Victim Advocacy Program

The program provides direct services to victims of domestic violence. These services include crisis intervention, intake and needs assessment, assistance in completing court documents, preparation of victims for court appearances, accompaniment to court, and referral to other community agencies. This program also includes community education presentations and training sessions for local police officers and attorneys.

Appendix K

Research Team Member's Pledge of Confidentiality

As a member of this project's research team, I understand that I will potentially have access to participants' email addresses and will have access to their confidential survey information. The answers to online questions asked in this study have been revealed by research participants who participated in this project on good faith that their information would remain strictly confidential. I understand that I have a responsibility to honor this confidentiality agreement. I hereby agree not to share any information about participants or data with anyone except the primary researchers of this project or other members of this research team. Any violation of this agreement would constitute a serious breach of ethical standards, and I pledge not to do so.

Research Team Member (printed name)

Date

Signature of Team Member

Appendix L

Tables

Table 1
Descriptive Statistics for Categorical Demographic Variables

Variable	N
Gender	
Male	346
Female	513
Ethnicity	
Caucasian	744
African American	55
Asian	21
Mixed Race	18
Hispanic	9
Other	8
Indian/Middle Eastern	3
Native American	1
Academic Level	
Freshman	668
Sophomore	126
Junior	42
Senior	21
Religion	
Non-Catholic/Christian	587
Catholic	112
Atheist/Agnostic	81
Other	61
Jewish	7
Buddhist	4
Hindu	4
Muslim	2
Family Income Level	
> \$100,000	263
\$60,000-\$80,000	158
\$40,000-\$60,000	136
\$80,000-\$100,000	135
\$20,000-\$40,000	104
< \$20,000	59
Relationship Status	
Not Dating	506
Dating	330
Engaged	11
Married	8
Divorced/Widowed	1
Sexual Orientation	
Heterosexual	838
Bisexual	11
Lesbian	5
Gay	2
Military Service	
No	847
Yes	12

Table 2
Descriptives for BSI, AAQ, Aggression Questionnaire

Variable	Gender	N	M	SD
BSI GSI	Male	343	.47	.57
	Female	511	.64	.62
BSI SI	Male	344	.31	.57
	Female	511	.49	.69
BSI OCI	Male	344	.78	.78
	Female	511	.99	.85
BSI ISI	Male	344	.59	.78
	Female	511	.96	.93
BSI DI	Male	344	.52	.76
	Female	511	.67	.82
BSI AI	Male	344	.41	.61
	Female	511	.50	.74
BSI HI	Male	343	.44	.62
	Female	511	.50	.59
BSI PAI	Male	344	.29	.58
	Female	511	.39	.61
BSI PII	Male	344	.45	.63
	Female	511	.61	.72
BSI PI	Male	344	.47	.67
	Female	511	.57	.70
AAQ	Male	346	32.68	6.53
	Female	511	34.54	6.18
AQ Total	Male	346	75.01	16.89
	Female	513	71.61	18.09
AQ Anger	Male	346	15.87	5.26
	Female	513	16.50	5.56
AQ Physical	Male	346	22.49	7.21
	Female	513	17.74	6.54
AQ Hostility	Male	346	21.42	5.67
	Female	513	22.75	6.23

Table 3
Frequency of THQ Events by Gender

	Men (N=346)	Women (N=513)	Total (N=859)
Event Description	Percent	Percent	Number
Mugging	8.1	4.7	52
Robbery	24.6	17.8	176
Breaking in (Gone)	17.2	14.9	135
Breaking in (Home)	4.1	4.9	39
Serious Accident	26.2	26.7	226
Natural Disaster	23.7	28.8	230
Human Disaster	4.3	7.2	52
Chemicals/Toxins	5.5	2.2	30
Serious Injury	11.8	7.8	81
Feared Killed/Injured	16.5	13.5	126
Seen Killed/Injured	25.1	20.5	192
Dead Bodies	14.2	16.2	132
Friend/Family Killed	6.1	10.9	77
Immediate Family Die	1.2	2.5	17
Serious Injury (Self)	11.6	11.1	97
Injury/Illness (S.O.)	58.1	66.5	542
Combat	3.5	0.8	16
Intercourse/Sex	0.9	9.6	52
Touched	1.4	13.4	73
Other Sexual	2.9	9.6	59
Attacked/Weapon	4.3	3.1	31
Attacked/No Weapon	4.9	5.1	43
Beaten, etc.	7.5	9.7	76
Other	13.3	21.8	158

Table 4
Number of Traumatic Events Experienced

Number of Events	Men (n=346) (%)	Women (n=513) (%)	Total (n=859) (%)
None	37 (10.7%)	33 (6.4%)	70 (8.1%)
1-2	106 (30.6%)	140 (27.3%)	246 (28.6%)
3-4	82 (23.7%)	123 (24%)	205 (23.9%)
5-6	41 (11.8%)	68 (13.3%)	109 (12.7%)
7-8	27 (7.8%)	54 (10.5%)	81 (9.4%)
9-10	15 (4.3%)	22 (4.3%)	37 (4.3%)
11 or more	38 (11%)	73 (14.2%)	111 (12.9%)
Mean (SD)	6.67 (21.34)	6.39 (16.61)	6.50 (18.12)

Table 5

Tests of Bootstrapping Mediation for 18 EMS Using PCL Continuous Score

EMS	Total Effect	se	p	Direct Effect	se	p	Indirect Effect	se	CI	p
MA	.13	.02	***	.09	.02	***	.04	.06	LL= .01, UL= .16	*
VU	.10	.03	***	.08	.03	***	.02	.09	LL= .0001, UL= .28	*
FA	.98	.16	***	.85	.14	***	.13	.10	LL= -.06, UL= .33	>.05
EU	.74	.13	***	.67	.12	***	.07	.06	LL= -.005, UL= .23	>.05
DS	.06	.04	>.05	.06	.04	>.05	.0005	.06	LL= -.06, UL= .13	>.05
DI	.10	.03	***	.11	.03	***	-.01	.06	LL= -.02, UL= .14	>.05
NP	.10	.03	***	.08	.03	*	.01	.03	LL= -.01, UL= .07	>.05
PU	.11	.03	***	.10	.03	***	.008	.02	LL= -.009, UL=.04	>.05
US	.12	.02	***	.10	.02	***	.02	.02	LL = .006, UL = .06	*
AB	.20	.04	***	.16	.03	***	.04	.11	LL = .001, UL = .28	*
SB	.79	.12	***	.68	.11	***	.11	.06	LL = .02, UL = .27	*
SS	.12	.02	***	.11	.02	***	.02	.02	LL = .003, UL = .05	*
EI	.18	.04	***	.15	.04	***	.03	.05	LL = -.05, UL = .13	>.05
SI	.06	.04	>.05	.05	.04	>.05	.01	.08	LL = -.01, UL = .18	>.05
ED	.05	.04	>.05	.05	.04	>.05	.001	.04	LL = -.04, UL = .09	>.05
ET	.11	.03	***	.10	.03	***	.01	.03	LL = -.003, UL = .07	>.05
AS	.11	.03	***	.11	.02	***	.005	.02	LL = -.007, UL = .03	>.05
IS	.11	.03	***	.10	.03	***	.01	.03	LL = -.002, UL = .07	>.05

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

Appendix M

Figures

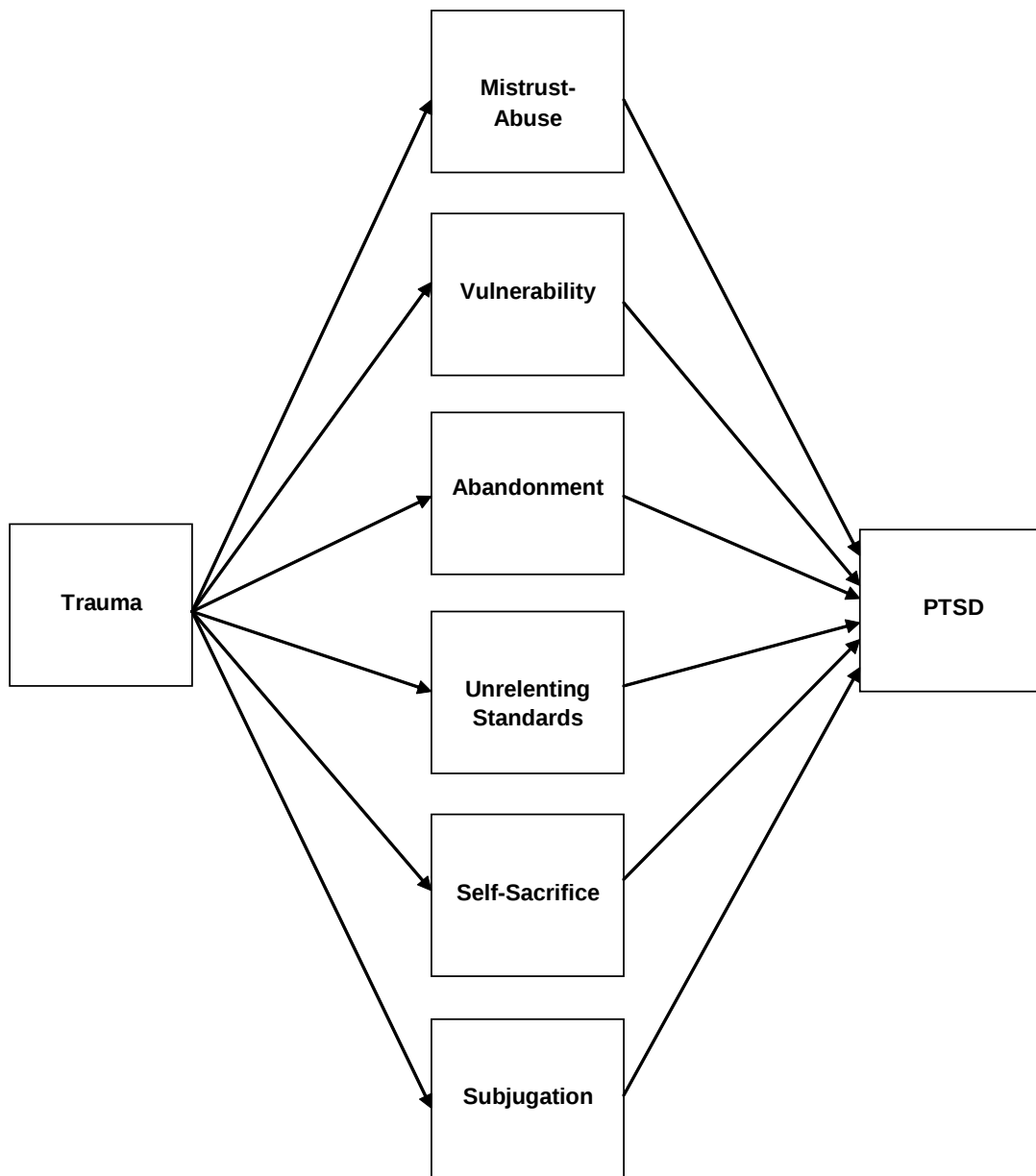


Figure 1. Multiple mediation of the relationship between trauma and PTSD symptomatology by EMS.

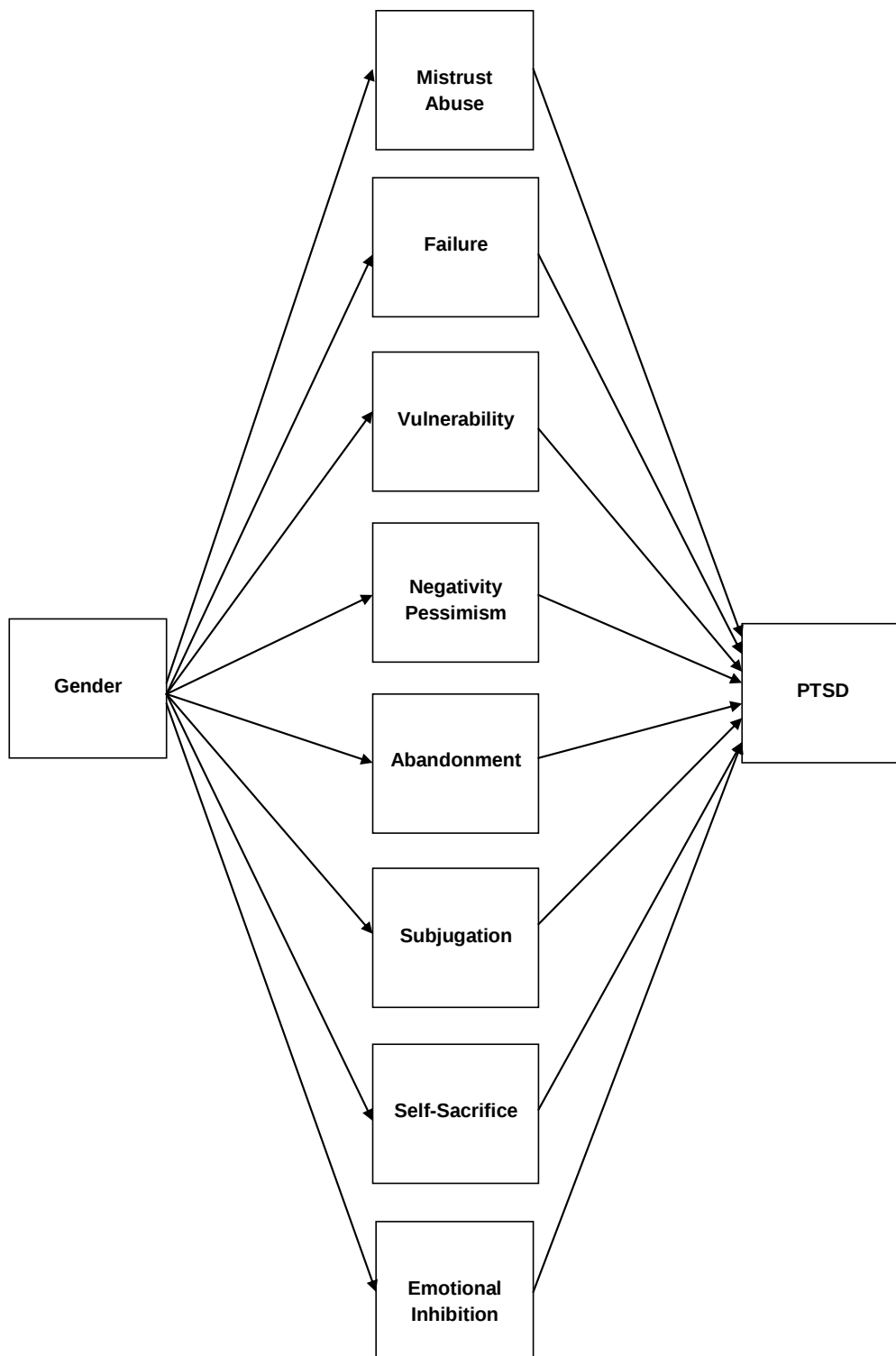


Figure 2. Multiple mediation of the relationship between gender and PTSD symptomatology by EMS.

VITA

Vanessa Handsel was born in Myrtle Beach, SC, to the parents of Lee and Joanne Handsel. She is their eldest daughter and has one younger brother, Taylor. She attended The O'Neal School for elementary, middle, and high school, as well as Union Pines High School, from which she graduated in 2000. Vanessa went on to attend the University of North Carolina at Chapel Hill. She earned her Bachelors of Arts degree with a double major in Cultural Anthropology and International Studies, graduating in December 2003. Vanessa later obtained her Masters of Arts degree in Psychology from the University of North Carolina at Wilmington in May 2007. She began work on her Doctor of Philosophy degree in Clinical Psychology at the University of Tennessee Knoxville in August 2007. In August 2011, Vanessa will begin a year long internship at the Department of Veterans Affairs Medical Center in Hampton, VA, which will mark the completion of her doctoral training.