"Who am I Now?" Distress and Growth after Trauma

by

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A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

Approved June 2012 by the
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ARIZONA STATE UNIVERSITY

December 2013

ABSTRACT

This study examined four research questions investigating relationships among the experience of trauma, identity development, distress, and positive change. There were 908 participants in the study, ranging in age from 18 to 24 which is known as the period of emerging adulthood. Participants completed an online survey regarding their exposure to trauma and reactions to these experiences.

The first research question examined the experience of trauma for the sample. The second question examined group differences among the participant's identity status, gender, and posttraumatic stress disorder (PTSD) diagnostic status on the hypothesized variables. In general, comparisons among the four identity status groups found participants who experienced greater identity exploration (diffused and moratorium) experienced more distress, whereas the identity status groups that reported greater identity commitments (foreclosed and achieved) were associated with positive change. Similar findings were found for PTSD diagnostic status indicating more distress and identity exploration for participants with the diagnosis and more positive change and identity commitments for participants without the diagnosis. Female participants were found to experience more PTS symptoms, centrality of the trauma event, and positive growth than males.

Examination of the relationships between trauma severity and posttraumatic growth revealed an inverted U-shaped relationship (quadratic) that

was a significant improvement from the linear model. An S-shaped relationship (cubic) was found for the relationship between trauma exposure and posttraumatic growth.

Regression analyses found the centrality of the trauma event to one's identity predicted identity distress above and beyond the experience of trauma. In addition, identity distress and the centrality of the trauma contributed to the variance for identity exploration, while only identity distress contributed to identity commitments. Finally, identity development significantly predicted positive change above and beyond, identity distress, centrality of the trauma event, and the experience of trauma.

Collectively, these results found both distress and growth to be related to the experience of trauma. Distress within one's identity can contribute to difficulties in the psychosocial stage of identity development among emerging adults. However, the resolution of identity exploration towards commitments to goals, roles, and beliefs, can help trauma survivors experience resilience and growth after stressful experiences.

DEDICATION

To my family for all of your love, patience, encouragement, and support. May you always know how much I sincerely love you.

ACKNOWLEDGMENTS

As I begin a new phase of my career, I reflect on how thankful I am for the many opportunities I have had at ASU. I feel so fortunate to have worked with professionals who have rejoiced with me in my successes and encouraged me through challenges. Each faculty member I worked with at ASU has enriched my life and helped me grow in many ways. I could not have succeeded without their guidance and knowledge that enabled me to go forward in the counseling profession.

I would like to express my sincere gratitude to my academic advisor, committee chair, and mentor, Dr. Sharon Robinson-Kurpius, for her consistent support and guidance throughout my doctoral program. I appreciate her dedication to helping students, her expertise in women's health and adolescence, and her exceptional editing and skills in research methods; all of which have contributed to my professional development. Dr. Kurpius' invaluable leadership, encouragement to trust my research abilities, and insightful advice, will never be forgotten.

Many thanks are also extended to my committee members, Dr. Richard Kinnier and Dr. Jill Stamm for your time in reviewing and discussing my work. I wanted you both on my committee because you are brilliant professors and I knew I could count on your patience, thoughtful comments, and constructive feedback.

I sincerely thank the individuals who participated in this study and remembered times of struggle and strength. Their contributions helped further understanding of emerging adults who have experienced trauma. I appreciate their time and courage in sharing their experiences.

To my family, I am profoundly grateful and blessed for their constant source of support in all aspects of my life and unwavering in their encouragement to reach my goals. I owe my perseverance in achieving this degree to the love and endless faith I receive from my husband Joe. I can never fully express how thankful I am for his calmness and help in keeping me grounded. I am thankful to my parents who greatly contributed to my adolescent development. They instilled the importance of education when I was younger and provided me with numerous opportunities to learn. Finally, appreciation is extended to my two sweet nieces, Emma and Alyssa, for motivating me to finish so I could visit them more often.

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REVIEW OF THE LITERATURE

The Problem in Perspective

It is inevitable that every human being, at some point in his or her life, will experience a highly stressful or traumatic event. Studying the psychosocial stage of identity development in the aftermath of trauma is important because difficulties within this stage may hinder the development of later stages of psychosocial development. Awareness of these relationships must be examined in order to achieve a holistic approach to healthy development and appropriate psychological care for trauma survivors (Deeny & McFetridge, 2005). The current literature on disaster and trauma has tended to minimize the psychosocial scope while overestimating the psychological impact (Bonanno, Brewin, Kaniasty, & La Greca, 2010). There is a need to increase understanding of trauma, the full range of reactions to trauma, and the connections with identity (Brewin & Holmes, 2003).

It is important to study the possible symptoms of trauma using a multidirectional and multidimensional approach. Studying the multidimensionality of trauma is important due to the number of individuals who experience multiple adversities (Kira et al., 2008). Additionally, the effects of traumatic events on one's psychological adjustment has been widely studied, and it is well-known that trauma can lead to posttraumatic stress, depression, physical health problems, and behavioral dysfunctions (e.g., Edwards, Holden, Felitti, &

Anda, 2003; Felitti & Anda, 2008; Golding, 1999). More recently, researchers have started studying the positive aspects of exposure to stress and trauma including the ability to adapt and grow from these experiences (Bonanno, 2005c; Tedeschi & Calhoun, 2004). However, the perspective of posttraumatic growth and resilience needs further study that is informed by developmental principles (Aldwin & Levenson, 2004).

The transitional period from adolescence to adulthood is marked by increased autonomy and decision-making related to developing a cohesive, stable identity. There has been a paucity in empirical studies that examine psychosocial aspects of trauma and, more specifically, the impact the experience of trauma may have on one's identity. The cumulative effects of trauma over a segment in the life-course called emerging adulthood (aged 18 to 25) (Arnett, 2004) were examined in this study. Many empirical studies have confirmed that exposure to traumatic experiences across the lifespan is associated with mental and physical health problems; however, there have been very few studies examining the relationships of traumatic experiences to developmental difficulties. How one's psychosocial developmental stage is related to posttraumatic stress symptoms or resilience from trauma is largely unknown; however, it is expected that understanding the relationships of resilience, distress, and aspects of psychosocial development can increase prevention of stress-induced mental health problems and difficulties resolving developmental stages (Masten et al., 1999; Parker, Buckmaster, Schatzberg, & Lyons, 2004; Rutter, 1993). To help make meaning

out of the complex developmental process common to the emerging adult years, this study explored the role of identity development in the psychological reactions to dealing with trauma.

The following presents a review of the literature regarding stress and trauma, resilience, posttraumatic growth, and identity development in the context of traumatic experiences. Trauma and stress are defined and the limitations of the posttraumatic stress diagnosis are discussed. Additionally, the many psychological responses to trauma and the multidimensionality of traumatic experiences are described. The positive change characteristics associated with stress and trauma are also discussed in terms of resilience and posttraumatic growth. Definitions, theories, and characteristics associated with these positive psychology terms are detailed. The final section of the literature review describes the theories of adult development. Previous studies relating trauma and identity development are described, as well as their relationship with resilience and posttraumatic growth. Finally, the current study along with the research questions and hypotheses related to the constructs under study, are described.

Stress and Trauma

Definitions of Stress and Trauma. Folkman and Lazarus (1985), prominent researchers in the areas of stress and coping, reported that stress implies "a relationship between the person and the environment that is appraised by the person as relevant to his or her well-being and in which the person's resources are taxed or exceeded" (p. 152). Thus, stress is considered a normal

part of daily life. Trauma, on the other hand, has been described in many different ways, such as intense and horrific events that are not a part of daily living but may be experienced, on occasion, within one's lifetime. Pynoos (1993) defined trauma broadly as a range of events that overwhelm an individual's coping capacities and involves threats of serious injury or death to one's self or someone close. This definition suggests that there are many different traumatic events that are not only difficult to cope with but also may be experienced as debilitating. The Division of Trauma Psychology within the American Psychological Association (APA, 2000) has combined the terms stressor and trauma to define a traumatic stressor as: "A process that leads to the disorganization of a core sense of self and world and leaves an indelible mark on one's world views that psychological disorders often follow upon exposure to. Examples of such traumatic stressors include combat, rape, child abuse, life-threatening accidents, death of a loved one, domestic violence, and prolonged exposure to harassment" (p. 63).

The first recognition of posttraumatic stress disorder (PTSD) as a diagnostic entity was found in the third revision of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) (APA, 1980), which defined traumatic events as those that evoked significant symptoms of distress in almost anyone. Revisions to the third edition of the DSM added that the events must be outside the range of usual human experience (APA, 1987). These definitions automatically assumed that the experience of these events was traumatic.

The DSM-IV (APA, 1994) and the current DSM-IV-TR (4th ed., text rev.; APA, 2000) conceptualize a traumatic event resulting in PTSD as an experienced, witnessed, or confronted event that involved "actual or threatened death or serious injury, or a threat to the physical integrity of self or others" (criterion A1) and that evoked "intense fear, helplessness, or horror" (criterion A2) (p. 427). Thus, the traumatic event must cause clinically significant distress or impairment to meet criteria for this diagnosis. Studies have found that only a small subset of adult (about 5-20%) (Breslau, 2009; Breslau, Davis, Peterson, & Shultz, 2000; Copeland, Keeler, Angold, & Costello, 2007; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995) and youth trauma survivors (about 1-9%; a rate that increases with age) develops PTSD (Yule, 2001).

The diagnostic criteria for PTSD has been criticized for assuming that traumatic stressors form only a distinct class of experiences and that the DSM-IV-TR definition confounds the event with the individual's psychological response to the event (Shalev, 1996). Researchers have also criticized the notion that events as different as a car crash and combat experience can be regarded as being conceptually the same (Lloyd & Turner, 2003). Grouping traumatic experiences into categories may help to reduce the generalizations of the diagnostic criteria and research on trauma. Trauma exposure has been defined using three terms: Cumulative and prolonged, collective identity, and complex. Cumulative and prolonged traumas (harassment, abandonment, incest, sexual abuse) and collective identity traumas (war, genocide, holocaust) are defined as going beyond

physical threat to the existential core of the individual and community of people. Complex traumas (ongoing racism, severe poverty, torture) can also threaten one's individual identity and can be considered a different class from the other traumas due to their multifaceted nature (Cassiman, 2005; Kira, 1999, 2001; Kira et al., 2008; Walker & Pettigrew, 1984).

Indirect Exposure to Trauma. There are many types of traumas including those that often cause death or serious injury. Among the greatest risks to human existence are natural and human-initiated disasters (Deeny, Davies, & Gillespie, 2003). With improved technology, increased satellite reception, and multiple media outlets, many individuals now view these disasters or attacks within minutes after they occur (Smith, Rasinski, & Toce, 2001). The advent of 24-hour television news programs has allowed exposure to mass violence and natural disasters to be viewed at any time and by a widespread audience (Neria & Sullivan, 2011). Individuals in exposed areas will often turn to national news networks to gain further information about the event, information that is dominated by graphic visual images that might influence those who view them (Lloyd & Turner, 2003). A staggering statistic was revealed after the terrorist attacks of September 11th in which 63% of surveyed Americans reported being "addicted" to news covering the attacks compared to 50% of individuals who watched the Gulf War television coverage in 1991 (Rainie, 2001). The vast majority of New Yorkers saw televised images of the attacks on a daily basis for at least the first week after the event (Ahern et al., 2002).

National surveys and samples of individuals directly exposed to the New York Metropolitan area have found that exposure to televised live broadcasting of the terrorist attacks was associated with increased risk for short-term PTSD symptoms up to 2 months after the attacks (Fairbrother, Stuber, Galea, Fleischman, & Pfefferbaum, 2003; Saylor, Cowart, Lipovsky, Jackson, & Finch, 2003; Schlenger et al., 2002; Schuster et al., 2001). Additionally, a nationwide longitudinal study found the September 11th terrorist attacks affected people who were not directly involved or near the approximate location (Silver, Holman, McIntosh, Poulin, & Gil-Rivas, 2003).

Repeated television viewings of graphic images from the September 11th attacks were associated with higher psychopathological levels compared to those who had minimal media exposure (Ahern, Galea, Resnick, & Vlahov, 2004). Research on this type of exposure is limited, but threatening and intrusive images are central to the concept of posttraumatic stress (PTS) (e.g., Holmes, Creswell, & O'Connor, 2007). Examining rescue and recovery workers after the World Trade Center attacks indicated prevalence rates of PTSD symptoms to be around 12.1% at 2 to 3 years after the attacks and then at 19.5% at 5 to 6 years after the attacks (Brackbill et al., 2009). In comparison, individuals who were indirectly exposed to the trauma through the media reported an initial estimate of prevalence of PTSD at 7.5% but there was a decline to 1.7% after 1 month and to .6% at 4 and 6 months (Galea et al., 2003).

Evidence indicates initial but not extended increases in rates of PTSD symptoms among individuals indirectly exposed to trauma through sources such as mass media (Neria & Sullivan, 2011). It is possible that indirect exposure acts as a low-impact trauma that may result in acute stress reactions or rapidly resolving symptoms of PTSD in low-vulnerability populations. Only a small proportion of exposed individuals, especially those with preexisting vulnerability mediated through genetic factors, prior exposure to trauma, or preexposure psychiatric history, may remain with a clinical diagnosis of PTSD months or years after the indirect exposure (Jovanovic & Ressler, 2010). It is becoming more evident that both direct and indirect trauma exposure can have a range of effects on individuals and that people respond to these events in markedly different ways (Bonanno, 2005c; Silver & Wortman, 1980).

Measurement of Trauma. When using retrospective reports to measure trauma exposure, to minimize recall bias, the assessments need to maximize the accuracy of reports (Dohrenwend, 2006; Kessler, Mroczek, & Belli, 1997) and the type of exposure. Dohrenwend (2000) suggested six characteristics of the trauma that should be considered. These include: Valence (positive or negative, desirable or undesirable, involving gain or loss); source (occurrence caused by factors in the external environment or actions of the individual); unpredictability (occurrence of event not being foreseen); centrality (threat to life, physical integrity, basic needs, or identity); magnitude (likely change in the usual activities of most people who experience the event); and potential for physical exhaustion.

Using lists of traumatic events has become the standard practice for measuring exposure to trauma and the number of events provided has increased over time, reflecting in part the broadening of the criteria through revisions to the DSM (Mills et al., 2011). Mills et al. and Breslau and Kessler (2001) found that increasing the assessment of exposure to traumatic events from 11 items to 29 items increased the overall population prevalence of exposure to potentially traumatic events from 1997 to 2007 by 18%. Their results were not indicative of an increase in trauma exposure over time but were explained by endorsement of new, potentially traumatic events that were not listed in the earlier surveys. Their findings underscore the importance of using comprehensive measures to assess lifetime exposure of traumatic events and that previous epidemiological surveys with fewer items may have underestimated the prevalence of traumatic events.

Another methodological strategy to increase the validity of trauma reporting is to provide definitions and/or examples regarding what is and what is not to be included in a trauma exposure or event category (Dohrenwend, 2000). The greater the detailed definition provided for the events in each checklist category, the greater the test-retest reliability of the instrument (e.g., Paykel, 1987). A limitation, however, may be failure to elicit major events that do not fit neatly into the detailed definitions included in the checklist category.

It is also important to recognize that not all stressful or traumatic events are equivalent. For example, the death of a close friend compared to the loss of a job may be more or less stressful for different people. Kessler (1997) reported

two strategies that have been used historically to make adjustments for the differences in stressful events. The first of these strategies allows participants to assign a subjective weight to their own events (Sarason, Johnson, & Siegel, 1978). However, relying on participants to rate the severity of traumatic experiences for themselves may confound severity with their response to trauma, if it is the outcome of interest. If an individual rates an event as severe in magnitude, this could reflect on his or her ratings of disruptiveness and severity of the event itself, the rater's lack of resilience in responding to the event, or a combination of the two. This method has been rejected as confounding the stressful event with an emotional reaction to the event (Kessler, 1997; Turner & Wheaton, 1995; Zimmerman, 1983). Additionally, memory regarding a prior trauma is often biased by current levels of distress. People who develop extreme reactions to disaster events may be more likely to remember the emotional aspects of the predisaster context than the actual disaster itself (Levine et al., 2005).

Focusing only on the negative sequelae of trauma can lead to a biased understanding of posttraumatic reactions. Analyses on the latent structure of PTSD have consistently found a dimensional rather than a categorical structure (Broman-Fulks et al., 2006; Ruscio, Ruscio, & Keane, 2002) and that the current diagnostic cutoff points for PTSD are arbitrary (Davis, 1999; Robins, 1990). Thus, Linley and Joseph (2004) suggested that in order to be considered comprehensive any understanding of reactions to trauma must account for the potential to have both positive and negative changes. They also reported that

growth and distress might be opposite endpoints of a bipolar continuum and, therefore, must be negatively associated. On the other hand, growth and distress might be independent, which implies that high scores on one dimension does not necessarily imply low scores on the other dimension.

Traumatic events have also been studied by requesting participants to choose 'the worst' or 'the most upsetting' event they have experienced. Trying to assess PTSD in relation to all reported traumas might be too taxing on the respondents; especially since a large proportion of participants report multiple traumas (Breslau, Peterson, Poisson, Schultz, & Lucia, 2004a). Breslau, Davis, Peterson, and Schultz (1997) found that only a small number of respondents who failed to meet PTSD criteria for their worst trauma met PTSD criteria for other traumas they had experienced. However, the focus on 'worst traumas' may slightly overstate the probability of developing PTSD after traumatic exposure (i.e., approximate excess of 32% of the total estimate) (Breslau et al., 2004a).

Another important aspect to examine is the timing related to traumatic experiences. This is difficult to measure even through interviews, and it is unknown as to how much time is needed for individuals to recover and grow. It is also challenging to determine in a reliable manner when the precise ending of a traumatic event occurs and its psychological effects decrease. Understanding the timing could provide meaningful insight when assessing trauma and resilience,

thus it is important to include in the measurement of trauma exposure (Cannell, Miller, & Oksenberg, 1981; Sobell, Toneatto, Sobell, Schuller, & Maxwell, 1990).

Sensitive topics related to trauma should be measured using self-report assessments rather than interviews, as written responses are more likely to be given honestly. Schlenger and Silver (2006) reported that due to the increased feeling of more anonymity, the use of web-based data collection can decrease social desirability related to traumatic experiences. Research that has compared different modes of assessment has found that web-based data collection improves the validity of reports of sensitive topics (Krantz & Dalal, 2000; Reips, 2000).

Kira et al. (2008) proposed a two-way taxonomy of traumatic stressors with the first dimension being related to developmental theories includes attachment, identity, and collective, interdependence, indirect, or secondary trauma, self-actualization, and physical survival. The second dimension, based on the objective characteristics of the traumatic event, includes cumulative trauma, internal trauma, nature-made, and man-made traumas. Kira and colleagues also stressed the importance of measuring multilateral trauma that affects more than one area of functioning, developmental tasks, or competencies. They noted the importance of measuring the total number of trauma events and the multiple events in each type of trauma to be able to develop a clear perspective of the individual's experience.

Measuring the co-occurrence of trauma can be challenging due to the difficulties in isolating how one particular trauma might affect an individual. However, it is important that the assessment of trauma takes into account the possibility of cumulative trauma in which the total amount of trauma experienced by an individual is measured (Breslau, Davis, & Andreski, 1995; Breslau et al., 1999a; Breslau, 2009). Cumulative trauma over the life span has predicted psychological distress in a community sample (Turner & Lloyd, 1995) and with college students (Turner & Butler, 2003). Thus, the measurement of traumatic experiences should also include a variant that allows for the study of low and high levels of traumatic stress exposure, since it is believed that low levels of stress are associated with fostering toughness and resilience (Seery, Holman, & Silver, 2010). Cumulative traumatic experiences may have a similar effect.

Multiple Traumas. The current PTSD diagnosis has been criticized for its unidimensional criteria that only relates to a single traumatic stressor in the course of a lifetime. It is important to have detailed measures of cumulative traumatic stressors, including the specific type of prior traumatic events and the impact of different types of experiences on outcomes over time. Experiencing only one traumatic stressor over the course of a lifetime is the exception for most people (Kira et al., 2008). Traumatic stressors are a part of life, and events considered traumatic occur quite frequently including both random events (e.g., violent crimes, natural disasters, hospitalizations) and man-made tragedies (e.g., war, terrorist attacks, domestic violence). Thus, it is unrealistic to believe that

people are not exposed to severe adversities and intense traumatic stressors and that they may not be exposed on multiple occasions (Banyard & Cantor, 2004).

In fact, epidemiological studies have confirmed that most community residents in the United States have experienced some sort of violent or life-threatening event with estimates of lifetime prevalence of 82.5% among adults (Breslau, Wilcox, Storr, Lucia, & Anthony, 2004a). Nationally representative prevalence studies indicate that at least 60% of men and 51% of women in the general population report experiencing at least one traumatic event in their lives (Kessler et al., 1995; Ozer, Best, Lipsey, & Weiss, 2003). While some individuals may only experience one traumatic event, many others will experience multiple traumas over their lifetime, with some traumas co-occurring with one another (Breslau et al., 2004; Dong et al., 2004; Green et al., 2010; Kessler et al., 1995; Norris, 1992).

Prior exposure to trauma may affect responses to a later traumatic event (Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993), including an increased risk of developing PTSD (Andrews, Brewin, Rose, & Kirk, 2000; Bremner, Southwick, Johnson, & Yehuda, 1993; Breslau, Chilcoat, Kessler, & Davis 1999a; Nishith, Mechanic, & Resick, 2000) and greater risk of experiencing subsequent traumas (Breslau, Howard, Chilcoat, Kessler, & Davis, 1999b; Nishith et al., 2000). For example, a longitudinal epidemiologic study over 10 years found that young adults who met criteria for PTSD after a traumatic experience and then experienced a second trauma were at heightened risk of developing PTSD again

(Breslau, Peterson, & Schultz, 2008). Scott (2007) found lifetime multiple traumatic experiences to be related to severity of PTSD symptoms. Additionally, studies have found both adolescents and adults who were exposed to multiple traumatic events experienced greater PTSD and depressive symptoms than did those who were exposed to a single traumatic event (Howgego et al., 2005; Krupnick et al., 2004; Suliman et al., 2009). Thus, the potential for developing PTSD extends far beyond the DSM criteria of experiencing a single intensely traumatic event (Lloyd & Turner, 2003), and current literature indicates an increased incidence of psychopathology may occur when there are preexisting vulnerabilities including prior trauma exposure (Bonanno et al., 2010; Perkonigg et al., 2005).

The effects of traumatic experiences can be cumulative (Follette, Polusny, Bechtle, & Naugle, 1996; Goodman, Dutton, & Harris, 1997). For example, multiple adversities have been associated with psychological problems (Breslau et al., 1999a; Cabrera, Hoge, Bliese, Castro, & Messer, 2007; Turner & Lloyd, 1995, 2004), physical disease (McWilliams, Cox, & Enns, 2003; Roy-Byrne, Noonan, Afari, Buchwald, & Goldberg, 2006; Roy-Byrne, Smith, Goldberg, Afari, & Buchwald, 2004; Sledjeski, Speisman, & Dierker, 2008; Wagner, Wolfe, Rotnitsky, Proctor, & Erickson, 2000), and poor outcomes on multiple indicators of development (Masten, 2001). Therefore, it is important to study the

cumulative effects of trauma over a segment in the life-course since greater numbers of traumatic stressors are related to higher levels of psychological distress.

Individual Differences to Trauma. Why is it that some individuals exposed to traumatic stressors develop psychological problems while others do not? Research suggests that it is not only genetic and biological differences that make an individual vulnerable to PTSD and other psychological disturbances but also environmental factors (Yehuda, 1999). Meta-analyses of risk for PTSD reported that factors present both during or after the traumatic experience, such as lack of perceived social support, subsequent life stress, and trauma severity, had stronger effects than did pre-trauma risk factors such as female gender, younger age, low socioeconomic status, lack of education, race (minority status), adverse childhood, psychiatric history, reported childhood abuse, other previous trauma, family psychiatric history, and low intelligence (Brewin, Andrews, & Valentine, 2000; Chilcoat & Breslau, 1998). A longitudinal study found survivors with psychological problems before a fireworks depot explosion were more at risk of experiencing psychological problems afterwards, especially when they had experienced severe disruption to their lives and needed to be relocated (Yzermans et al., 2005).

Specific traumatic events may result in more or less posttraumatic symptoms. For example, Breslau et al. (1998) found that assaultive violence was less likely to result in PTSD than was the unexpected death of a loved one, which

accounted for nearly one third of PTSD cases. Cuffe et al. (1998) examined a sample of emerging adults and found rape and sexual abuse to be the strongest predictors of PTSD, with witnessing an accident or medical emergency as the second strongest predictor, followed by a life-threatening crime. Another study found similar results in which rape, childhood physical abuse, and childhood neglect resulted in greater risk for developing PTSD than any other forms of trauma (Kessler et al., 1999). In comparison to the differences within actual trauma events, variations in trauma responses have also been related to vulnerability factors such as personality and attitudinal traits as well as to pre-event experiences (Bowman, 1999).

Bonanno (2004) suggested that before returning to their baseline or pre-trauma levels, many people experience elevations in psychological problems and poor functioning for several months after experiencing loss or trauma. The aftermath of a trauma can be quite frightening and confusing as fundamental assumptions and beliefs about the world being just may be severely challenged (Tedeschi & Calhoun, 2004). What may seem like a mild, discrete event to some individuals may be perceived as a chronic or severe trauma for others. Some individuals experience profound and long-term health consequences (Singer & Ryff, 2001), especially in the occurrence of mental health problems (major depression, anxiety, and PTS) (Edwards et al., 2003; Felitti & Anda, 2008; Golding, 1999), physical health problems (heart disease, chronic pain, traumatic brain injuries, metabolic or adult-onset diabetes, hypertension, ulcers,

reproductive problems, and suppressed immune systems) (Alonzo, 2000; D'Andrea, Sharma, Zelechoski, & Spinazzola, 2011; Sapolsky, Kahneman, Diener, & Schwarz, 1999) and behavioral disorders (substance abuse and domestic violence) (Donker, Yzermans, Spreeuwenberg, & van der Zee, 2002; Marmar et al., 1999; Rubonis & Bickman, 1991), even years after the event occurred. The psychological effects of traumatic stressors may persist for a decade or more (Briere & Elliott, 2000). Breslau (2001) found that one third of a sample of 1,000 people had significant symptoms of PTSD even 10 years after a traumatic event occurred. Among emerging adults, high levels of lifetime exposure to adversity are causally related to the onset of depressive and anxiety disorders (Nemeroff et al., 2003; Turner & Lloyd, 2004).

Some trauma survivors suffer less intensely and for shorter periods, while others cope well and do not experience a disruption in functioning. Many individuals show an ability to move beyond the traumatic stressor with little or no distress (Bonanno, 2004; Parker et al., 2004). There is a growing awareness that the majority of people who endure extreme adversity may not experience significant disruptions in functioning (Mancini & Bonannno, 2006).

Empirical research clearly suggests that early exposure to trauma is a risk factor for developing subsequent psychopathology (Davidson, Stein, Shalev, & Yehuda, 2004; Foa, Stein, & McFarlane, 2006; Heim, Plotsky, & Nemeroff, 2004) and subsequent exposure to traumatic events (Breslau et al., 1995). Research has also indicated that early life stressors may foster resilience

(Bonanno, 2004). Thus, exposure to one stressor may strengthen resistance to similar or different stressors that are encountered later in life. The more extreme the traumatic exposure is, the greater the potential for increased resilience and personal growth (Janoff-Bulman, 1990; Paton, 2005). For example, in comparison to individuals who have never experienced a disaster or individuals with less exposure to trauma, adults who have experienced torture or natural disasters report lower anxiety and less depression after experiencing the same trauma again (Knight, Gatz, Heller, & Bengtson, 2000; Norris & Murrell, 1988).

Resilience

Definitions of Resilience. While trauma can be quite debilitating, both physically and psychologically, some people actually recover quickly from negative events and avoid major disruptions in their lives (e.g., Bonanno et al., 2002b; Bonanno, Moskowitz, Papa, & Folkman, 2005a; Wortman & Silver, 1989). In fact, resilience is quite common (Rutter, 1985), even in extreme adversity (Masten, 2001; Werner & Smith, 1992). Resilience and strength-based approaches in both clinical practice and research are receiving increased attention, but what constitutes the construct of resilience and how it is operationally defined is varied.

Movement toward the examination of coping, adaptation, and growth has brought about a renewed interest in looking at positive aspects of trauma rather than the limited view of only examining the negative aspects of human experience (Seligman & Csikszentmihayli, 2000; Snyder & Lopez. 2002). Resilience is often

defined as “a dynamic process encompassing positive adaptation within the context of significant adversity” (Luthar, Cicchetti, & Becker, 2000, p. 543). Bonanno (2004) also defined resilience as adults’ ability to maintain relatively stable, healthy levels of psychological and physical functioning and the capacity for generative experiences and positive emotions after exposure to highly disruptive events or life-threatening situations. Basically, resilience is a term used to describe the idea that individuals can successfully adapt after a traumatic stressor (Seery et al., 2010). Thus, the construct of resilience provides a framework for understanding healthy development in the face of risk and trauma. It also provides an understanding of how some individuals can overcome the negative effects, cope successfully with traumatic experiences, avoid the negative trajectories associated with risks, and use psychological and social resources to help tolerate adversity (Fergus & Zimmerman, 2005; Luthar et al., 2000; Rutter, 1985, 1987, 2007; Silver, 2009).

Resilience is a complex construct (Connor, 2006); however, what is known, is that resilient individuals bounce back quickly from traumatic experiences, continue living with a purpose, and manage to remain psychologically healthy despite very difficult circumstances (Garmezy, 1985; Rutter, 1987; Tedeschi & Calhoun, 2004). For example, after experiencing Hurricane Katrina, many individuals reported that stress led to increased resilience, with three out of four people (including many who had psychological problems) reporting that they found a deeper sense of purpose after the disaster

(Kessler, Galea, Jones, & Parker, 2006). Another study by Bravo, Rubio-Stipec, Canio, Woodbury, and Ribera (1990) examined pre and post mental-health surveys of individuals exposed to tropical storm Isabel and flooding of the island of Puerto Rico. Their results found relatively small changes in depression, somatic complaints, and PTSD symptoms suggesting resilience to the development of new psychological symptoms.

There are several different forms of trajectories of resilience that can be described as chronic, resilient, recovered, and delayed (Bonanno et al., 2005b). The first trajectory is the small subset of exposed individuals who exhibit chronic dysfunction. Another trajectory is the relatively stable trajectory of healthy adjustment, or resilience. A less common pattern is that of classic recovery in which initial elevations in symptoms and distress occur soon after the traumatic event and then gradually decrease. A small subset of exposed individuals may also show a pattern of moderate levels of symptoms and distress that become worse over time, suggesting a delayed pattern (Andrews, Brewin, Philpott, & Stewart, 2007; Bonanno, 2004; Buckley, Blanchard, & Hickling, 1996). These trajectories were examined in a sample of high-exposure survivors of the September 11th attacks. The study found 29% of survivors in the chronic trajectory, 35% in the resilient trajectory, 23% in the recovered trajectory, and 13% in the delayed reactions trajectory (Bonanno et al., 2005b).

Using latent growth mixture modeling, the same four trajectories were found within a sample of survivors in the bioepidemic of severe acute respiratory

syndrome (SARS) in Hong Kong with about 35% reporting resilient trajectories of stable high mental health and 42% fitting the chronic-dysfunction trajectory (Bonanno et al., 2008). Norris, Tracy, and Galea (2009) found five outcome trajectories within a sample of survivors who experienced extensive flooding in Mexico, with the most common pattern (35%) being a stable, resilient trajectory. They also found high-exposure September 11th survivors to have more trajectories with two being suggestive of recovery, two patterns of resilience, a delayed pattern, and a stable, chronic elevation pattern. Again, the most common outcome (40%) was a stable trajectory of healthy adjustment and resilience.

Another post-9/11 study found a large population-based sample of New Yorkers to be resilient, with 65% of the participants reporting no PTSD symptoms during the first 6 months after the attacks. They also reported less depression and substance use than did other participants (Bonanno, Galea, Bucciarelli, & Vlahov, 2007). Amount of exposure did not change the percentage of resilience by much. For example, those who saw the attacks in person, as well as individuals in the World Trade Center when the planes struck, were 50% resilient. A common pattern found among studies is that the initially elevated distress or psychopathology decreases soon after the disaster. A national survey that was conducted 3-5 days after the 9/11 attacks found 44% of adults surveyed had one or more symptoms of distress related to these events. Surveys two months later found 16% reported persistent distress (Schuster et al., 2001).

Masten (2001) reported that resilience research needs to focus on individual differences and normative patterns in development and on how developmental processes unfold in normative compared with extremely deviant conditions. People vary greatly in how they respond to stress and adversity. Personal characteristics that contribute to this variability include previous experiences, individual coping skills, indirect chain effects stemming from the experience and how it is dealt with, and subsequent experiences (Rutter, 1995). Resilient characteristics at one point in time are related to decreased risk of re-traumatization and fewer mental health problems later in life (Banyard & Williams, 2007). For example, resilience in adolescence leads to resilience in adult life, but there are changes over time (DuMont, Widom, & Czaja, 2007) as resilience is not a stable trait and may occur at some periods but not others. It is possible that some traumatic stressors are more strengthening than others (e.g., Silver & Wortman, 1980) and may affect the ability to be resilient. Repeated exposure to particular traumatic events such as military combat or sexual abuse may have long-term effects such as questions of unfairness, injustice, and self-blame (Knight et al., 2000; Norris & Murrell, 1988).

While severe stress is known to lead to dysfunctions, moderate stress can provide a challenge that can be overcome and produce competence in the management of and increased resistance to future stressful circumstances (O'Leary, 1998; Rutter, 1987). There are many terms that have been used to describe this notion of resilience, in which prior stressful experiences can help

strengthen an individual's resistance to subsequent stressors. These terms include inoculating (Eysenck, 1983; Boyce & Chesterman, 1990), immunizing (Basoglu et al., 1997; Levine, Weiner, & Coe, 1989; Rutter, 1987; Seligman, Rosellini, & Kozak, 1975), steeling (Rutter, 1993, 2007), toughening (Dienstbier, 1989; Miller, 1980), and thriving (Carver, 1998; O'Leary & Ickovics, 1995). There have also been many theories and models used to describe different characteristics of resilience, which are described below.

Theories of Resilience

Transactional Model. Several theories discuss the idea that experiencing adversity can foster subsequent resilience. Lazarus and Folkman (1984), known for their theories and research related to coping with stress, developed the Transactional Model in which "psychological stress is a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (p. 19). They reported two categories of cognitive appraisals of stress that are quite different for each individual. Primary appraisals incorporate the stressfulness of events including harm, loss, threat, or challenge. Secondary appraisals are the types of resources at one's disposal that impact the perceived stressfulness of the problem. Problem-focused coping is a form of secondary appraisal involving strategies that help to gather information, make decisions, plan, and resolve conflicts in order to manage or solve problems that may hinder one's ability to create goals (Lazarus & Folkman, 1984). For example, effective problem-focused

coping contributes to positive well-being by assisting individuals in experiencing some personal control and accomplishments, even during the tragedies related to partner illness (Folkman, 1997).

Folkman (1997) suggested modifications to the transactional model by integrating positive psychological states using three pathways. The first pathway was described as the result of meaning-based processes involving individual's use of coping with the stressor itself. These processes could include positive reappraisal, revising goals and planning goal-directed problem-focused coping, and activating spiritual beliefs and experiences, through which individuals find existential meaning. The second pathway includes coping as a response to distress rather than as a response to conditions that cause the distress. The co-occurrence of both positive and negative affect is suggestive of this pathway. Folkman believed that negative psychological states may help motivate people (consciously or unconsciously) to search for and create positive psychological states in order to gain relief from distress. The third and final pathway leads from the positive psychological states back to appraisal and coping. Thus, the coping processes that generate positive psychological states and the states themselves help to sustain effective coping efforts in dealing with the stressful or traumatic experience.

Folkman (1997) also found four coping types (positive reappraisal, goal-directed problem focused coping, spiritual beliefs and practices, and the infusion of ordinary events with positive meaning) to be related to positive psychological

states when caring for an ailing family member or bereavement after their death. A nationwide, longitudinal study of psychological responses to the attacks of September 11th revealed that active coping strategies immediately after the attacks was the only strategy that served as a protective factor against ongoing distress, while disengagement from coping efforts increased the likelihood of experiencing distress and PTS symptoms (Silver, Boon, & Stones, 2003).

Theory of Psychophysiological Toughness. Dienstbier's (1989, 1992) Theory of Psychophysiological Toughness built upon Folkman's (1997) revised Transactional Model and was one of the first theories to explore coping in relation to physiological changes. Dienstbier reported that regular exposure to stressors followed by an adequate recovery period can have a positive toughening effect. This exposure is believed to increase one's future capacity for more positive forms of arousal and suppression of negative arousal.

Dienstbier's (1989) model suggests that an important part of adequate long-term coping depends on physiological toughness; however, with some traumatic stressors there may be insufficient recovery time for toughening to occur. He emphasized the importance of the time between adverse events in which enough time is needed for an opportunity to recover between stressors. This time is related to the ability to develop toughness. Empirical research suggests that resilience factors are more important in recovery rather than in the immediate aftermath of disaster (Benight et al., 1999; Hobfoll, 1998; Sumer, Karanci, Berument, & Gunes, 2005; Tedeschi & Calhoun, 2004).

An overwhelming experience may result in a temporary loss of effective coping; however, after being exposed to multiple traumas, one's ability to cope may gradually become better with later events. With psychophysiological toughness, individuals perceive situations as more positive and manageable, and they are more emotionally stable. The success of one's prior coping efforts can be a key determinant of responses to future adversity (Hamburg & Adams, 1967). Experiencing periodic exposure to mild stressors and having recovery periods can provide a platform for developing toughness.

The experience of extreme trauma, threat, or harm/loss may not provide the same toughening affect for an individual, however after an experience like a serious illness; other traumas may seem less important or overwhelming in comparison to the initial trauma (Seery et al., 2010). On the other hand, if an individual is not challenged to manage and cope with their stress they may not develop toughness. High levels of trauma may become overwhelming and cause struggles in managing stress, which could disrupt toughness.

Experimental animal studies also shed light on the proposition that moderate levels of adversity can contribute to resilient behaviors with multiple stressors. For example, young monkeys exposed to intermittent stressors during development exhibited greater resilience and diminished anxiety to additional stressors than did monkeys without any stress (Lyons & Parker, 2007; Parker et al., 2004; Parker, Buckmaster, Sundalss, Schatzberg, & Lyons, 2006). Therefore, stressful events that are difficult but not overwhelming can challenge an

individual but may also make subsequent coping efforts more efficient and easier to handle later in life. Coping with adversity may promote development of subsequent resilience (e.g., Aldwin, Sutton, & Lachman, 1996; Carver, 1998; Egeland, Carlson, & Sroufe, 1993), less negative responses with additional trauma, and better mental health and well-being (Seery et al., 2010). For example, adults cope better with spousal loss, illness, work-related stressors, and major accidents if they have experienced stress and learned to cope in childhood (Forest, 1991; Khoshaba & Maddi, 1999; Mortimer & Staff, 2004).

Conservation of Resource Theory. The Conservation of Resource Theory (Aldwin & Levenson, 2001, 2004; Hobfoll, 1988) suggests that people are capable of gaining resources such as mastery development and a positive outlook despite stress. For example, Aldwin, Levenson, and Spiro (1994) found that most veterans report positive consequences including increased coping skills and self-esteem, even under intense trauma. Positive reappraisals are the cognitive strategies used to reframe a situation in a positive light and has been found to be related to positive psychological states (Aldwin, 1994). Aldwin and Levenson (2001) reported, "If trauma challenges our assumption and forces us to abandon unrealistic or even damaging assumptions about the world, then the loss of those assumptions is a good thing" (p. 206).

Moderate levels of trauma (more than high levels or no trauma) can predict better psychological outcomes and well-being (Fontana & Rosenheck, 1998). For example, among Vietnam War veterans, peripheral combat exposure

predicted improvements in psychological well-being compared to no exposure and direct exposure to combat (Schnurr, Rosenberg, & Friedman, 1993). Aldwin and Levenson (2001) noted that both stressors and positive events can promote development in adulthood, and resilience is not restricted only to traumatic stressors. They also believed that trauma and stressors can result in increased vulnerabilities and declines within one's development. For example, in one study 90% of veterans reported positive outcomes after combat exposure, and 10% of veterans did not report positive effects (Aldwin et al., 1994). In another study, about 73% of participants who lost family members reported gaining some positive outcomes (Davis, Nolen-Hoeksema, & Larson, 1998). Aldwin et al. (1996) found that most respondents reported prior stressful experiences as being useful for coping with current stressors.

Stress Inoculation Theory. Stress Inoculation Theory (Lyons & Parker, 2007; Meichenbaum, 1993) posits that the prior experience of trauma provides an inoculation against strong emotional reactions. For example, when a traumatic experience is repeated individuals are better able to cope leading to higher levels of inoculation. Age may be an important aspect of this theory. For example, age effects may be due to more chances of experiencing trauma (Eysenck, 1983). Older adults have reported more distress related to specific events, but similar distress levels to younger adults on general symptom measures (Ticehurst, Webster, Carr, & Lewin, 1996).

Research in support of this theory suggests that stress exposure helps buffer against subsequent disaster when the experiences are similar. Survivors who had previously experienced a flood were not impacted by psychological outcomes compared to survivors who had not previously experienced a flood (Norris & Murrell, 1988). Similarly, participants with prior exposure to disasters such as the Kentucky floods in 1981 and the California Northridge earthquake in 1994 had enhanced psychological adaptation with subsequent exposure (Knight et al., 2000; Phifer & Norris, 1989). Studies have found this pattern in other types of disasters and traumatic experiences including a study with rescue workers for an airplane crash (Dougall, Heberman, Delahanty, Inslicht, & Baum, 2000) and two studies with earthquake survivors (Bland, O'Leary, Farinaro, & Jossa, 1996; Knight et al., 2000).

In contrast, research available on the Theory of Stress Inoculation also points to the opposite pathway in which prior exposure to traumatic life events sensitizes a person to be more rather than less reactive to subsequent trauma (Breslau et al., 1999a; Kessler et al., 1995; King, King, Foy, & Gudanowski, 1996; Post & Weiss, 1998; van der Kolk & Greenberg, 1987). Evidence in support of the Stress Inoculation Theory was examined based on retrospective accounts of past events that failed to separate the occurrence of the traumatic event from the outcome of the event. A recent study using prospective data gathered over a 10-year time frame found no relationship between the occurrence of traumatic events and later development of PTSD (Breslau et al., 2008).

Psychological Characteristics of Resilience. Resilience is associated with a variety of psychological characteristics including hardiness (Kobasa, 1979), self-enhancement (Bonanno, Field, Kovacevic, & Kaltman, 2002a, Greenwald, 1980; Taylor & Brown, 1988), positive emotions, broad-minded coping (Fredrickson & Joiner, 2000), and repressive coping (Bonanno, 2004). Investigations of the impact of stress have found protective factors of resilience to include positive personality dispositions, a supportive family, and an extrafamilial support system that reinforces active and successful coping strategies (Olsson, Bond, Burns, Vella-Brodrick, & Sawyer, 2003; Garmezy, 1983; Garmezy, Masten, & Tellegen, 1984).

Hardiness (Kobasa, Maddi, & Kahn, 1982) is a personality trait that helps buffer the effects of exposure to intense stress and captures a form of cognitive flexibility. Individuals who are hardy tend to believe that they have control over the outcome of events and reframe events as challenges rather than threats. Hardiness consists of three dimensions: Wanting to find a meaningful purpose in life; believing that one can control their surroundings and outcome of events; and believing that one can learn and grow from all experiences that are both positive and negative. Psychologically resilient or "hardy" individuals tend to be committed to what they are doing, feel like they are in control of their problems, and are willing to accept changes in life as challenges to be mastered rather than as threats to be endured. They are curious and active, believe in their ability to influence events, and believe challenges can be overcome (Kobasa, 1979; Kobasa

et al., 1982; Maddi, Bartone, & Puccetti, 1987). Hardy individuals also appraise stressful events as less threatening than nonhardy individuals (Allred & Smith, 1989; Kobasa et al., 1982; Rhodewalt & Zone, 1989; Wiebe, 1991). Hardiness has been related to enhanced psychological well-being, greater positive affect, and reduced negative affect and psychiatric symptoms following military crises (Bartone, Ursano, Wright, & Ingraham, 1989). For example, hardy individuals were found to be less distressed and retained higher organizational commitment and job satisfaction after an acute industrial accident (Barling, Bluen, & Fain, 1987).

Another psychological characteristic of resilience is self-enhancement which describes unrealistic and overly positive self-serving biases in favor of the self that can be adaptive and promote well-being (Greenwald, 1980; Taylor & Brown, 1988). These traits are related to levels of positive affect, self-esteem, and the ability to cope well with aversive situations (Bonanno, Rennicke, & Dekel, 2005b). Self-enhancement has been found to predict better adjustment after subsequent exposure to traumatic stressors (Gupta & Bonanno, 2010) including urban combat exposure and death of a spouse (Bonanno et al., 2002a). One study found trait self-enhancement was more frequent among survivors evidencing a resilient trajectory of low PTSD and depressive symptoms (Bonanno et al., 2005a).

Positive emotions can be used to cope with adversity (Bonanno, Noll, Putnam, O'Neill, & Trickett, 2003; Folkman & Moskowitz, 2000) and can help

reduce levels of distress after traumatic events. For example, Fredrickson, Tugade, Waugh, and Larkin (2003) interviewed participants before and after the September 11th terrorist attacks and asked them to identify the emotions they were feeling. They found that people were sad, angry, and afraid after the 9/11 attacks, but that those who were originally identified as being resilient reported feeling positive emotions after the attacks as well. They were half as likely to be depressed, and their tendency to experience more positive emotions served as a buffer against psychological disturbance. Fredrickson (2001) suggested that people with at least three positive emotions for every one negative emotion tend to flourish and are more resistant to adversity and trauma than are people with fewer positive emotions.

According to Fredrickson and Joiner (2000), broad-minded coping is a form of psychological resilience and describes individuals who experience emotions that are more positive and are more resilient to trauma over time. Fredrickson (2001) developed the Broaden-and-Build Theory that posits that momentary experiences of positive emotion can build enduring psychological resources and trigger upward spirals toward enhanced emotional well-being. This theory suggests that over time, the broadening that occurs after experiencing positive emotions creates a variety of positive personal resources, including physical resources such as health and longevity, social resources such as friendships, intellectual resources such as expert knowledge, and psychological resources such as resilience, optimism, and creativity.

While hardiness and self-enhancement are primarily cognitive processes and are related to personality, broad-minded and repressive coping are emotion-focused (Bonanno, 2004). Researchers examined the repressive coping behavior of individuals who reported relatively little negative affect during stressful events and found they had heightened physiological responses (Bonanno et al., 2003; Bonanno, Keltner, Holen, & Horowitz, 1995). No evidence linking repressive coping to negative health consequences was found, suggesting that there is an adaptive benefit to repressive coping after highly stressful and uncontrollable events. However, these repressive behaviors may not be adaptive in all stressful experiences or have long-lasting effects. Additionally, cognitive ability has not been related to resilience in several studies (Collishaw et al., 2007; DuMont et al., 2007; Jaffee, Caspi, Moffit, Polo-Tomas, & Taylor, 2007); however, cognitions may be related to posttraumatic growth.

Posttraumatic Growth

Definitions of Posttraumatic Growth. In contrast to resilience, posttraumatic growth (PTG) refers to reports of positive changes that occur as a result of individual's cognitions and ability to cope with traumatic life events. Thus, individuals who are resilient have adjusted successfully to adversity, while individuals who experience PTG have been transformed by their struggles. Tedeschi and Calhoun (1996, 2004) provided examples of growth including perceptions of greater intimacy, closeness, and meaning in relationships, or increased compassion towards others who suffer adversity. Trauma survivors

may discover new possibilities in life, including embarking on a new life path, or they may develop a newfound sense of competence or confidence. Growth may also be experienced in spirituality or in the discovery of a greater sense of purpose and meaning in life.

Hobfoll et al. (2007a) believed individuals who report experiencing a recovery from loss or trauma are most likely to experience and report PTG. The growth after trauma may be a marker of positive adaptation and not just cognitive processing or working through a stressful event. PTG has been related to more adaptive coping (Linley & Joseph, 2004; Updegraff & Taylor, 2000) and to higher persistence of cognitive processing (Tedeschi & Calhoun, 2004). Westphal and Bonanno (2007) posit that PTG is not superior to resilience as Hobfoll and colleagues have discussed. Instead, those who are resilient may not need or have opportunities to experience PTG.

Empirical evidence suggests that growth can occur following a range of experiences including death of a loved one (Davis et al., 1998), being a prisoner of war (Erbes et al., 2005), military combat (Fontana & Rosenheck, 1998), terrorism (Butler et al., 2005), interpersonal violence and sexual abuse (Frazier, Conlon, & Glaser, 2001; Lev-Wiesel, Amir, & Besser, 2005), intimate partner violence (Cobb, Tedeschi, Calhoun, & Cann, 2006), illness and surgery (Cordova, Cunningham, Carlson, & Andrykowski, 2001; Updegraff, Taylor, Kemeny, & Wyatt, 2002), accidents and disasters, cancer, and HIV infection and AIDS, (see Linley & Joseph, 2004; Joseph & Linley, 2006). Research in this area was

criticized initially as being positive illusion and self-deception rather than growth, but the evidence is clearly supportive of the idea that growth occurs following trauma and adversity (Tedeschi & Calhoun, 2004).

Growth after trauma has only recently been researched and theorized, although Victor Frankl (1963) began writing about this construct almost 50 years ago after reflecting on the positive growth he experienced while imprisoned in concentration camps. He described the ability to discover meaning in life even through unavoidable suffering. Since Frankl, finding meaning has been studied as a way to cope with loss and suffering (Baumeister, 1991; Klinger, 1977, 1987; Silver et al., 1983; Silver & Wortman, 1980) and has even been described as the "dark night of the soul" (May, 2004). A common thread among Folkman's (1997) four coping styles discussed earlier is the search for positive meaning. PTG does not lessen the trauma survivor's emotional distress but suggests that it can help trigger a reconsideration of their life, purpose, and meaning (Calhoun, Cann, Tedeschi, & McMillan, 2000; Tedeschi & Calhoun, 1995, 2004).

Trauma survivors may recognize the growth or benefit they have experienced from the trauma but continue to experience distress thus producing a paradoxical outlook. Therefore, PTG may come from great distress and may be maintained through continued distress (Tedeschi & Kilmer, 2005). As noted by Park (1998), it is possible that the failure to find negative relations between PTG and distress is due to some people reporting growth and denying negative aspects of the experience while others do not (e.g., Taylor, Kemey, Reed, & Aspinwall,

1991). Additionally, continuing levels of distress that are manageable can contribute to PTG (Calhoun & Tedeschi, 1998). While the current literature indicates that high levels of PTG are correlated with and may result in reduced levels of psychological distress, it is not true in all studies (Tedeschi & Calhoun, 2004). However, curvilinear relations between stress severity and PTG have also been found (Fontana & Rosenheck, 1998).

It is the struggle during the aftermath of the trauma and not the trauma itself that produces the PTG (Tedeschi & Kilmer, 2005). Therefore, differences in PTG scores may not be related to the traumatic event but rather to characteristics of the subjective experience of the event, including factors related to helplessness, controllability, and life threat (Briere & Elliott, 2000; Linley & Joseph, 2004). Unlike Dienstbier (1989, 1992), Tedeschi and Calhoun (2004) suggested that only extreme traumas should substantially disrupt one's beliefs about the world and basic assumptions about one's life that traumas provide but lower level stressors do not. They instead restrict growth to trauma defined as a crisis or highly stressful event. Stress severity has been found to be positively related to PTG. For example, combat veterans with greater combat exposure reported higher levels of PTG (Aldwin et al., 1994). However, Palmieri and colleagues (2008) suggested that traumatic growth in the case of war and terrorism may reflect a "wishful thinking" perspective, a way of dealing with PTSD symptoms, or a reflection of people becoming more distressed as they seek more growth.

Individuals experiencing a severe trauma reported higher levels of positive personal changes in comparison to individuals who did not report trauma exposure (Tedeschi & Calhoun, 1996). However, individuals who have not experienced trauma still report growth that may suggest a tendency for people to perceive themselves as making positive changes not only as a result of learning from a traumatic event (McFarland & Alvaro, 2000). Some studies have not found the experience of trauma to be associated with PTG (Helgeson, Reynolds, & Tomich, 2006; Hobfoll Canetti-Nisim, & Johnson, 2006).

As with most psychological constructs, a variety of terms have been used to describe PTG including positive psychological changes (Yalom & Lieberman, 1991), heightened existential awareness (Yalom & Lieberman, 1991), transformational coping (Aldwin, 1994), positive by-products (McMillen, Zuravin, & Rideout, 1995; McMillen & Cook, 2003), thriving (Abraido-Lanza, Guir, & Colon, 1998; O'Leary & Ickovics, 1995), stress-related growth (Park, Cohen, & Murch, 1996), finding benefits (Affleck & Tennen, 1996; Tennen & Affleck, 2002), flourishing (Ryff & Singer, 1998), discovery of meaning (Bower, Kemeny, Taylor, & Fahey, 1998; Wong, 2008, 2009), and adversarial growth (Linley & Joseph, 2004). Despite the gamut of terminology used in the literature, they all describe the phenomenon of "positive psychological change experienced as a result of the struggle with highly challenging life circumstances" (Tedeschi & Calhoun, 2004, p. 1). Three broad dimensions of growth can be found within most of these constructs. They include enhancements within relationships and

valuing others more, a greater sense of personal resiliency and strength along with acceptance of limitations, and finally, changes in life philosophy while finding appreciation for each new day. The term PTG (Tedeschi & Calhoun, 1995, 1996) will be used throughout the current study.

Theories of Posttraumatic Growth. Several theories of PTG have been developed including Mahoney's (1982) Model of Human Change Processes that suggests change occurs through psychological disequilibrium that results from the pursuit, construction, and alteration of meaning. Aldwin and Stokols (1988) proposed a Deviation-Amplification Model that accounted for long term outcomes of stress. Their theory draws from the developmental vulnerability and resilience literature that suggests a range of people and situation factors would promote or impede positive change. These factors can include social support, intelligence, effective coping, determination, and flexible attitudes. Negative changes would include the opposite such as social isolation, mood swings, difficult temperaments, poor coping strategies, and a lack of social resources (Aldwin & Sutton, 1998). The Deviation-Amplification Theory set the stage for later theorists to formulate specific ideas using psychosocial factors that were included in models of growth.

Schaefer and Moos (1992) built on previous theories and posited that personal factors, such as resources of self-efficacy, resilience, motivation, health, prior experience, socioeconomic status, and environmental factors such as relationships, social support, and home environments, impact the way life crises

are experienced. Their theory proposed a combination of personal and environmental system factors that shape the cognitive appraisals and responses an individual has to a trauma. Two important aspects of their theory are the differences between approach coping that leads to positive changes (e.g., logical analysis of the situation, positive reappraisal, support seeking, active coping) and avoidance coping that does not lead to adaptation (e.g., trying to minimize the problem, withdrawing from the problem, venting emotions). Three types of positive outcomes from approach coping were described as enhanced social, personal, and coping resources (Schaefer & Moos, 1998).

Other theorists including Hager and Nerkens have also proposed models of PTG. Hager's (1992) Model of Chaos and Growth proposed different periods of confusion and disorganization that are a necessary part of the ability to grow and change as survivors of trauma reorganize and redevelop cognitive structures. Nerken's (1993) Theory of Growth emphasized an active process in which self-reflection and subsequent meaning making are essential for growth to occur. The Biopsychosocial-Evolutionary view by Christopher (2004) followed these earlier theories and incorporated more aspects of the human experience. He examined the normal trauma response through an evolutionary metalearning perspective, including parts of the self, society, and nature and where learning can take place. In this theory, negative consequences related to trauma may be a result of a failure to modulate adequately the normal adaptive trauma response. This lack of modulation of stress can result in psychopathology with changes occurring

biologically and/or psychologically, whereas the normal outcome of PTS should be growth. His ideas are comprehensive and holistic, taking into account many aspects that can lead to growth.

Joseph (2004) proposed a person-centered perspective in which human beings are viewed as active, growth-oriented organisms who are intrinsically motivated to cognitively accommodate their psychological experiences. This theory represents the normal psychological manifestation of a process of breakdown and disorganization of the self-structure that can occur after experiencing a trauma. As the individual develops a new structure that is congruent between who they are and the experiences they have had, they become more fully functioning. The individual will not return to their pre-trauma level of functioning but go beyond their previous levels of functioning and move toward growth.

The Organismic Valuing Theory (Ryan, 1995; Ryan & Deci, 2000, 2001; Sheldon, Arndt, & Houser-Marko, 2003) refers to people's innate ability to know what their priorities are, what is important, and what is essential for a fulfilling life. Thus, it is human nature to modify existing schemas about the world and to work toward positively accommodating new trauma-related information. While the new information is being processed and stored in active memory there is an oscillation between the intrusive and avoidant states that leads to higher levels of distress and arousal to defend against further distress. When a baseline is reached

and the oscillation discontinues, the result is cognitive assimilation of the traumatic memory or a revision of existing schemas to accommodate the new information (Joseph & Linley, 2006).

Traumatic events can be processed in two ways: Assimilation (within existing models of the world) and accommodation (with new-trauma related information) (Hollon & Garber, 1988). Therefore, the concept of meaning is important to the process of growth and development of new worldviews. Janoff-Bulman and Frantz (1997) provide distinctions between meaning as comprehensibility and meaning as significance. Theories of PTSD examine meaning as comprehensible including a survivor's understanding of the event and why it happened, while theories of growth are more concerned with meaning as significance and understanding the world view, philosophical, or spiritual implications of the event. Cognitive accommodation can lead to negative changes (leading to psychopathology and distress) and positive changes (in world view and growth).

Functional-descriptive model. Clearly, there are a number of theoretical models that describe the possible processes that can lead to eventual growth. The most comprehensive theoretical description of growth, the Functional Descriptive Model, was developed on the theoretical literature of PTS that pointed to the importance of appraisal processes. This study will examine PTG through the lens of Tedeschi and Calhoun's (1995, 2004) theory, that people may not only experience psychological distress by threatening or challenging the core beliefs

they hold but may also experience potential consequences of PTG through cognitive efforts to redefine those beliefs and rebuild their assumptive world (Calhoun & Tedeschi, 2006; Janoff-Bulman, 1992, 2004).

While trauma survivors may report growth in several domains of their lives, they may also feel vulnerable due to the suffering they experienced that seemed out of their control. Assumptions about the predictability and controllability of the world can challenge one's identity and future and change a person's outlook on life such as negative views of the world and where they fit in it, feelings of hopelessness, and lacking a sense of safety (Janoff-Bulman, 1992). These views may be highly accessible even years after the traumatic event and come to one's mind in response to internal and external cues (Berntsen, 2001). Sumer et al. (2005) found that intrusions reflected in the ongoing processing of the traumatic event are directly related to the severity of the disaster experience. The shattering of schemas is associated with significant psychological distress and activation of cognitive processing or ruminative thoughts about trauma related issues, which may lead to growth (Janoff-Bulman, 1992).

Cognitive processing is an essential component in producing PTG. Cognitive restructuring after trauma takes into account the changed reality of one's life. Trauma survivors produce schemas that incorporate the trauma and possible events in the future that are more resistant to being shattered (Janoff-Bulman, 1992). Some individuals who have experienced trauma report increased perceived ability to survive and prevail (Calhoun & Tedeschi, 1999). Successful

coping facilitates disengagement from goals and beliefs that are no longer reachable or tenable within their environment after the trauma.

Methods in Positive Psychology Research. Aldwin et al. (1994) theorized that positive consequences and traumatic exposure should have a quadratic trend in the shape of an inverted "U", such that higher positive consequences were postulated for intermediate levels of exposure compared to high or low levels of exposure; however, they only found minimal signs of this trend. Similarly, Bowman (1999) suggested the relationship between traumatic events and distress responses would better match the inverted U curve. In a U-shaped effect relationship, zero or low exposure dosages are harmful, whereas intermediate dosages elicit either null or positive health effects (May & Bigelow, 2005). For example, a low dose (single event) would elicit an inadequate response, a moderate dose (more events) elicits relatively best performance that shows learning, adaptation, and positive change, while a high dose (multiple events) exhausts the adaptive capacities of the individual, who shows increasing problems and distress. There is increasing empirical evidence for this dose–effect relationship (Breslau et al., 1999a; Follette, Polusny, Bechtle, & Naugle, 1996; Hall, 1999; Laurie, 1996; Lifton, 1992; Mollica, McInnes, Poole, & Tor, 1998; Nishith, et al., 2000; Turner & Lloyd, 1995).

Seery et al. (2010) reported that low and high levels of stress should be most likely to lead to resilience compared to no stress. This would suggest a quadratic, curvilinear relationship between cumulative trauma and outcome

measures. Additionally, a linear relationship can also occur in which more cumulative trauma predicts worse outcomes (May & Bigelow, 2005). Seery and colleagues (2010) found a quadratic relationship between cumulative lifetime adversity and four longitudinal mental health and well-being outcomes (global distress, functional impairment, life satisfaction, and PTS symptoms).

Masten et al. (1999) used discriminant function analysis and cluster analysis to look at differences among maladaptive youth from two competence groups by using resources and well-being indicators. They found that the resilient and low-adversity groups could not be discriminated from each other among the resource and well-being outcomes. These results support the idea that low level stressors may help an individual to adapt to challenges and experience resilience. Three longitudinal studies found an individual's perceived benefits of growth to be related to fewer physical and mental health problems including less heart attack recurrence following a heart attack (Affleck, Tennen, Croog, & Levine, 1987), less distress in sexual assault survivors (Frazier et al., 2001), and lower levels of functional disability after diagnosis of Rheumatoid Arthritis, even after controlling for initial disability level (Danoff-Burg & Revenson, 2005).

Individual Differences in Posttraumatic Growth. PTG is experienced as an outcome rather than a coping mechanism. Positive stress-related outcomes such as personal and social resources (e.g., positive mood, social action, greater depth of trauma processing) have been found among studies looking at PTG after trauma (Hobfoll et al., 2007a, 2007b; Ickovics et al., 2006; Weinrib, Rothrock, &

Johnsen, 2006). Growth can occur even when there is a high level of growth at the pre-trauma level. However, one's sense of growth may also help individuals even when their level of growth was lower than the pre-trauma level (Hobfoll et al., 2007b; Kimhi, Eshel, Zysberg, & Hantman, 2010). Findings from PTG research are similar to those of resilience research that suggest three main clusters of variables facilitate positive adaptation and growth, including individual attributes, a nurturing family environment, and broader contextual variables (See Tedeschi & Kilmer, 2005 for review).

PTG may occur soon after the trauma; for example, Wortman, Silver, Van den Bos, and Bryant (1987) found individuals who had serious spinal cord injuries reported low frequencies of negative affect and high frequencies of positive affect just one week after the injury. Longitudinal studies have provided additional information regarding the effects of PTG. Schwarzer and his colleagues (2006) found stress-related growth to increase from one month to 12 months after cancer-related surgery, while Butler et al. (2005) found PTG to decrease over six and a half months. However, there have been mixed findings in the current literature. For example, one study found stress-related growth did not change at three, six, and 12 months after cancer-related surgery (Urcuyo, Boyers, Carver, & Antoni, 2005).

As people age, it is likely that they will experience highly stressful events or trauma. The result of traumatic experiences add up throughout life and may be related to more or less intense symptomatology. Cumulative trauma may reduce

or enhance resistance to further stressful events. It has been suggested that more negative experiences are likely to affect older people while younger individuals use optimism, enthusiasm, energy, and hopefulness to help recover from trauma more so than do older individuals (Kimhi et al., 2010). People of younger age have also been found to experience more growth than older individuals (e.g., Bellizzi & Blank, 2006; Cordova et al., 2007). The affective quality of learning and change that occurs with PTG may be evident and distinguished from other normative developmental processes that lead people to report improvements or maturation over time (Tedeschi & Calhoun, 2004). Thus, the construct of PTG is more applicable to adolescents and adults than to children and the elderly as it implies there is an established set of schemas that are able to change in the wake of a trauma (Powell, Rosner, Butollo, Tedeschi, & Calhoun, 2003). Based on the literature reviewed above reporting younger individuals to experience more growth, it is important to examine PTG within the transitional stage of emerging adulthood.

Psychosocial Development

Theories of Adult Development. Arnett (2004) has suggested that emerging adulthood is a "crucial time for the development of a world view" (p. 166). He noted that the advanced pursuits for education in contemporary Western societies bring with it a transition period between adolescence and adulthood. The ages of 18 to 25 incorporate this transitional stage of life in which the process of identity development may continue.

Theorists have only recently discussed the psychosocial stages of development in emerging adulthood. Most developmental psychologists believe that adult "stages" of psychosocial development can be experienced in almost any order and experienced more than once (Berger, 2008). The most well-known theorists on adult development are Erik Erikson, Daniel Levinson, Bernice Neugarten, and Gail Sheehy (Papalia, Olds, & Feldman, 1998). These theories will be discussed in regards to their relevance for identity development among emerging adults.

Erikson's Theory of Psychosocial Development. Erik Erikson (1968) was the first theorist to describe significant psychosocial developmental stages in adulthood. Erikson originally envisioned the eight psychosocial stages in sequence, but it is now apparent that there are no age boundaries. Each stage is characterized by a psychological crisis that must be resolved to move on to the next stage of development. If individuals are unable to cope with the crisis or they do so in a maladaptive way, they will have difficulties overcoming that stage of development and moving on to the next stage. The outcome will be more struggles with that issue later in life (Carroll & Wolpe, 1996).

By early adulthood, individuals should have navigated through Erikson's (1963) psychosocial stages in terms of polarities including trust versus mistrust, autonomy versus doubt, initiative versus guilt, industry versus inferiority, and identity versus role confusion (Feldman, 2003). Adults should emerge from adolescence and early adulthood with a good idea of who they are and who they

want to become in the future. They are then ready to move to the sixth stage of intimacy versus isolation. Erikson's fifth psychosocial crisis regarding the search for personal identity is now considered a lengthy process, starting at puberty with few young people developing a firm sense of who they are and what path they will follow until later adulthood (Côté, 2006; Kroger, 2006; Santrock, 1996). Additional years between high school and adult responsibilities may extend the time period for the potential to experience an identity crisis (Berger, 2008).

Young adults may experience some distress in which, for example, they cannot make use of the careers available to them. This identity confusion usually becomes salient when the individual is exposed to many experiences that demand simultaneous commitments including physical intimacy, making career decisions, or defining one's self. From all the possible options, an individual must choose from an ever-narrowing selection of personal, occupational, sexual, and ideological commitments to begin forming their personal identity. Identity is complex in the sense that it contains both the past and future self of an individual and society; it provides a link with the individual's current experience, experience of his/her past self, and the promise of his/her future self (Erikson, 1968).

Identity Development. Erikson (1963) defined identity as the individual's answer to the question "Who am I?" Individuals begin forming their identity by responding to and reflecting on this question as well as: "What do I value? What are my goals? What do I want to do with my life?" and "Where do I fit in?" All human beings have a drive to answer these identity-related questions and given

the demands of modern society, identity formation may take longer than previously proposed by Erikson (Bosch & Curran, 2011).

It is now evident that identity development is an extensive process that neither begins nor ends in adolescence (Arnett, 2000; Santrock, 1996). Erikson was clearly the most influential developmental theorist to conceptualize the formation of identity. He articulately stated that identity formation is a process of simultaneous reflection and observation that occurs, partly unconsciously, on all levels of mental functioning. Therefore, the experience of trauma may lead to difficulties forming a coherent identity.

Identity has more recently been defined as "an internal, self-constructed, dynamic organization of drives, abilities, beliefs and individual history" (Marcia, 1980, p. 159). In comparison to the term self-concept, which focuses on the self anchored in the intrapsychic experience of the individual, identity encompasses both the individual and society (Johnson & Nozick, 2011). The self-concept develops prior to adolescence in a concrete form but becomes more abstract and psychological in character throughout development (Harter, 1999). In contrast, identity begins to develop in adolescence and serves to link youths to the larger concerns of society including vocation, religion, and politics (Johnson & Nozick, 2011).

Marcia (1966) substantially added to Erikson's proposals by describing self-exploration and commitment as key dimensions to identity development. Specifically, individuals are classified as being in the exploration dimension when

they are actively seeking, questioning, and weighing various identity alternatives before resolving issues about their life's direction and purpose. Committed individuals are conceptualized as having resolved their identity issues and as having developed a sense of identity. For example, committed individuals are more secure in their selection of an occupation, relationship, group membership, and religion and are more at ease when they engage in activities to implement their choices. Research on identity commitment has indicated that it is related to self-continuity and the sense of being the same person in different contexts (Dunkel, 2005). Marcia combined dimensions of high or low levels of identity exploration and commitment to create the four identity statuses (diffusion, foreclosure, moratorium, and achievement) representing the structures of identity. The ultimate psychosocial goal according to Erikson (1968) is identity achievement (high in exploration and commitment) or the point when an individual understands who he or she is as a unique person. These individuals have explored various alternatives and are able to make a commitment that they currently implement and desire to continue in the future. Achievement is associated with commitment to one's identity following extensive exploration (Erikson, 1968).

Diffused individuals (low in exploration and commitment) are not actively seeking or exploring different alternatives and have not committed to any particular goals, roles, or beliefs. Identity diffusion is characterized as a time when one does not know or care about what is his or her identity. They are not

actively seeking or exploring different alternatives. These individuals lack commitments to goals or values even in usual social demands such as putting away clothes, making friends, doing school work, and thinking about college or jobs (Berger, 2008; Marcia, 1966).

Identity foreclosure occurs when individuals do not question or analyze their values and goals but rather adopt their parents', friends', or society's roles and values. Foreclosure (low in exploration, but high in commitment) is often a comfortable status where individuals can avoid the anxiety of forging their own path as they are not actively seeking or exploring alternatives and they have committed to particular goals, roles, and beliefs. Their identity commitments are attained from modeling rather than actively seeking and questioning alternatives. Thus, their identity commitments do not evolve from exploration (Berger, 2008; Marcia, 1966).

Moratorium (high in exploration, low in commitment) is the identity status in which individuals postpone making decisions that lead to identity achievement and instead go to college and study many different disciplines, go on religious missions, or join the military. This allows the individual to buy time rather than getting married and/or selecting a career right away. Individuals in moratorium status see this time as temporary and not their final identity. They are desperately searching to make a decision but have not yet chosen from their alternatives. Individuals in this stage are sometimes considered to be in a crisis due to their active exploration of different options, desperate searching to make a decision,

and having not yet chosen from their alternatives. These individuals are in the process of exploration and may have vague commitments (Berger, 2008; Marcia, 1966).

The identity statuses theoretically follow a developmental trajectory in which all individuals start in the diffused status. The typical path is then to proceed through moratorium status to achievement; however, some individuals take a detour on this path and find themselves in a foreclosed status. Longitudinal and cross-sectional studies have revealed a hierarchy of identity statuses from diffused and foreclosed levels to statuses of moratorium and achievement (Erlanger, 1998; Fitch & Adams, 1983; Kroger & Haslett, 1988; Marcia, 1976; Waterman & Goldman, 1976).

Based on a number of studies, Waterman (1999) proposed that during adolescence and the transition to adulthood, there would be movement out of the identity diffusion status into the achieved status with progressive shifts in and out of the foreclosure and moratorium statuses. Waterman's proposal was reformulated to suggest that during the college years there would be more transitions through moratorium status than at other ages (Kroger, Martinussen, & Marcia, 2010). Research has found that Erikson's (1968) and Marcia and colleagues' (1993) theories in which late adolescence and young adults progress rather than regress through identity statuses are valid (Kroger et al., 2010).

Gould's Theory of Adult Development. While Erikson's Theory of Psychosocial Development is the most well known and researched theory of

development, there are several other theories that shed light on adult development. Gould's (1972, 1978) Theory of Adult Development is conceived of confrontations between childhood consciousness and adult reality in which cognitive irrationalities are identified and rejected. Adults are in a dynamic conflict and without direction. The major task is to attain an adult consciousness that challenges the arbitrary rules and false assumptions characteristic of the childhood consciousness.

Two of the age groups in this theory of adult development include what has been termed "emerging adults" (Arnett, 2000, 2004). The first of these age groups (ages 18 to 22) consists of the theme "We have to get away from our parents"; in which emerging adults feel as though they are halfway out of their house and worry they will be pulled back to live with their parents again. They are involved in many kinds of actions including living away from home, working, and making their own financial decisions. While they are implementing their own choices, they are not totally committed to these decisions. Their peers are important in helping them out of the family but also become a threat to their own authentic beliefs (Gould, 1972, 1978; Thomas & Kuh, 1982).

The second of these age groups (ages 22 to 28) is characterized as a life independent of parents, where individuals feel more established and autonomous. At this age, individuals feel that what they are doing is the true course in life, and their commitments are the right ones. Gould (1972, 1978) suggested that most of their energy is consumed in mastering who they are and who they will become.

They feel as though their "self" is defined and understood even if they are not satisfied with it. Peers are still important at this point but are not relied on as much as self-reliance. However, this stage requires the establishment and maintenance of an intimate relationship without compromising or losing one's identity. There is also an emphasis on learning the ability to modulate emotions (Gould, 1972, 1978; Thomas & Kuh, 1982).

Gould (1972, 1978) and Marcia (1966) share several similarities in their theories of adult development and the exploration and commitment emerging adults experience within their identity. The first age group of Gould's theory discussed earlier closely resembles that of Marcia's moratorium identity status in which adolescents and emerging adults are exploring their roles, values, goals, and beliefs without having any commitments in these areas. Gould's second age group is similar to that of identity foreclosure or identity achievement in which commitments are made by either adopting their friends' or parents' ideas (foreclosure) or having figured out what they want for their life and making their own commitments (achievement).

Sheehy's Theory of Adult Development. Writing for the lay-person, Sheehy (1974) described adult development as movement throughout time in which a predictable series of crises and transitions occur: The "Trying Twenties" (ages 20 to 30), the "Catch Thirties" (ages 30 to 35), and the "Deadline Decade" (ages 35 to 45) occur. The "Trying Twenties" incorporates the challenges of establishing life patterns and commitments (e.g., marriage and occupational

choice). Sheehy found individuals to gravitate toward one or the other end of the "commitment-exploration continuum." For example, individuals move toward either making relationships or career commitments or remaining relatively free from long-term commitments. The individual must develop the capacity for intimacy without compromising the self-identity acquired (Thomas & Kuh, 1982).

Sheehy's theory (1974) is dependent on social context and life events involved in the stages described and are connoted in a heterosexual, patriarchal, Anglo-Saxon bias. Thus, Sheehy's stages are controversial in regards to whether they are truly universal or rather variants in behavior (Berger, 2008). Other theorists believe that the concept of transition (e.g., marriage, divorce, childbirth, retirement, graduation from high school or college, loss of a loved one) is more descriptive of development than of age-linked periods or stages (Hareven & Adams, 1982; Lowenthal, Thurnber, & Chiribaga, 1975). The transition becomes a position of primacy in one's consciousness and may be more encompassing than the developmental task theories.

Neugarten's Social Clock Theory. Neugarten's (1976) Social Clock Theory also records major milestones of life. This theory suggests that the stages of life and the behaviors that come along with them are set by social standards and culture (Berger, 2008) rather than by biological maturation or a specific age (Sanders & Reinisch, 1999). Thus, the Social Clock Theory is a timetable based on social norms (Neugarten & Neugarten, 1986). For example, "emerging adulthood" begins when the culture believes it does rather than at a particular age

in all cultures. Neugarten suggested that any event, whether it is historical, economic, or political varies among individuals based on the personal significance it holds for the person's point in development. For example, the effects of the economic crash or the Wars in Iraq and Afghanistan for a young person just graduating from high school and entering the workforce differ greatly from the same event's effects on a middle-aged adult at the pinnacle of their career.

Freud (1962) suggested that the individual creates a sense of self very early in life as described in the development of the ego, while Mead (1974) suggested that the differentiated self between the "I" and the "me" placed the development of self very early in childhood. Neugarten (1976) posits that adulthood is the time when the individual creates a sense of self and his/her individual life cycle. While a traumatic experience is not an expected major life event such as marriage or retirement, Neugarten reported that it is the unanticipated events (divorce, early widowhood, death of a child) and not the anticipated that are likely to represent a traumatic stressor.

Composite Framework of Adult Development. Thomas and Kuh (1982) synthesized the above theories to create a Composite Framework of Adult Development for use by helping professionals. They named three developmental periods: Novice Adulthood: Ready, Set, Go!...Where? (22 to 28 years of age); Rethinking Adulthood: If Only I knew Then What I Know Now! (29 to 32 years

of age); and Differentiated, Responsible Adulthood: On My Own-Grown, Groan! (33 to 40 years of age).

As a "Novice Adult," the individual's behavior conforms to family and society's expectations. The conflict between intimacy and identity exploration surfaces, and the individual may struggle to maintain intimate relationships without the loss of identity. The need to stay uncommitted and to continue experimenting with new behaviors remains high as personal goals related to career and relationship aspirations are tentatively established. "Rethinking Adulthood" is a transitional phase in which the novice adulthood behaviors are replaced with more exploration and commitments. Goals are reconsidered and revisions are made in regards to decisions about vocation, relationships, and so forth. In the "Differentiated, Responsible Adult" phase, there is more focus on attaining goals, acknowledging that behaviors are internally controlled rather than by external conditions, and recognizing the inherent conflict between the desire for autonomy and the need for societal affirmation (Thomas & Kuh, 1982).

Levinson's Life Structure Theory. Similar to Erikson's (1968) psychosocial developmental theory, Levinson's (1986) theory is also deeply rooted in the life cycle and life course. Erikson's stages including age ranges provide a representation of the life cycle as a whole. The primary components of Levinson's life structure theory are the person's relationships, groups, cultures, objects and places that involve an investment of one's self including their desires,

values, commitment, energy, and skill. Erikson and Levinson both defined age periods in terms of the developmental tasks related to them.

In contrast to Erikson's developmental tasks within each stage, Levinson (1986) suggested that a person could move from one period only when that person had started working on a new developmental task or building a new self structure. He described adult development according to particular age-linked periods and believed these periods occur in a predictable sequence, with infinite variation of onset and duration. He did not believe that there is a particular structure that predominates development. His transitions of adulthood stages for emerging adults are age specific and based heavily on societal expectations (Thomas & Kuh, 1982).

Unfortunately, theories do not provide the absolute truth about how human behavior works. However, they do help provide a conceptual framework and ideas about how to make sense of the data collected (Driscoll, 2005). Shulman (1988) suggested adopting an attitude of "disciplined eclectic" to view each theory and how it contributes to solving important scholarly problems. There appears to be overarching similarities among the existing theories of adult development. Each theory described above incorporates the developmental characteristic of identity exploration and commitment. Thus, for the purposes of this study, the psychosocial stage of identity development is used to conceptualize the relationship of traumatic experiences and emerging adults' ability to form

successfully a cohesive identity. It is still widely unknown how the experience of trauma may be related to this developmental stage.

Trauma and Identity. Adolescents and emerging adults who experience trauma may be vulnerable to developmental disruptions. They may be prone to impaired identity formation, premature closure of identity formation and early entrance to adulthood (Pynoos & Eth, 1985), behavioral problems, difficulties building intimate relationships, and poor work values (Figley, 1985). Exposure to trauma and subsequent development of PTSD can foster lasting and profound changes in one's identity. The experience of who one is as a person and the way he/she engages with society may be thwarted (Herman, 1992; Janoff-Bulman, 1992; Ehlers, Maercker, Boos, 2000; Dunmore, Clark, & Ehlers, 2001; Brewin, 2003; Joseph & Linley, 2006; Rubin et al., 2007). Herman (1992) described identity change as a product of repeated or prolonged traumatic experiences that contribute to psychological dysfunctions. While there is a wealth of research on normative aspects of identity development (e.g., Crocetti, Rubini, & Meeus, 2008; Vleioras & Bosma, 2005), there is a critical need to understand the linkages between identity and exposure to traumatic stressors.

The reasons why some individuals experience difficulties resolving psychosocial developmental tasks are not well established; however, the experience of trauma may challenge one’s ability to form a stable identity. The overwhelming experience associated with trauma exposure may be related to identity distress, disrupt normal development, and increase risks for individual

dysfunction. Identity distress can be described as having exceptional difficulties in the process of identity development. Traumatic stressors may precipitate identity distress due to re-evaluation of previous identity commitments that have changed from the trauma. As young adults explore different elements of their lives, some distress related to their identity is normal and expected (Erikson, 1963); however, some individuals experience a severe and debilitating identity crisis (Adams & Adams, 1989; Waterman, 1988). Identity distress has been related to poorer psychological adjustment (Berman, Kennerly, & Kennerly, 2008; Hernandez, Montgomery, & Kurtines, 2006).

Research has also indicated that identity distress decreases with age from late adolescence/emerging adulthood into middle age and beyond (e.g., Waterman, 1993; Wiley et al., 2011). However, the elaboration and consolidation of a sense of identity can be a lifelong process. Identity distress may continue into emerging adulthood as individuals re-explore and redefine their identity commitments (Berman, Weems, & Petkus, 2009; Stephen, Fraser, & Marcia, 1992), especially after experiencing trauma or highly stressful events (Wiley et al., 2011).

Parson (1998) reported that identity is the first casualty of overwhelming experiences. Research has found the experience of trauma in childhood and adolescence has immediate negative effects and lingering effects on adult development and functioning (Briere, Kaltman, & Green, 2008; Cook et al, 2005). One study by Madan-Swain et al. (2000) investigated identity formation among

adolescent survivors of childhood cancer and healthy adolescent counterparts. They found a greater frequency of survivors within the foreclosed identity status (low in identity exploration, but high in identity commitments). Survivor's cancer diagnosis, symptoms of PTSD, and greater levels of conflict within family functioning were associated with the foreclosed identity status. These findings suggest that the foreclosed identity status may serve as a protective function in assisting survivors to cope with the stressors associated with a traumatic event such as being diagnosed with cancer.

Erikson (1968) suggested that to construct a stable identity, individuals need an average, expected environment. Traumatic events have the potential to disrupt seriously the life, environment, and social networks of individuals, groups, and communities. It is reasonable, therefore, to suggest that trauma may result in changes related to self, identity, and culture (Deeny & McFetridge, 2005). A temporary or permanent loss of culture can also create an identity crisis for an individual (Dugan, 2007).

Reviews of the vast literature on Holocaust trauma indicate that offspring of Holocaust survivors who suffer from mental ailments present a pattern of impaired self-esteem with persistent identity problems (Felsen, 1997; Soloman, 1997) and personality disorders (Kellermann, 1999). Amir and Lev-Wiesel (2001) found that Holocaust survivors with lost identity had significantly lower physiological, psychological, and social quality of life and higher levels of somatization, depression, and anxiety compared to those who had retained their

identity. These findings suggest that the psychological consequences of not knowing one's identity can be long-lasting.

The capacity of torture to destroy a person's identity has also been examined (Behnia, 1997; Genefgke, Marcussen, & Rasmussen, 2000; Ramsey, Gorst-Unsworth, & Turner, 1993) with findings suggesting that some survivors of torturous acts, such as physical injury, mutilation, and subsequent disability, may suffer from distortions of self-concept and in their sense of identity (Silove, 1999; Skylv, 1992). Ebert and Dyck (2004) found that exposure to interpersonal stress, exemplified by the experience of torture, also represents a threat to the psychological integrity of the victim. The experience is likely to result in the loss of the survivor's pretrauma identity, characterized by loss of core beliefs and values, feelings of distrust, shame, guilt, alienation from others, and a sense of being permanently damaged. Individuals' sense of identity comes from a collective response to their roles, culture, relationships, and community, among other life events and circumstances. Thus, the loss of some of these elements could result in the loss of core elements of identity.

There have been empirical linkages found among PTSD symptomatology and identity distress. Erikson (1968) concluded in his observations of World War II veterans that they had lost a sense of ego-identity or self-sameness and continuity. During crisis intervention training for humanitarian aid workers, (Spiers, 1997) found that the trauma of the war exacerbated an identity crisis. The perception of loss of autonomy, choice, and free will, and the perception that

one's identity cannot be maintained were found to be predictive of PTSD and symptom severity among sexually assaulted women (Ehlers et al., 1998). In a study with Hurricane Katrina survivors, Wiley et al. (2011) found trauma exposure to be related to identity distress ratings, and their results suggested that the association was a function of PTS symptoms. Similar results were reported by Brewin, Garnett, and Andrews (2011) who found that greater trauma exposure was associated with increased changes in perceptions of the world, but these perceptions were fully accounted for by PTSD status, while exposure to trauma alone was not related to any measure of identity change. PTSD was related to perceiving more negative changes about themselves and the world. This study sought to better understand the relationships among identity development, identity distress, and the experience of traumatic stressors for emerging adults.

Trauma-Centered Identity. Measuring the extent to which a traumatic memory forms a central component of personal identity, a turning point in the life story, and a reference point for everyday inferences, Berntsen and Rubin (2006) demonstrated the long-lasting effects of trauma on personal identity. Their participants with a PTSD symptom profile agreed more with the statements that the trauma was central to their identity and perceived more connections and similarities between the trauma and current experiences than did participants without a PTSD symptom profile. An individual with PTSD often struggles to find a way to reconcile the new, trauma-acquired identity with the old identity. Webb and Jobson (2011) found trauma-centered identity to be related to PTS

symptomatology. Their findings support the theory that where trauma memory is more central to a person's identity, that individual is more likely to suffer from symptoms of PTSD. It is possible that experiencing trauma and/or PTSD symptoms may destabilize or de-anchor one's identity, resulting in identity distress.

In another study, Berntsen and Rubin (2007) found that an important factor for the development and maintenance of PTSD symptoms was the extent to which a negative emotional event had become a personal reference point for the attribution of meaning to other events. This finding demonstrates that the role of the traumatic memory in cognitive organization of personal memories and identity may be a part of the development and/or maintenance of PTSD symptoms. Research has also suggested that the anxiety and life stressors associated with PTSD symptoms negatively influence cognition (Tramontana & Hooper, 1997), which could, in turn, cause identity distress as well as restrict higher levels of identity development.

Studying the self-presentations of veterans with PTSD, McNally, Lasko, Macklin, and Pitman (1995) found these veterans to have difficulties retrieving specific autobiographical memories of positive events compared to recall of personal memories during their military service. Their identity and personal memories had become centered around their trauma. Another study found individuals with PTSD reported themselves as being more strongly defined or identified by their trauma than did those who did not develop PTSD (Sutherland

& Bryant, 2005). Other researchers have suggested that traumatic events are psychologically encoded and leave their mark on the inner world and identity of survivors (Janoff-Bulman, 1992). More research is needed to examine whether trauma may lead survivors to experience an identity crisis and whether the related identity distress serves as a growth point or contributes to further psychopathology (Dugan, 2007) for those affected by trauma. It is not presumed that these issues are mutually exclusive, but rather trauma may affect identity in many different ways. In fact, survivors might experience a period of growth and a time of severe distress.

Although trauma may be related to an identity crisis, defined by Erikson (1963) as a necessary turning point when development must move one way or another, requiring resources of growth, recovery, and further differentiation, the result of a resolved developmental stage can be quite positive (Leavey, 2003; Papalia & Olds, 1981). Interviews with survivors of partner violence revealed that some survivors reported a negative impact on their identity while other survivors reported their experience had a positive impact on their identity. Describing themselves as survivors, they expressed a sense of resilience (Weaver, Turner, Schwarze, Thayer, & Carter-Sand, 2007). Conway (2005) suggested that incongruence between the trauma event and existing self-definition or identity can motivate change. Wiley, Hassert, Petrolle, and Robinson-Kurpius (n.d.) tested a path model with emerging adults and found that resilience mediated the relationships of self-esteem and identity distress with relationship distress.

Experiencing abuse in a dating relationship had a direct effect on the emerging adult's reported relationship distress, and this relationship was also mediated by one's resilience. The relationship of identity distress and relationship distress was also mediated by dating abuse. Furthermore, individuals who reported higher levels of dating abuse also reported poorer self-esteem, more identity and relationship distress, and less resilience. These results suggest that resilience is a key factor to development after trauma.

Resilience, Posttraumatic Growth, and Identity Development. The possibility that traumatic stressors may trigger both positive and negative changes in identity has received some research attention (Joseph & Linley, 2006). For example, despite the experience of multiple forms of violence, threats, and risks, resilient individuals may function well, with minimal distress or mental health problems (Bonanno, 2004). Victor Frankl (1984) suggested that one's suffering must be accepted and the unique task is to find ways to bear the burden. Thus, it is possible that one's sense of self is linked to one's resilience after enduring a traumatic experience.

Resilience theory is not as concerned with risks and deficits but focuses more on strengths and understanding healthy development in spite of risk exposure (Fergus & Zimmerman, 2005). Many researchers consider resilience to be a personal trait or individual attribute rather than a part of normal developmental processes that reflect positive adjustment despite adversity (Cowen, 1994; Luthar et al., 2000). However, Masten (2001) reported that in

order to be considered resilient, there must be a significant threat to one's development that is either current or past and is judged as having the ability to derail one's normative development.

While resilience can be achieved at any point in development (Shiner & Masten, 2002; Werner & Smith, 1992), there is no single way to maintain equilibrium following traumatic events, but there are multiple pathways to resilience (Luthar, Doernberger, & Zigler, 1993; Rutter, 1987). Some individuals who appear resilient (based on high social competence after stressful experiences) may show difficulties in some areas of adjustment even as they cope well in others (Luthar et al., 1993). Rutter (1993) reported that the term resilience suggests an unchanging characteristic; however, he believed there is every reason to suppose that developmental changes will influence resilience just as they influence any other characteristic.

Throughout life, each new experience, each gain or loss, requires a reassessment of identity (Cross & Markus, 1991; Kroger, 2007; van der Meulen, 2001; Zucker, Ostrove, & Stewart, 2002). Traumatic experiences can be damaging to a person's sense of identity (Mancini & Bonanno, 2006). Factors related to one's identity, including routines, social roles, and safety in the world, may be disrupted. The self is seen as damaged, inferior, or incomplete. For example, if a loved one is lost, survivors may report feeling as if a piece of them is missing. On the other hand, resilient individuals are able to experience an underlying continuity in who they are. It is quite possible that experiencing loss

or trauma can promote PTG and change to help expand one's understanding of his or her potential.

For individuals who have experienced a major life crisis, their lives are often conceptualized as having a before and after, for example, before and after the hurricane, before and after the miscarriage, before and after the combat deployment (Tedeschi & Calhoun, 1995). Tedeschi and Calhoun (2004) reported that PTG describes the experience in which one's development surpasses what was present before the trauma occurred. Some positive growth areas within one's identity have been found to be enhanced relationships and valuing close others more, positive changes in the way one views who he or she is, and changes in life philosophy such as finding appreciation for each new day or thinking about what matters since life is finite (Brewin et al., 2011; Tedeschi & Calhoun, 1996). Therefore, individuals experiencing a traumatic experience and reporting PTG may also report healthy identity development.

As trauma survivors reflect on their stressful experience, they may begin to recognize the discrepancy between unattained goals or schemas, and the trauma becomes a turning point in their identity (McAdams, 1993; McAdams, Reynolds, Lewis, Patten, & Bowman, 2001; Tedeschi & Calhoun, 1995). If the goals or schemas relate to one's identity and if they may appear to be unattained because of the trauma, the individual may feel as if they are now unattainable. Individuals may try formulating new goals and worldviews that can help them move forward and establish who they are after the trauma (Tedeschi & Calhoun, 2004). Thus,

the challenge of experiencing traumatic events can lead to many possibilities for PTG and healthy identity development (McAdams, 1993).

Fonagy, Steele, Steele, Higgitt, and Target (1994) described resilience as "normal development under difficult conditions" (p. 233); therefore, individuals who report experiencing traumatic events and are resilient may also report healthy identity formation. Bonanno (2004) suggested that it is imperative to study the full range of possible outcomes of trauma in order to understand health and resilience and determine how resilience varies across the life span and relates to developmental experiences. Currently, there is minimal research on the relationships of identity, resilience, and PTG; however, what is known is that individuals who have resolved their identity issues report better psychological well-being, adjustment, and emotional stability (e.g., Crocetti et al., 2008; Kroger, 2007; Luyckx, Goossens, Soenens, & Beyers, 2006). Consistent with this notion, one focus of the current research was to understand the factors related to identity that may contribute to resilience and PTG after experiencing trauma.

The Current Study

The literature review highlighted the frequency of traumatic events and the importance of understanding the relations among traumatic stressors and identity development. It also demonstrated the necessity of examining both positive and negative psychological changes that may occur after exposure to trauma. Additional information on the relations among traumatic experiences, identity development, and positive change can inform psychologists in assisting survivors

of trauma. Four research questions and seven corresponding hypotheses were derived from both literature and theory.

Research Questions and Hypotheses

Q1: What are the characteristics of the experience of trauma for the participants?

Q2: Are there differences among identity status groups (diffused, foreclosed, moratorium, achieved), between genders (male or female), and PTSD diagnostic status (PTSD diagnosis or no PTSD diagnosis) in identity distress, centrality of the trauma event, PTS symptoms, positive change (resilience, PTG), and identity development (identity exploration, identity commitment)?

H1: Participants in the diffused and moratorium identity statuses will report more identity distress, centrality of the trauma event, and PTS symptoms, and less positive change than will participants in the foreclosed and achieved identity status groups.

H2: Female participants will report greater identity distress, centrality of the trauma event, PTS symptoms, and positive change than will male participants.

H3: Participants with a PTSD diagnosis will report greater centrality of the trauma event, more identity exploration, more identity distress, more PTG, and less resilience and identity commitment than participants without a PTSD diagnosis.

Q3: What are the relations among trauma exposure, trauma severity, and positive change?

H4: There will be inverted U-shaped relationships (quadratic) between trauma exposure and PTG, between trauma exposure and resilience, between trauma severity and PTG, and between trauma severity and resilience.

Q4: Are the experience of trauma, the centrality of the trauma event, identity development, identity distress, and positive change interrelated?

H5: Centrality of the trauma event will predict identity distress above and beyond the experience of trauma.

H6: Identity distress and the centrality of the trauma event will predict identity development above and beyond the experience of trauma.

H7: Identity development, identity distress, centrality of the trauma event, and the experience of trauma will predict positive change.

Multiple constructs are tested in these hypotheses. The first construct is the experience of trauma, consisting of trauma exposure, trauma severity, time since the most recent trauma, and PTS symptoms. The second construct is identity development, which consists of identity exploration and identity commitment. Other variables are the centrality of the trauma event to one's identity and identity distress. The third construct is positive change, which consists of resilience and PTG.

Chapter 2

METHOD

Recruitment

After Institutional Review Board approval (Appendix A), community advocates and class instructors were contacted and invited to give the participant recruitment script (Appendix B) to their clients or students. The consent form and measures were provided using surveygizmo.com, an online survey program. The consent form on the opening page of the online survey stated the purpose was to study identity development, distress, and resilience after the experience of trauma (Appendix C). No personally identifying information was requested on the consent form or on the survey. The consent form told participants that survey questions were anonymous and that filling out the survey was their informed consent to participate. Participants were recruited from undergraduate courses at a large southwestern university, websites that serve trauma and abuse survivors, psychological listservs, national Reserve Officers' Training Corps (ROTC), and community mental health centers.

Participants

There were 1774 participants who logged onto the online webpage to complete the study. Out of these participants 268 surveys were opened but could not be analyzed as over 50% of the survey was incomplete. Possible reasons for the lack of completion may have been computer error, internet disruptions, time needed to complete the study, or other interruptions. The completion rate for this

study was approximately 84.89%. A total of 1506 participants completed over 50% of the survey. In order to focus on emerging adults, only participants who were between the ages of 18 and 25 were included in the study. There were 15 participants who did not provide their age, six participants who were under the age of 18, and 228 participants' between the ages of 26 and 71. The surveys from these individuals were removed from the study, totaling 249 (16.5%) cases removed.

Two validity checks were interspersed among the survey questions to ensure that participants were reading the questions. The questions asked participants to choose a particular answer (e.g., Choose neutral to ensure the validity of your responses) to ensure the validity of their responses. There were 349 (27.7%) participants removed from the 18 to 25 year old sample because they did not answer the validity questions correctly. It is believed that the final sample read each question before answering, thus providing a more valid dataset. For the 908 participants (41.3% male, 58.5% female, .1% transgender, and .1% missing), the mean age was 19.99 (*SD* = 1.97) years.

The majority of the 908 participants were Caucasian (*n* = 592; 65.2%) and current undergraduate students (*n* = 791; 87.1%). Yearly household income (including income for everyone living with the participant) varied, with approximately a third of the participants reporting $70,000 or more (*n* = 319; 35.1%). Three fourths of the sample (*n* = 687; 75.4%) reported living in the

Southwest. See Table 1 for additional information on the demographic characteristics of the participants.

Research Design

A survey research design was used to examine the study research questions and hypotheses. The first question, which asked about the characteristics of the trauma experiences of the participants, was examined through simple descriptive statistics. To test hypothesis one, participants were classified into four groups based on their responses to the assessment of their identity development: Diffused (n = 327); foreclosed (n = 220); moratorium (n = 262) and achieved (n = 99) identity statuses. To test hypothesis two, participants were grouped by gender: Male (n = 375) and female (n = 531). In addition, to test hypotheses three, participants were classified as having met criteria for PTSD (n = 242) or not (n = 666).

Procedure

After reading the informed consent on surveygizmo.com, an online survey program, participants completed the survey. Some teachers agreed to provide participants with extra credit if they completed the survey. A closing page thanking the participant was used by the student to provide evidence for their teachers that they completed the survey. Participants were also informed in the recruitment script that they could be entered in a gift card drawing by sending

Table 1

Demographic Characteristics of Participants (N = 908)

Characteristics	*n*	*%*
Gender		
Male	375	41.3
Female	531	58.5
Transgender	1	.1
Ethnicity		
African American	28	3.1
Asian American	53	5.8
Caucasian	592	65.2
Hispanic American	124	13.7
Native American or Alaskan Native	14	1.5
Other/Multi-Racial	94	10.4
Education		
< High School Diploma	1	.1
High school diploma	38	4.2
Associates Degree	36	4.0
Current Undergraduate Student	791	87.1
Bachelors Degree	18	2.0

(Table 1 continues)

(Table 1 continued)

Characteristics	*n*	*%*
Current Masters Student	7	.8
Masters Degree	1	.1
Yearly Household Income		
Under $9,999	141	15.5
$10,000 to $19,999	90	9.9
$20,000 to $29,999	74	8.1
$30,000 to $39,999	56	6.2
$40,000 to $49,999	75	8.3
$50,000 to $59,999	80	8.8
$60,000 to $60,999	61	6.7
$70,000 or more	319	35.1
Location		
Canada	3	.3
Malaysia	1	.1
Midwest	66	7.2
Northwest	70	7.5
Southeast	8	.8
Southwest	687	75.4
West	67	7.2

their email address to the primary researcher. Participants were informed that their email addresses would not be linked to the survey results at any time. The survey took approximately 15 to 20 minutes to complete.

Measurement

The survey contained self-report assessment measures of demographic information (Appendix D), experience of trauma, identity development, centrality of the trauma event, identity distress, and positive change.

Experience of Trauma. This construct is comprised of the variables of trauma exposure, trauma severity, time since the most recent trauma, and PTS symptoms. The Life Stressor Checklist-Revised (LSC-R; Wolfe & Kimerling, 1997; Appendix E) is a measure of lifetime exposure to stressful and traumatic events and encompasses both potentially traumatic and other seriously stressful life events. The questionnaire includes 30 traumatic experiences including natural disasters, physical or sexual assault, death of a relative, and other events. Although, the measure has a special focus on events that may be relevant to women (such as abortion), it can also be used with men. Questions are asked in a yes/no format in which respondents endorse whether they experienced the event, believed that they were in harm, and felt helplessness.

The LSC-R also assesses criterion A for the DSM-IV-TR diagnosis of PTSD by summing the respondent's answers to the questions “At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?” (criterion A1) and “At the time of the event(s) did you experience

feelings of intense helplessness, fear, or horror?" (criterion A2). If the respondents answer yes to both questions, the traumatic event they have endorsed meets criterion A of the diagnosis of PTSD (Norris & Hamblen, 2004).

In this study, some minor modifications were made to the original LSC-R. The online survey was created so that each traumatic event was presented to participants, and if they responded with a "no" response regarding whether they had experienced or witnessed the trauma, the survey would go to the next traumatic event. If respondents reported "yes" to experiencing the traumatic event, they were prompted to answer two questions for criteria A1 and A2 for the DSM-IV-TR diagnosis of PTSD and one question assessing trauma severity. Item 1 was split into two questions to differentiate between natural (e.g., Item 1: Have you ever been in a flood, hurricane, tornado, tsunami, or earthquake?) and accidental disasters (e.g., Item 2: Have you ever been in a fire or explosion?). Additionally, the questions related to age were changed from "How old were you when this happened?" to "How long ago did this happen?" in order to examine time since the most recent trauma rather than at which age the trauma occurred. These open ended questions were later categorized regarding the *most recent time since trauma* occurred (1 = "less than 30 days" to 4 = "more than 3 years").

Items asking very similar traumatic exposure questions were combined in the modified LSC-R measure used in this study including: Items 2 (Have you ever seen a serious accident, for example, a bad car wreck or an on-the-job accident?) and 3 (Have you ever had a very serious accident or accident-related injury, for

example a bad car wreck or an on-the-job accident?) reflected in the modified item 3 "Have you ever had a serious accident or accident-related injury for example, a bad car wreck, boating accident, train wreck, airplane crash, an on-the-job accident, accident at home or recreational activity?". Items 4 (Was a close family member ever sent to jail?) and 5 (Have you ever been sent to jail?) were combined and are reflected in item 4 "Have you or a close family member ever been sent to jail?". Items 7 (Did your parents ever separate or divorce while you were living with them) and 8 (Have you ever been separated or divorced?) were combined and are reflected in item 7 of the modified measure (Have you or your parents [while you were living with them] ever separated or divorced?). Finally, items 20 (Have you ever seen a robbery, mugging, or attack taking place?) and 21 (Have you ever been robbed, mugged, or physically attacked [not sexually] by someone you did not know?) were combined and are reflected in item 20: "Have you ever been robbed, mugged, or physically attacked (not sexually) by someone you did not know?", with response options of “Yes”, “No, but I have witnessed this”, and “No”.

Limitations to the LSC-R, as determined by research literature reviewed for methodology of measuring trauma, is that it does not encompass other forms of witnessing the trauma or measure how many times the trauma happened. The questions ask if participants have experienced the event but do not ask if they witnessed the event in another way. Additionally, there are several traumatic experiences and highly stressful events that are not items on the LSC-R.

Incorporating another measure with these strengths and modifying the LSC-R slightly could avoid these limitations.

To assess potentially traumatic experiences more thoroughly among the participants in this study, some of the questions in The Life Events Checklist (LEC; Gray, Litz, Hsu, & Lombardo, 2004; See Appendix F) were incorporated in the modified LSC-R to examine exposure to potentially traumatic events. A distinguishable feature of the LEC is its measure of multiple types of exposures in which participants are asked if they witnessed the trauma. For example, witnessing a violent assault or tragic motor vehicle accident may be quite traumatic. The question "have you ever witnessed this?" was added to the modified LSC-R measure in this study for each traumatic event, when applicable (items 1-5, 14, 20-24, 27, 28, and 32). Questions from the LEC were added to the modified LSC-R that ask about traumatic exposure to: Toxic substances (item 5), assault with a weapon (item 21), combat or a war-zone (item 22), held captive (item 23), and fired or unemployed for a long time (item 26).

The modified LSC-R is scored by giving one point to each positively endorsed stressor and adding up the endorsements to create an overall *trauma exposure* score for each participant. Combined scores for the direct and indirect exposures could range from 0 to 45 with higher scores reflecting more trauma exposure. *Trauma severity* was assessed by asking, "How much has this affected your life in the past year?" for the 32 traumatic stressor items. Responses for positively endorsed trauma exposures were rated on a 5-point intensity scale (1 =

"not at all" to 5 = "extremely") and were summed to create a total trauma severity score with a possible range of 0 to 160. Higher scores are reflective of more subjective ratings of severity for the traumas endorsed (Wolfe & Kimerling, 1997).

Because traumatic event exposure is not a unidimensional construct, internal consistency is not a necessary property of these types of measures, and analysis of internal consistency of such measures is inappropriate and potentially misleading (Netland, 2001). Internal consistency (e.g., Cronbach's alpha) is not applicable for traumatic event measures because the experience of one event does not necessarily imply the experience of another (Norris & Hamblen, 2004). The LSC-R without the proposed modifications has demonstrated good test-retest reliability and good criterion-related validity with diverse populations (Brown, Stout, & Mueller, 1999; Kimerling et al., 1999). The item test-retest reliability has ranged from .52 to .95 (McHugo et al., 2005).

Current posttraumatic stress (PTS) symptomatology was assessed by the Posttraumatic Stress Disorder Checklist-Civilian Version (PCL-C; Weathers, Litz, Huska, & Keane, 1994; Appendix G), a 17-item self-report measure. The PCL-C is one of three versions of the PCL (civilian, specific, and military). For the PCL-C, the questions are worded generically to refer to "stressful experiences in the past." Thus, the symptoms endorsed are not specific to just one event, which is appropriate for assessing survivors who may have symptoms due to multiple events. A 5-point Likert-type scale ranging from 1 ("not at all") to 5

("extremely") allows respondents to rate the degree to which they were distressed over the previous month by the symptom indicated in each item. Questions include items such as, "Repeated, disturbing memories, thoughts, or images of a stressful experience from the past?" and "Feeling jumpy or easily startled?" A continuous severity score of *PTS symptoms*, ranging from 17 to 85 with higher scores reflecting greater severity of PTS symptoms is obtained by summing responses across the measure items. Additionally, a total score of 44 is considered to be *PTSD* positive for the general population and was calculated for the participants in this study. The PCL has demonstrated excellent psychometric properties with internal consistency Cronbach's alpha of .97. Test-retest reliability was reported as .96 (Weathers et al., 1993). In this study, the Cronbach's alpha was .93.

Identity Development. This construct was comprised of identity exploration and identity commitment, as measured by the 32-item Ego Identity Process Questionnaire (EIPQ; Balistreri, Busch-Rossnagel, & Geisinger, 1995; Appendix H). Participants were asked to rate their responses to each item as strongly disagree, disagree, neutral, agree, or strongly agree. Sample items are "My beliefs about dating are firmly held" and "The extent to which I value my family is likely to change in the future". Two subscales are included in the EIPQ, *identity exploration* and *identity commitment*. Cronbach's alpha for the exploration subscale has been reported to be .86 with test-retest reliability of .76. For the commitment subscale the Cronbach's alpha was .80 and the test-retest

reliability was .90 (Balistreri et al., 1995). In this study, the Cronbach's alphas were .71 for the exploration subscale and .67 for the commitment subscale.

The questionnaire creators used median splits on the two subscales to assign one of four identity statuses to the participants (Balistreri et al., 1995). Each question is answered on a scale of 1 to 5, thus a cut off score of 3.5 is used to classify individuals who report having explored or committed to their identity. This method may have slightly superior predictive utility for differences on psychological adjustment variables (Lee & MacLean, 2006). As was previously used by Berman et al., (2009), participants who score low on exploration and commitment are classified as *diffused*, those low in exploration but high in commitment are classified as *foreclosed*, high scores in exploration but low in commitment are classified as *moratorium*, and those high in both exploration and commitment are classified as *achieved*.

Centrality of the Trauma Event. The Centrality of Events Scale (CES; Berntsen & Rubin, 2006; Appendix I) measures how central a traumatic stressor is to a person's identity and life story. The authors shortened the measure from the original 20-item scale to a 7-item scale that covers the range of key theoretical properties of the CES including the trauma memory becoming a reference point for everyday inferences, a turning point in the life story, and a central component of personal identity. Participants were asked to think about the most stressful or traumatic event in their life and answer questions using a 5 point Likert-type response scale ranging from "1 = totally disagree" to "5 = totally agree".

Questions include items such as “I feel that this event has become part of my identity” and “ I feel that this event has become a central part of my life story.” A total *centrality of the trauma event* score is developed by summing the responses resulting in a range of scores from 7 to 35 with higher scores reflecting greater centrality of the event to one’s identity. The measure has reliable internal consistencies of .88 (Berntsen & Rubin, 2006). The measures Cronbach alpha for this study was .88.

Identity Distress. The Identity Distress Survey (IDS; Berman, Montgomery, & Kurtines, 2004; Appendix J) is a 10-item brief self-report questionnaire that measures distress associated with unresolved identity issues. Items such as, “To what degree have you recently been upset, distressed, or worried over the following issues in your life” are rated on a scale from 1 (Not at all) to 5 (Very severely). These issues are long-term goals, career choice, friendships, sexual orientation and behavior, religion, values and beliefs, and group loyalties. There are three additional items regarding an overall rating of the participant’s level of discomfort about the seven areas, how much uncertainty they have regarding these issues as a whole, how they have interfered with their life, and how long they have felt distressed. Total *identity distress* scores are averaged, with a possible range from 1 to 5 with high scores indicating more identity distress. Internal consistency has been reported as .84 with test-retest reliability of .82 (Berman et al., 2004). The Cronbach's alpha for this study was .86.

Positive Change. This construct was comprised of two variables: Resilience and posttraumatic growth (PTG). The Connor-Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003; Appendix K) is a 25-item, self-rated measure of respondent's ability to adapt well and overcome adversity. The items were designed to reflect content related to well established sources and theories of resilience including Kobasa's work on hardiness (1979), Rutter's (1985) work on action orientation, limits to control, engaging support of others, secure attachments, personal or collective goals, self-efficacy, strengthening effect of stress, realistic sense of control/having choices, sense of humor, adaptability to change, and past success, and Lyons (1991) work on patience and tolerance of negative affect. This scale was validated with samples of the general population, primary care outpatients, psychiatric outpatients, patients with generalized anxiety disorder, and patients with PTSD. In response to items such as "Coping with stress strengthens me" and "I am able to adapt to change," participants rated each item on a five-point Likert-type scale ranging from "0 = not true at all" to "4 = true nearly all of the time." Total scores range from 0 to 100, with higher scores indicating greater *resilience*. Internal consistency has been found to be .89 with test-retest reliability of .87 (Connor & Davidson, 2003). In this study, the Cronbach's alpha was .92.

The Posttraumatic Growth Inventory (PTGI-SF; Cann et al., 2010; Appendix L) measures significant positive changes and growth that occurs after the experience of highly challenging life circumstances. The original inventory

(Tedeschi & Calhoun, 1996) was shortened from 21-items to 10 items. A 6-point Likert-type scale ranging from 0 (no change) to 5 (great change) is used for items such as "I have a greater appreciation for the values of my own life" and "I discovered that I'm stronger than I thought I was". Responses to all items are summed to produce a total score ranging from 0 to 50, with higher scores indicating greater levels of *PTG*. This brief inventory has internal reliability that is only slightly lower than the full PTGI ($\alpha = .90$) across samples of bereaved parents, intimate partner violence victims, and acute leukemia patients. In this study, the Cronbach's alpha was .92.

Chapter 3

RESULTS

Preliminary Analyses

Based on a power analysis for MANOVA: Global effects with a medium effect size of .25, alpha set at .05, and a power of .95 with 4 groups and 6 response variables, approximately 48 participants were needed. A second power analysis for linear multiple regressions with a medium effect size of .25, alpha set at .05, and a power of .95 with 8 predictors and 5 tested predictions, indicated the need for a total sample size of 86. Based on these preliminary analyses, it is believed that approximately 134 participants were needed for the analyses in this study. Therefore, this study had sufficient power for the analyses conducted.

Data management and analyses were conducted using PASW/SPSS, version 20 software (IBM SPSS Inc., 2011). Prior to testing the study hypotheses, examination of missing data was conducted. Of the 908 participants, there were 201 participants (4.5%) who were missing at least one item on the measures in this study. Multiple tests of analysis of variance (ANOVA) indicated that there were no significant differences for participants with missing data compared to participants without missing data, suggesting that the data were either "missing completely at random" or a "not missing at random pattern" (Schlomer, Bauman, & Card, 2010). As suggested by Schafer and Graham (2002), when missing data are minimal, it is unlikely that the data will be biased. Therefore, when missing data did not exceed 20% of items on a subscale and were determined to be

missing completely at random through examination by individual and question, mean imputation procedures were used for each measure with the exception of the modified LSC-R, traumatic exposure checklist.

Research Question 1: Descriptive Statistics

The initial research question asked about the characteristics of the experience of trauma for this sample. The direct and indirect trauma exposures for each trauma were examined. Direct exposures ranged from zero to 18 exposures, and the indirect exposures, ranged from zero to eight (See Table 2 for means and standard deviations).

The most frequent traumas directly experienced by this sample were: A known death of someone close (*n* = 481, 53.0%); sudden or unexpected death of a close individual (*n* = 338, 37.2%); serious accident or accident-related injury (*n* = 314, 34.6%); separation or divorce (*n* = 302, 33.3%); and natural disasters (*n* = 294, 32.4%). The least common traumas reported for direct exposure included: Separation from a child (*n* = 1, .1%); being held captive (*n* = 7, .8%), war-zone combat (*n* = 14, 1.5%), foster care or adoption (*n* = 15, 1.7%), and physical neglect (*n* = 21, 2.3%).

For indirect trauma exposure, the most frequent experiences were: Other indirect exposures (*n* = 285, 31.4%); fire or explosion (*n* = 133, 14.6%); serious accident or injury (*n* = 115, 12.7%); and natural disasters (*n* = 91, 10.0%). Least frequent indirect trauma exposures included: Separation from a child (*n* = 0);

Table 2

Descriptive Information of Trauma Variables from the modified LSC-R

Variables	*Psychometrics*		
	Range	*M*	*SD*
Direct Trauma Exposures	0-18	4.32	2.87
Indirect Trauma Exposures	0-8	.92	.99
Total Trauma Exposures	0-19	5.25	3.26
Severity of Trauma	0-78	14.29	11.34
Most Recent Time Since Trauma	*N*		*%*
< 30 Days	146		16.1
1-6 Months	266		29.3
7-11 Months	39		4.3
1-3 Years	321		35.4
> 3 Years	106		11.7

being fired/unemployed (*n* = 1, .1%); foster care or adoption (*n* = 2, .2%); physical neglect (*n* = 3, .3%); and child physical/mental handicap (*n* = 3, .3%).

The traumas with the highest percentage of criterion A endorsements for PTSD diagnosis included serious accident or accident-related injury (*n* =245, 27.0%), violence between family members (*n* = 125, 13.8%), other reported indirect traumatic events (*n* = 122, 13.4%), sudden or unexpected death of a close individual (*n* = 103, 11.3%), and natural disasters (*n* = 102, 11.2%). There were 242 (26.7%) participants who met criteria for PTSD using the PCL-C cut-off

score of 44 (Weathers et al., 1993). Table 3 presents descriptive statistics for trauma exposure items.

Research Question 2: Group Differences

Research question two asked whether there were differences among identity status groups, between genders, and PTSD diagnostic status in identity distress, centrality of the trauma event, PTS symptoms, positive change, and identity development. Based on the participants' responses to the EIPQ (Balistreri et al., 1995), they were classified into one of four categories. This identity status classification procedure resulted in 36.0% (n = 327) being placed in the diffused status, 28.9% (n = 262) in the moratorium status, 24.2% (n = 220) in the foreclosed status, and 10.9% (n = 99) in the achieved status. Multivariate analysis of variance (MANOVA) was used to examine the hypothesized group differences, which predicted that participants in the diffused and moratorium identity statuses would report more identity distress, centrality of the trauma event, and PTS symptoms, and less resilience and PTG than would participants in the foreclosed and achieved identity status groups (H1). Univariate analyses of variances (ANOVA) were examined when the MANOVA was significant. A Bonferroni correction (.05 divided by the number of ANOVAs conducted = .01 alpha level) was used to control for Type I error rate across the multiple ANOVAs. To investigate significant ANOVA results, Bonferroni multiple comparisons were conducted.

Table 3

Percentage of LSC-R Trauma Exposures and Participants Meeting Criterion A for PTSD

Trauma	*n*	*% direct*	*n*	*% indirect*	*n*	*% Criterion A*
1. Natural Disaster	294	32.4	91	10.0	102	11.2
2. Fire or Explosion	43	4.7	133	14.6	69	7.6
3. Accident	314	34.6	115	12.7	245	27.0
4. Jail	220	24.2	18	2.0	25	2.8
5. Toxic Substances	61	6.7	5	.6	13	1.4
6. Foster Care/Adoption	15	1.7	-	-	2	.2
7. Separation/Divorce	302	33.3	-	-	17	1.9
8. Money Problems	126	13.9	-	-	15	1.7
9. Physical/Mental Illness	142	15.6	-	-	96	10.6
10. Emotional Abuse/Neglect	203	22.4	-	-	50	5.5
11. Physical Neglect	21	2.3	-	-	3	.3
12. Physical Abuse < age 16	126	13.9	-	-	54	5.9
13. Physical Abuse > age 16	93	10.2	-	-	36	4.0
14. Sexual harassment	173	19.1	53	5.8	10	1.1
15. Sexual Touch < age 16	66	7.3	-	-	24	2.6
16. Sexual Abuse < age 16	41	4.5	-	-	12	1.3
17. Sexual Touch > age 16	48	5.3	-	-	17	1.1
18. Sexual Abuse > age 16	37	4.1	-	-	10	1.9
19. Family Violence	264	29.1	-	-	125	13.8

Note. - = not assessed

(Table 3 continues)

(Table 3 continued)

Trauma	*n*	*% direct*	*n*	*% indirect*	*n*	*% Criterion A*
20. Robbed/Mugged/Attacked	100	11.0	27	3.0	50	5.5
21. Assault with a Weapon	44	4.8	27	1.3	35	3.9
22. War-zone Combat	14	1.5	12	.7	12	1.3
23. Held Captive	7	37.2	6	.3	8	.9
24. Sudden/Unexpected Death	338	53.0	3	4.2	103	11.3
25. Known Death	481	10.8	38	-	47	5.2
26. Fired/Unemployed	98	4.3	-	-	1	.1
27. Abortion/Miscarriage	39	.1	46	5.1	15	1.7
28. Separation from a child	1	6.4	8	.9	0	0
29. Child Phy/Ment. Handicap	58	8.6	-	-	3	.3
30. Caretaker of Disabled Adult	78	8.8	-	-	7	.8
31. Other Event	80	-	-	-	35	3.9
32. Other Indirect	-	-	285	31.4	122	13.4

Note. - = not assessed

The identity status groups differed on the linear combination of these variables, Wilks's $\Lambda = .78$, $F(15, 890) = 16.03$, $p < .001$, $\eta^2 = .08$. Examination of the ANOVAs using the Bonferroni procedure corrected probability level of .01 revealed differences for identity distress [$F(3, 892) = 29.16$, $p < .001$], centrality of the trauma event [$F(3, 892) = 10.00$, $p < .001$], PTS symptoms [$F(3, 892) = 16.72$, $p < .001$], resilience [$F(3, 892) = 46.75$, $p < .001$], and PTG [$F(3, 892) = 12.92$, $p < .001$]. Multiple comparisons examining the specific hypothesized group differences indicated that for identity distress those participants in the

moratorium identity status group reported more identity distress than did those in the foreclosed and achieved groups. Participants in the diffused group reported more identity distress than participants in the foreclosed group, but not the achieved group (see descriptive statistics in Table 4). When centrality of the trauma event served as the dependent variable, participants in the diffused group reported less centrality than did those in the achieved group, but not those in the foreclosed group. In contrast, those in the moratorium group reported more centrality than did those in the foreclosed group but not those in the achieved group (See Table 4). When PTS was the outcome variable, participants in the diffused and moratorium statuses reported more symptoms than those in the foreclosed status, but not for those in the achieved status. As hypothesized, those in the achieved group reported more resilience than those in the diffused and moratorium groups. Additionally, those in the foreclosed group reported more resilience than those in the moratorium and diffused groups (See Table 4). Examination of the multiple comparisons for PTG indicated that participants who were in the achieved group reported more PTG than did those in the diffused group but not those in the moratorium group. Participants in the foreclosed identity status group reported less PTG than those in the moratorium group but not those in the diffused group (See Table 4). Based on these results, hypothesis one was partially supported.

Table 4

Means and Standard Deviations for Identity Status Differences

Variables	*Diffused*		*Foreclosed*		*Moratorium*		*Achieved*	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Identity distress	2.25	.67	1.95	.64	2.55	.77	2.23	.74
Centrality	22.50	6.60	22.70	6.75	25.10	5.72	24.58	6.80
PTS symptoms	34.16	13.07	29.87	12.14	38.48	15.17	37.65	16.28
Resilience	67.96	13.77	79.19	11.13	70.08	13.56	80.14	12.39
PTG	18.99	12.10	19.90	13.51	23.44	11.59	26.72	14.93

Hypothesis two which posited that female participants would report greater centrality of the trauma event, more identity distress, more PTS symptoms, more PTG, and less resilience than male participants, was tested with a one-way MANOVA. The transgendered participant was removed from this analysis. The male and female gender groups differed on the linear combination of these variables, Wilks's $\Lambda = .94$, $F(5, 889) = 11.60$, $p < .001$, $\eta^2 = .06$. Examination of the ANOVAs, using the Bonferroni corrected probability level of .01, revealed significant group differences for PTS symptoms [$F(1, 893) = 33.04$, $p < .001$], centrality of the trauma event [$F(1, 893) = 32.57$, $p < .001$], and PTG [$F(1, 893) = 23.67$, $p = .01$]. Examination of the group means revealed that female participants reported more PTS symptoms, more centrality of the trauma event, and more PTG than males. However, significant gender differences were

not found for identity distress and resilience (See Table 5 for the descriptive statistics for the two gender groups).

Table 5

Means and Standard Deviations for Gender Differences

Variables	*Female*		*Male*	
	M	*SD*	*M*	*SD*
Identity Distress	2.31	.71	2.20	.76
PTS symptoms	37.02	14.76	31.56	12.82
Centrality	24.53	6.32	22.05	6.56
PTG	23.21	13.40	18.91	12.42
Resilience	71.80	14.11	73.75	13.63

Hypothesis three predicted that participants who met criteria for PTSD diagnosis would report greater centrality of the trauma event, more identity exploration, more identity distress, more PTG, and less resilience and identity commitment than participants who did not meet criteria for PTSD diagnosis. The PTSD groups differed on the linear combination of these variables, Wilks's Λ = .76, $F(6, 889) = 46.99$, $p < .001$, $\eta^2 = .24$. Examination of the ANOVAs, using the corrected Bonferroni probability level of .008, revealed significant group differences for centrality of the trauma event [$F(1, 894) = 111.41$, $p < .001$], identity exploration [$F(1, 894) = 41.07$, $p < .001$], identity distress [$F(1, 894) = 146.80$, $p < .001$], resilience [$F(1, 894) = 36.42$, $p < .001$], identity commitment [$F(1, 894) = 21.13$, $p < .001$], and PTG [$F(1, 894) = 76.55$, $p < .001$].

Investigation of the group means revealed that participants who met criteria for PTSD diagnosis reported greater centrality of the trauma event, more identity exploration, more identity distress, more PTG, less resilience and less identity commitment (See Table 6 for the means and standard deviations for PTSD group differences).

Table 6

Means and Standard Deviations for PTSD Group Differences

Independent Variables	*PTSD*		*No PTSD*	
	M	*SD*	*M*	*SD*
Centrality	27.11	5.74	22.21	6.29
Id. Exp.	56.29	7.62	52.76	7.18
Identity distress	2.72	.75	2.10	.65
PTG	27.32	11.08	19.14	12.83
Resilience	68.05	15.39	74.27	12.97
Id Com.	51.08	7.40	53.51	6.83

Research Question 3: Polynomial Regressions

The third research question examined the relations among trauma exposure, trauma severity, and positive change. Hypothesis four predicted inverted U-shaped relationships between trauma exposure and PTG, between trauma severity and PTG, between trauma exposure and resilience, and between trauma severity and resilience. Linear, quadratic, and cubic effects were examined through polynomial regressions. In order to alleviate multicollinearity,

the predictors were centered around the mean by subtracting the mean from each participant's total score.

Two hierarchical regression analyses were conducted to examine whether there were linear (step one), quadratic (step two), and/or cubic relationships (step three) between trauma severity and resilience and between trauma severity and PTG. The quadratic and cubic relationships were not significant for *trauma severity and resilience*. Examination of the relationships between *trauma severity and PTG*, however, revealed a significant linear model, $R^2 = .10$, $F(1, 897) = 101.23$, $p < .001$. The quadratic model was a statistically significant improvement over the linear model, [$\Delta R^2 = .006$, $\Delta F(1, 895) = 6.14$, $p = .01$], partially supporting hypothesis four. A cubic model was not supported, $\Delta R^2 = .002$, $\Delta F(1, 894) = 1.54$, $p = .21$. The coefficient for the linear component, [$b_1 = .44$, $s_{b1} = .05$, $t(896) = 9.20$, $p < .001$], indicated that an increase in trauma severity is related to an increase in PTG. The coefficient for the quadratic component, [$b_2 = -.004$, , $s_{b2} = .002$, $t(895) = -2.45$, $p = .01$], indicated that an increase in trauma severity corresponds to decreases in the simple slope. Eventually, increases in trauma severity correspond to decreases in PTG after the trauma severity has reached a moderately high level. The scatterplot in Figure 1 suggests this change begins to occur after a trauma severity level of about 40 out of 78.

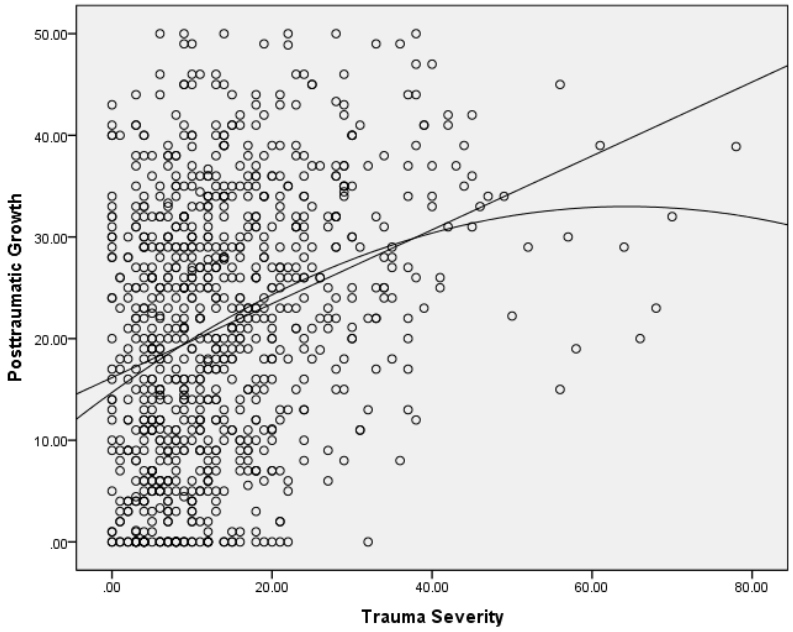

Figure 1. Scatterplot for linear and quadratic relationships between trauma severity and posttraumatic growth.

Next, two hierarchical regression analyses were conducted to examine the possible linear (step one), quadratic (step two), and cubic (step three) relationships between trauma exposure and resilience and between trauma exposure and PTG. The quadratic and cubic relationships were not significant for *trauma exposure and resilience.* Examination of the relationships between *trauma exposure and PTG* revealed a significant linear model, $R^2 = .06$, $F(1, 897) = 57.98$, $p < .001$, while the quadratic model was not significant [$\Delta R^2 < .001$, $\Delta F(1, 895) = .32$, $p = .57$]. However, a cubic model was supported, [$\Delta R^2 = .006$, $\Delta F(1, 894) = 5.82$, $p = .02$], above and beyond the linear model. The coefficient for the linear component, [$b_1 = .1.25$, $s_{b1} = .32$, $t(896) = 6.99$, $p < .001$], indicated that an increase in trauma exposure is related to an increase in PTG. The coefficient for the cubic component, [$b_3 = -.01$, $s_{b2} = .005$, $t(894) = -2.41$, $p = .02$],

indicated that an increase in trauma exposure corresponds to increases and decreases in the simple slope for PTG. When trauma exposure is around a moderate level, PTG is the highest; however, when trauma exposure reaches approximately 10 exposures, the reported PTG decreases (See Figure 2).

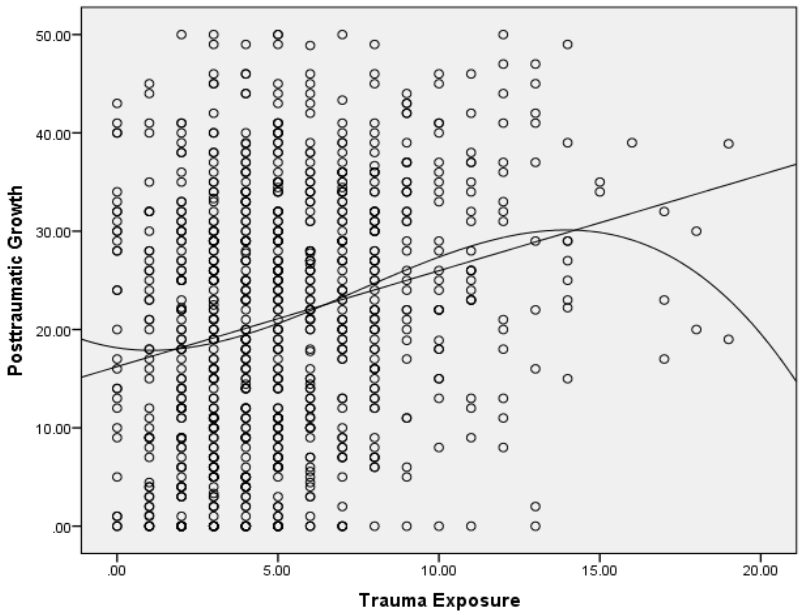

Figure 2. Linear and cubic relationships of trauma exposure and PTG.

Research Question 4: Relationships among Trauma and Identity

Question four examined whether the experience of trauma, the centrality of the trauma event, identity development, identity distress, and positive change were interrelated (See Table 7 for the means, standard deviations, and correlations among these variables).

Predicting Identity Distress. To examine hypothesis five that posited the centrality of the trauma event would predict identity distress above and beyond the experience of trauma, a hierarchical multiple regression analysis was calculated. The experience of trauma (trauma exposure, trauma severity, PTS

Table 7

Means (M), Standard Deviations (SD), and Correlations for the Study Variables

Variables	*M*	*SD*	1	2	3	4	5	6	7	8	9	10
1 Id Exp	53.73	7.46	-									
2 Id Comm	52.88	7.10	**-.32**[3]	-								
3 Id Dist	2.26	.73	**.29**[3]	**-.34**[3]	-							
4 Tr Exp	5.25	3.26	**.32**[3]	**-.07**[1]	**.17**[3]	-						
5 Time	1.97	1.35	**-.11**[3]	-.03	**-.13**[2]	**-.36**[3]	-					
6 Tra Sev	14.29	11.34	**.31**[3]	-.05	**.24**[3]	**.91**[3]	**-.35**[3]	-				
7 Centrality	23.52	6.53	**.22**[3]	**-.09**[2]	**.26**[3]	**.32**[3]	**-.16**[3]	**.41**[3]	-			
8 PTS	34.71	14.21	**.22**[3]	**-.18**[3]	**.46**[3]	**.36**[3]	**-.24**[3]	**.46**[3]	**.43**[3]	-		
9 PTG	21.33	12.89	**.23**[3]	.03	**.23**[3]	**.25**[3]	**-.15**[3]	**.32**[3]	**.33**[3]	**.35**[3]	-	
10 Resilience	72.66	13.92	.01	**.41**[3]	**-.31**[3]	.03	.01	-.02	-.06	**-.24**[3]	**.19**[3]	-

Note. **[1] = p < .05 [2] = p < .01 [3] = p < .001**.

symptoms, and time since the most recent trauma) (step one) and the centrality of the event (step two) were predictors of identity distress. The full model was significant [$F(5, 868) = 49.11$, $p < .001$]. The cluster of predictors entered in step one (Model 1) was significant, $R^2 = .22$ and adjusted $R^2 = .21$, $F(4, 869) = 60.07$, $p < .001$, with significant standardized beta coefficients for trauma severity ($\beta = .14$, $t = 1.94$, $p = .05$) and for PTS symptoms ($\beta = .43$, $t = 12.35$, $p < .001$). The contribution of the centrality of the trauma event to one's identity above and beyond the experience of trauma (Model 2) was statistically significant, [$\Delta R^2 = .004$, $\Delta F(1, 868) = 4.34$, $p = .04$] with the standardized beta coefficients for PTS symptoms ($\beta = .40$, $t = 11.25$, $p < .001$) and for centrality of the trauma event ($\beta = .07$, $t = 2.08$, $p = .04$) reaching significance. Trauma severity was no longer a significant predictor of identity distress in model two (See Table 8).

Predicting Identity Development. To examine hypothesis six, that identity distress and the centrality of the trauma event would predict identity development above and beyond the experience of trauma, two hierarchical regression analyses were calculated, the first with identity exploration as the dependent variable and the second with identity commitment as the dependent variable. When trauma exposure, trauma severity, PTS symptoms (Model one), the centrality of the trauma event, and identity distress (Model two) were entered in the regression to predict identity exploration, the full model was significant, $R^2 = .16$ and adjusted $R^2 = .15$, $F(6, 867) = 27.24$, $p < .001$. For model one,

Table 8

Summary of Regression Analysis Predicting Identity Distress

	R^2	ΔR^2	β	*t*	*p*
Model 1	.22**	.21**			
Trauma Exposure			-.09	-1.30	.19
Trauma Severity			.14	1.94	.05
PTS Symptoms			.43	12.35	.001
Time			-.005	-.14	.89
Model 2	.22**	.004*			
Trauma Exposure			-.08	-1.10	.27
Trauma Severity			.11	1.48	.14
PTS Symptoms			.40	11.25	.001
Time			-.005	-.15	.88
Centrality			.07	2.08	.04

Note. F for model and change for step: * $p < .05$ ** $p < .001$.

significant standardized beta coefficients were found for trauma exposure (β = .22, $t = 2.98$, $p = .003$) and PTS symptoms (β = .13, $t = 3.67$, $p < .001$). The contribution of identity distress and the centrality of the trauma event above and beyond the experience of trauma variables was statistically significant at model two [$\Delta R^2 = .05$, $\Delta F(2, 867) = 24.28$, $p < .001$], with significant standardized beta coefficients for trauma exposure (β = .26, $t = 3.52$, $p < .001$), centrality of the trauma events (β = .07, $t = 1.95$, $p < .05$) and identity distress (β = .23, $t = 6.54$, *p*

< .001). PTS symptoms were no longer a significant predictor of identity exploration in model two (See Table 9 for the regression summary).

Table 9

Summary of Regression Analysis Predicting Identity Exploration

	R^2	ΔR^2	β	*t*	*p*
Model 1	.11**	.11**			
Trauma Exposure			.22	2.98	.003
Trauma Severity			.05	.60	.55
PTS Symptoms			.13	3.67	.001
Time			.02	.60	.55
Model 2	.16**	.05**			
Trauma Exposure			.26	3.52	.001
Trauma Severity			-.02	-.21	.83
PTS Symptoms			.02	.39	.70
Time			.02	.65	.52
Centrality Identity			.07	1.95	.05
Distress			.23	6.54	.001

Note. F for model and change for step: ** $p < .001$.

The above model was repeated with identity commitment as the dependent variable. This model was again significant, R^2 and adjusted $R^2 = .13$, F (6, 867) = 21.90, $p < .001$. For model one, significant standardized beta coefficients were found for trauma exposure (β = -.19, t = -2.48, p = .01), trauma severity (β = .19, t = -2.44, p = .01), PTS symptoms (β = -.23, t = 6.10, $p < .001$), and time since the

most recent trauma (β = -.09, t = -2.53, p = .01). The contribution of the centrality of the trauma event and identity distress above and beyond the trauma exposure variables was statistically significant for model two, ΔR^2 = .08, ΔF(2, 867) = 41.14, p < .001. Standardized beta coefficients were significant for model two for trauma exposure (β = -.22, t = -3.00, p = .003), trauma severity (β = .24, t= 3.11, p = .002), PTS symptoms (β = -.09, t = -2.26, p = .02), time since the most recent trauma (β = -.09, t = -2.68, p = .007), and identity distress (β = -.32, t = -9.03, p < .001). See Table 10 below for a summary of the regression analysis.

Predicting Positive Change. Hypothesis seven posited that identity development, identity distress, centrality of the trauma events, and the experience of trauma would predict positive change. To test this hypothesis, two hierarchical regressions were examined. Identity exploration and identity commitment were added as step three to the above multiple regression, with resilience as the dependent variable. The overall model was significant, R^2 and adjusted R^2 = .25, F (8, 861) = 36.58, p < .001. For model one, significant standardized beta coefficients were found for trauma exposure (β = .15, t = 1.99, p = .05) and PTS symptoms (β = -.30, t = -7.91, p < .001). The contribution of the centrality of the trauma event and identity distress above and beyond the trauma variables was significant for model two [ΔR^2 = .05, ΔF(2, 863) = 24.34, p < .001], with significant standardized beta coefficients for PTS symptoms (β = -.20, t = -4.84, p < .001) and identity distress (β = -.25, t = 6.97, p < .001). At model three identity

Table 10

Summary of Regression Analysis Predicting Identity Commitment

	Model R^2	ΔR^2	β	*t*	*p*
Model 1	.05**	.05**			
Trauma Exposure			-.19	-2.48	.01
Trauma Severity			.19	2.44	.01
PTS Symptoms			-.23	6.10	.001
Time			-.09	-2.53	.01
Model 2	.13**	.08**			
Trauma Exposure			-.22	-3.00	.003
Trauma Severity			.24	3.11	.002
PTS Symptoms			-.09	-2.26	.02
Time			-.09	-2.68	.007
Centrality Identity			-.006	-.17	.86
Distress			-.32	-9.03	.001

Note. *F* for model and change for step: ** $p < .001$.

exploration and identity commitment significantly predicted resilience above and beyond the trauma and other identity variables [$\Delta R^2 = .13$, $\Delta F(2, 861) = 72.67$, $p < .001$], with significant standardized beta coefficients for trauma exposure (β = .17, $t = 2.49$, $p = .01$), PTS symptoms (β = -.17, $t = -4.37$, $p < .001$), identity distress (β = -.17, $t = -4.78$, $p < .001$), identity exploration (β = .18, $t = 5.42$, $p < .001$), and identity commitment (β = .38, $t = 11.76$, $p < .001$) (See Table 11 for the summary of the regression analysis predicting resilience).

Table 11

Summary of Regression Analysis Predicting Resilience

	Model R^2	ΔR^2	β	*t*	*p*
Model 1	.08**	.08**			
Trauma Exposure			.15	1.99	.05
Trauma Severity			-.02	-.30	.76
PTS Symptoms			-.30	-7.91	.001
Time since Trauma			-.02	-.45	.66
Model 2	.13**	.05**			
Trauma Exposure			.13	1.80	.07
Trauma Severity			-.002	-.03	.97
PTS Symptoms			-.20	-4.84	.001
Time since Trauma			-.02	-.49	.62
Centrality of Events			.03	.91	.36
Identity Distress			-.25	6.97	.001
Model 3	.25**	.13**			
Trauma Exposure			.17	2.49	.01
Trauma Severity			-.09	-1.26	.21
PTS Symptoms			-.17	-4.37	.001
Time since Trauma			.01	.46	.65
Centrality of Events			.02	.69	.50
Identity Distress			-.17	-4.78	.001
Identity Exploration			.18	5.42	.001
Identity Commitment			.38	11.76	.001

Note. F for model and change for step: * $p < .01$ ** $p < .001$.

A second hierarchical regression analysis was examined to determine whether identity development, identity distress, centrality of the trauma events, and the experience of trauma would predict PTG. The cubic term for trauma exposure, the quadratic term for trauma severity, PTS symptoms, and time since the most recent trauma variables (step one), centrality of the trauma event and identity distress (step two), and identity exploration and identity commitment (step three) were entered in the regression, with PTG as the dependent variable. The overall model was significant, $R^2 = .22$ and adjusted $R^2 = .21$, F (8, 859) = 29.76, $p < .001$. For model one [F (4, 863) = 33.54, $p < .001$] significant standardized beta coefficients were found for PTS symptoms ($\beta = .32$, $t = 9.58$, $p < .001$) and time since the most recent trauma ($\beta = -.07$, $t = -2.13$, $p = .03$). For model two [$\Delta R^2 = .18$, $\Delta F(2, 861) = 25.27$, $p < .001$] with significant standardized beta coefficients for PTS symptoms ($\beta = .20$, $t = 5.26$, $p < .001$) and the centrality of the trauma event ($\beta = .23$, $t = 6.69$, $p < .001$). The third model predicted PTG above and beyond the trauma and other identity variables [$\Delta R^2 = .03$, $\Delta F(2, 859) = 18.93$, $p < .001$], with significant standardized beta coefficients for PTS symptoms ($\beta = .21$, $t = 5.47$, $p < .001$), centrality of the trauma event ($\beta = .21$, $t = 6.23$, $p < .001$), identity distress ($\beta = .08$, $t = 2.18$, $p = .03$), identity exploration ($\beta = .16$, $t = 4.74$, $p < .001$), and identity commitment ($\beta = .16$, $t = 4.03$, $p < .001$) (See Table 12 for the summary of the regression analysis predicting posttraumatic growth).

Table 12

Summary of Regression Analysis Predicting Posttraumatic Growth

	R^2	ΔR^2	β	*t*	*p*
Model 1	.13**	.13**			
Trauma Exposure			-.05	-.87	.39
Trauma Severity			.10	1.69	.09
PTS Symptoms			.33	9.58	.001
Time since Trauma			-.07	-2.13	.03
Model 2	.18**	.05**			
Trauma Exposure			-.06	-1.05	.29
Trauma Severity			.09	1.61	.11
PTS Symptoms			.20	5.26	.001
Time since Trauma			-.06	-1.84	.07
Centrality of Events			.46	6.69	.001
Identity Distress			.06	1.77	.08
Model 3	.22**	.03**			
Trauma Exposure			-.07	-1.17	.24
Trauma Severity			.08	1.41	.16
PTS Symptoms			.21	5.47	.001
Time since Trauma			-.04	-1.21	.30
Centrality of Events			.21	6.23	.001
Identity Distress			.08	2.18	.03
Identity Exploration			.16	4.70	.001
Identity Commitment			.17	4.93	.001

Note. F for model and change for step: * $p < .01$ ** $p < .001$.

Chapter 4

DISCUSSION

The primary goal of this dissertation was to study the psychosocial stage of identity development (Erikson, 1968) in the aftermath of trauma as it is largely unknown how one's identity is related to traumatic stressors, distress, and growth. Further understanding of these relationships can help psychologists focus on interventions and the prevention of stress-related mental health problems that are related to difficulties resolving important developmental tasks (Masten et al., 1999; Parker et al., 2004; Rutter, 1993).

The Experience of Trauma

An examination of the characteristics associated with the experience of trauma for this sample revealed interesting findings. The majority of the participants had experienced at least one traumatic stressor, with over half of the participants experiencing five or more events within the last 11 months. The high prevalence of traumatic events challenges the notion (Kira et al., 2008) that most people experience only one traumatic stressor over the course of a lifetime, or even within the emerging adult age group of 18 to 24 (Banyard & Cantor, 2004). The assessment of the occurrence and type of trauma exposure is important for clinical work with emerging adults.

The average number of direct traumatic events reported (M = 4.3) was similar to those found by Breslau et al. (1998) (M = 4.3) in their sample of 2,181 people aged 18 to 45, living in the Detroit area. Breslau et al. (1998) found that a

sudden unexpected death of a close relative or friend was the most prevalent traumatic stressor (60%). In the current study, 53% of the participants reported the known death of someone close followed by a sudden or unexpected death of a close individual (37%) as the most frequently experienced traumatic stressors. Based on the high frequency of death experienced by emerging adults in this sample, therapy with a focus on bereavement work may be an appropriate approach for a subset of trauma survivors who are distressed after the death of a loved one (Bonanno et al., 2001; Stroebe & Strobe, 1991).

Other prevalent direct and indirect exposures for the participants were serious accidents, divorce or separation, and natural disasters, while the exposures of separation from a child, foster care/adoption, and physical neglect were the least prevalent. These traumatic stressors may be differentially relevant to the emerging adult age group based on their life events. For example, young adults are new to driving, may have less supervision from caregivers, and often exhibit more reckless behaviors than older adults. In addition, emerging adults exhibit more risky behaviors that can result in accidents. Furthermore, many have experienced the divorce of their parents. They are less likely to be a parent themselves.

The percentage of participants who met the cut-off for PTSD diagnosis (27%) was slightly higher than in previous epidemiological studies that have found PTSD diagnosis among 5-20% of participants (Breslau, 2009; Copeland et al., 2007; Kessler et al., 1995). Possible reasons for the higher level of PTSD

diagnoses in the current study include the higher number of traumatic stressors assessed, the use of an online administered self-report measure rather than an interview, the subject matter of the study known to be related to stress responses, and the select age group of emerging adults. Since, pre- and post- data were not gathered for posttraumatic stress (PTS) symptoms and trauma exposure, it was not possible to determine whether the high reported rate of multiple trauma exposures contributed to the greater number of participants meeting criteria for PTSD. However, the effects of traumatic experiences have been found to be cumulative (Follette, et al., 1996; Goodman et al., 1997). For example, a longitudinal epidemiologic study found young adults who met criteria for PTSD after one traumatic event were at heightened risk of again developing PTSD after a second trauma (Breslau et al., 2008). Researchers have also reported that both adolescents and adults who experienced multiple traumatic events also experienced greater PTSD than those who were only exposed to one trauma (e.g., Howgego et al., 2005; Krupnick et al., 2004; Suliman et al., 2009).

Identity Development

The study participants reported being predominantly in the diffused identity status (36%), followed by the moratorium status (29%) and foreclosed status (24%), with the lowest number of participants in the achieved status (11%). These findings are slightly different from those found by Berman, Weems, Rodriguez, and Zamora (2006) in their sample of 324 emerging adults. They found 13% of their participants were in the diffused status, 29% were in the

foreclosed status, 34% were in the moratorium status, and 24% were in the achieved status. In comparison, the current study had higher rates of diffused and lower rates of achieved statuses. While these studies were not comparable on all demographic variables, it is interesting to note that the current study sample had higher percentages of diffused statuses and lower percentages of achieved statuses than did the Berman et al. (2006) sample. These differences may be due to measurement error with an individual's placement in a status changed by responses to only a few items. Additionally, with a mean age of 19.9, the participants in the current sample were younger than the participants in Berman et al.'s sample (mean age of 21.7). The higher number of young emerging adults may be another reason for the higher number of participants who were classified in the diffused status rather than the achieved status. These young adults may not have had adequate time to commit to identity related issues.

The participants in the current sample were more likely to be in the identity statuses comprised of lower identity commitments (diffused and moratorium) than those comprised of higher identity commitments (foreclosed and achieved). Waterman (1999) found the transitional period of emerging adulthood to incorporate more aspects of the moratorium status, in which exploration is high but commitments are low. Keeping this in mind, it is not surprising that the achieved identity status group had the fewest number of participants. Many of the emerging adults in this sample were continuing to explore and define their identity commitments, but they had not yet made

thoughtful choices or balanced decisions for potential life options, aspects that are related to the achieved status (Berzonsky, 2004; Zimmer-Gembeck & Petherick, 2006).

Examination of the identity status comparisons on the variables of interest revealed patterns suggesting that the moratorium and foreclosed identity statuses were significantly different. The moratorium and achieved statuses were equal on most of the comparisons, except for identity distress in which the moratorium status reported more distress than those in the achieved status. These results provide support for theory (Erikson, 1968; Marcia et al., 1993) and research (Erlanger, 1998; Kroger et al., 2010) that suggest the expected developmental trajectories for emerging adults is to progress towards achieved identity status rather than regress to diffused status.

Early theorists (Erikson, 1963; Freud, 1962; Gould, 1978) believed that adults should emerge from adolescence with a good idea of who they are and who they will be in the future; however, this transition is now considered a lengthy process that continues through early adulthood (Côté, 2006; Kroger, 2006). Emerging adulthood provides an extension of the moratorium status in which young individuals continue the exploration stage of developing their identity (Arnett, 2006) before making concrete commitments to their many potential choices. The findings of this study add to the increasing evidence (Arnett, 2000; Santrock, 1996) that identity development is an extensive process that continues beyond traditional adolescence.

Erikson's (1968) view that identity formation can be a difficult process has received research support. Numerous studies have found that identity exploration, particularly the diffused status, is consistently related to psychological dysfunctions and more distress (e.g., Archer, 2008; Hamilton, 1996; Luyckx et al., 2006; Vleioras & Bosma, 2005; White, 2000; Wiley & Berman, 2012). Individuals in the diffused status are not actively seeking or exploring areas of their identity, and they lack commitments to goals, values, roles, and choices for their life (Berger, 2008; Marcia, 1966). Moratorium is also considered the status in which an identity crisis occurs due to active exploration of different options, desperate searching for choices, and having not yet chosen from alternatives (Erikson, 1968; Marcia, 1966). In contrast, the foreclosed and achieved identity statuses, which are associated with greater identity commitments, have been related to greater well-being (Vleioras & Bosma, 2005). Hypothesis one, which posited that participants in the diffused and moratorium identity statuses would experience more identity distress, PTS symptoms, and centrality of the trauma event to their identity than would participants in the foreclosed and achieved identity status groups was partially supported.

As compared to individuals who had already made identity commitments (foreclosed), participants who were exploring more areas of their identity without having made any concrete commitments (moratorium) reported not only experiencing more distress in their identity but also experiencing trauma as a central component of their personal identity. Those in identity statuses low in

commitment (moratorium and diffused) also reported more PTS symptoms than those in the foreclosed identity status, which is high in identity commitment. The prediction that participants who met criteria for PTSD diagnosis would report less identity commitment and more identity exploration was also supported by the study data (H3). Traumatic events have the potential seriously to disrupt many aspects of an individual including developmental trajectories. Therefore, it is reasonable to conclude that trauma may be related to changes in identity development and, in turn, to changes in how confident individuals feel about their identity choices.

This study found exposure to trauma and PTS symptoms predicted identity exploration; however, further examination of these relationships revealed that identity distress and centrality of the trauma event were the only significant predictors of identity exploration above and beyond trauma exposure and PTS symptoms (H6). When identity distress and the centrality of the trauma event to one's identity were added, PTS symptoms no longer accounted for a significant portion of the variance in identity exploration. Therefore, it may not be trauma exposure, in and of itself, that is associated with exploration of one's identity but rather how central the trauma event is to one's identity and how much distress that individual is experiencing in his or her identity. Emerging adults who experience trauma may perceive more negative personal changes and experience more difficulties in developing a healthy sense of identity. They may be vulnerable to developmental disruptions in which their ability to move through the task of

identity construction is delayed, and they are less able to make identity commitments. In particular, it has been suggested that those who experience distress in their identity may be prone to experience an impaired identity formation in which they have a premature closure of identity development (foreclosed status) (Pynoos & Eth, 1985). This was not supported by the study finding in that those in the foreclosed identity status experience less identity distress than did those in the diffused and moratorium statuses. Perhaps being in the foreclosed status results in not experiencing distress about one's identity. They may think they know who they are even though this may be a result of parent and peer definition, so they do not worry about making more explorations which is related to identity distress.

It is also possible that identity distress may be temporary and alleviated when identity commitments are made (Crocetti et al., 2008; Schwartz et al., 2009, 2010). Differing results were found for identity commitments in which fewer trauma exposures, PTS symptoms, trauma severity, and time since the trauma were significant predictors. When the centrality of the trauma and identity distress were added as predictors of identity commitment, identity distress was the only predictor of identity commitments above and beyond the experience of trauma (H6). Therefore, individuals who have had fewer exposures to trauma and are not experiencing distress in their identity are more likely to develop a stable, cohesive, sense of self by making commitments to identity related issues. The predictions of identity development in this study suggest that trauma may be

related to difficulties resolving the psychosocial developmental task of emerging adulthood. However, identity-related distress and the centrality of the trauma to one's identity predicted identity exploration while less identity distress predicted identity commitments above and beyond the experience of trauma. Consequently, aspects related to identity after traumas are more important to development than the experience of trauma alone.

Distress

Traumatic stressors are related to identity and distress in many ways. Unlike past research findings, there were no gender differences found for identity distress (Hernandez et al., 2006). Meta-analyses have found female gender to be a pre-trauma risk factor for developing PTSD (Brewin et al., 2000; Chilcoat & Breslau, 1998; Tolin & Foa, 2006). As hypothesized (H2), female participants reported more identity distress and centrality of the trauma event to their identity than did male participants. It is possible that men responded in a socially desirable way or they may be better able to adapt positively to negative life experiences. Women may also experience more emotional reactions and later experience more growth.

Hypothesis three confirmed the prediction that participants who met criteria for PTSD diagnosis would report more identity distress. These results support the idea that the elaboration and consolidation of a sense of identity may be more difficult after experiencing trauma or highly stressful events (Wiley et al., 2011). As Erikson's (1968) theory of psychosocial development states, it is

necessary for an individual to have an average, predictable environment in order to construct a stable identity and this environment may be disrupted when a traumatic event occurs.

Individuals with a PTSD diagnosis were hypothesized to report the trauma as being more central to their identity, and this finding was found to be true for this sample (H3). Individuals who experience distress after traumatic exposure may have more difficulties accommodating the new trauma-acquired identity with their pre-trauma identity in comparison to individuals who do not experience distress after trauma (Hollon & Garber, 1988). Hypothesis five further explored these relationships with the centrality of the trauma event being expected to predict identity distress above and beyond the experience of trauma. This hypothesis was correct. Trauma severity was no longer a significant predictor of identity distress when the centrality of the trauma event was added, suggesting that the centrality of the trauma event to one's identity is more important to the experience of identity distress than how severe the trauma experience is. As trauma survivors reflect on their stressful experience, they may begin to recognize the discrepancy between unattained goals or schemas, and the trauma may become a turning point in their identity (McAdams, 1993; McAdams et al., 2001; Tedeschi & Calhoun, 1995), contributing to more identity distress. The centrality of the trauma event to one's identity may destabilize or deanchor an individual's sense of identity.

Positive Change

While trauma is related to symptoms of posttraumatic stress and identity distress, it is possible that the experience of distress can serve as a growth point or instead contribute to further psychopathology (Dugan, 2007). It is not presumed that these issues are mutually exclusive, but rather, survivors of trauma might experience a time of distress and a period of growth. Examination of the identity statuses in hypothesis one found that participants in the foreclosed identity status, having made identity commitments, reported more resilience than did those in the identity status groups (diffused and moratorium) without identity commitments. Making identity commitments may serve a protective function for individuals, especially those who have experienced traumatic stressors (e.g., Madan-Swain et al., 2000). Since the committed statuses of diffusion and achievement are congruent with less distress and more resilience, psychologists can help trauma survivors in emerging adulthood by providing opportunities for proactive identity exploration and by facilitating commitment making (Berman et al., 2009; Kurtines et al., 2009; Montgomery & Côté, 2003; Montgomery, Hernandez, & Ferrer-Wreder, 2008). For PTG, participants in the achieved status reported more growth than did those in the diffused status; however, participants in the moratorium status reported more growth than participants in the foreclosed status. These findings suggest that exploration within one's identity may be a necessary part of being able to experience growth after trauma.

There were no gender differences found within reported resilience. While being female is a risk factor for developing PTSD after a trauma, it does not necessarily mean that being male represents a resiliency factor (Hoge et al., 2007). In contrast, the findings suggest that female trauma survivors may recognize areas of growth after trauma more than males but females also continue to experience PTS symptoms more than males (H2). This presents a paradox. Similarly, as predicted, hypothesis three found participants who met criteria for PTSD reported more PTG than did participants who did not meet criteria for PTSD diagnosis. Calhoun and Tedeschi (1998) have found continuing levels of distress to contribute to PTG. Unlike the proposal of Linley and Joseph (2004), growth and distress may not be opposite endpoints on a bipolar continuum. Instead, PTG may result from great distress while also being maintained through continued distress (Tedeschi & Kilmer, 2005). While this may seem counterintuitive, these relations have been posited by theories of posttraumatic growth (PTG), including Mahoney's (1982) Model of Human Change processes (change occurs through psychological disequilibrium and result from the individual's pursuit for growth and meaning) and Hager's (1992) Model of Chaos and Growth (periods of confusion and disorganization must occur in order to grow and change after the experience of trauma). Through the lens of Tedeschi and Calhoun's (2004) Functional-Descriptive Model, trauma survivors may not only experience psychological distress by the threats or challenges to the core beliefs they hold but may also experience potential consequences of PTG through

cognitive efforts to redefine those beliefs and rebuild their assumptive world (Calhoun & Tedeschi, 2006; Janoff-Bulman, 2004).

Hypothesis three also found individuals with a PTSD diagnosis reported less resilience. Folkman (1997) proposed in his Transactional Model of resilience that negative psychological states may help motivate people to search for and create positive psychological states in order to gain relief from distress. Resilient individuals are, therefore, able to move beyond the traumatic stressor with little or no distress (Bonanno, 2004; Parker et al., 2004); however, individuals who endorse characteristics of PTG often experience global distress, avoidance, and intrusive thoughts (Helgeson et al., 2006). These results do not suggest that resilience is superior to PTG or vice versa, but rather that resilient individuals may not have the desire, need, or opportunities to experience PTG (Westphal & Bonanno, 2007). PTG may not lessen the trauma survivor's emotional distress but instead may help trigger a reconsideration of their life, purpose, and meaning (Calhoun et al., 2000; Tedeschi & Calhoun, 2004). In a meta-analysis, Hobfoll et al. (2007a) concluded that PTG can lead to people experiencing more distress, but it can also, at times, lead to a buffering of distress.

The data supported hypothesis four, which predicted an inverted U-shaped, quadratic relationship above and beyond a linear relationship between trauma severity and PTG. This finding adds to the existing literature on dose-effect relationships and trauma (Breslau et al., 1999a; Follette et al., 1996; Fontana & Rosenheck, 1998; Mollica, et al., 1998; Nishith, et al., 2000; Turner &

Lloyd, 1995), in which higher positive consequences have been found for intermediate levels of trauma severity in comparison to higher or lower levels. In this study, increases in trauma severity corresponded to decreases in PTG after a moderate level of trauma severity was experienced. These findings may add research support for the Theory of Stress Inoculation proposed by Meichenbaum (1993) and Lyons and Parker (2007) in which prior experiences of trauma can provide an inoculation against severe trauma reactions. When an individual experiences multiple traumatic stressors that are related to higher levels of trauma severity, they may be better able to learn and grow from the subsequent trauma experiences. However, this growth only occurs to a point. After a moderate level of trauma severity is experienced, posttraumatic growth (PTG) begins to decrease. Severe stress can become overwhelming and is known to lead to dysfunctions; however, as this research suggests, moderate stressor severity can provide a challenge that can potentially provide the trauma survivor with meaning and growth (O'Leary, 1998; Rutter, 1987).

Seery et al. (2010) posited that low and high levels of stress would be related to resilience compared to no stress; however, quadratic relationships between trauma exposure and resilience and between trauma severity and resilience were not found for this sample. A possible reason for these findings may be that due to the high rate of trauma exposures in comparison to mild stressors, participants were not provided with a platform for developing resilience and toughness. The experience of multiple and/or extreme trauma may not

provide the same opportunities to gradually build coping skills and adaptability for later events (Dienstbier, 1989; Hamburg & Adams, 1967).

A quadratic relationship between trauma exposure and PTG was not significant; however, a cubic relationship was which, disconfirms the second part of hypothesis four. The cubic model was a significant improvement from the linear model suggesting that an increase in trauma exposure leads to both increases and decreases in PTG. Increases in initial trauma exposure correspond to increases in PTG, but as the number of trauma exposures increases to a moderate level, PTG begins to decline. This relationship may increase again as trauma exposures become even greater. These results suggest that exposure to moderate trauma exposure may strengthen resistance to later stressors or provide greater potential for more personal growth (Janoff-Bulman, 1990; Paton, 2005). Collectively, these findings highlight that the greatest potential to experience PTG after trauma exposure occurs when the level of trauma exposure and trauma severity is at a moderate level.

Additional analyses were examined to shed light on the factors related to identity that may contribute to resilience and PTG after the experience of trauma (H7). Identity development predicted resilience and PTG above and beyond the experience of trauma, identity distress, and the centrality of the trauma event. These findings support the importance of identity on the ability to adapt and grow after trauma. Previous research studies (Kobasa, 1979; Kobasa et al., 1982; Maddi, Bartone, & Puccetti, 1987) have found resilient individuals to be more

committed to what they are doing, feel more in control of their problems, and be more willing to accept changes in life as challenges rather than threats. They are also curious, active in exploration, and believe in their ability to influence events.

Resilient individuals have also been found to be less distressed (Barling et al., 1987) than non-resilient individuals. In this study, identity distress was a significant predictor of resilience and PTG; however, the relationship between resilience and identity distress was negative and the relationship between PTG and identity distress was positive. Again, these findings highlight the need for an individual to experience some distress in order to also experience growth after trauma. Distress does not appear to be important to the experience of resilience.

The centrality of the trauma event did not predict resilience but did predict PTG. This finding may be related to the higher persistence of cognitive processing that occurs with PTG in comparison to resilience (Tedeschi & Calhoun, 2004). Therefore, these results suggest that the centrality of the event to one's identity may not only serve a role in the development and /or maintenance of PTS symptoms (Berntsen &Rubin, 2007) but may also help increase the ability to experience growth after a traumatic event. As suggested by Conway (2005), an incongruence between the traumatic stressors and the existing self-definition or identity can motivate change, which may be seen here through PTG. Aldwin and Levenson (2001) noted in their Conservation of Resource Theory, both stressors and positive events can promote development in adulthood. Trauma can trigger an identity crisis or distress within one's identity, defined by Erikson (1963) as a

necessary turning point when development must move one way or another, requiring resources of growth, recovery, and further differentiation. These results suggest one's sense of self is linked to positive change (Wiley et al., n.d.) and that identity development is a key factor to experiencing resilience and growth after trauma.

Limitations

While the current study has many strengths, there are also limitations that are important to discuss and consider when interpreting the results. The sample was non-representative of the general population as it consisted mostly of Caucasian, undergraduate students in the emerging adult age group of 18 to 24. Using a convenience sample also restricts the ability to generalize the study results to the larger population. The data were collected using an online survey and a self-selected sample, thus, random sampling was not conducted. While the use of a web-based data collection and self-report measure, rather than an interview or hand-written response, may provide participants with more confidentiality and result in more honest responses (e.g., Krantz & Dalal, 2000; Reips, 2000; Schlenger & Silver, 2006), there are also limitations to online research. These include the availability to participate being only accessible to individuals with a computer and internet (Olson, Banaji, Bruckman, Cohen, & Couper, 2003).

Since the cross-sectional data were only obtained at one point in time, lifetime estimates of trauma exposure were based on participant recall. The cross-

sectional analyses also make it difficult to know how patterns in identity formation emerge over time. The stability of the variables over time was not assessed and the reciprocal nature of the variables in question is unknown. The retrospective accounts of traumatic experiences are subject to recall biases, because they are limited to the participant's memory. It is possible that individuals with psychopathology recall trauma easier and are less likely to forget compared to individuals who do not experience psychopathology (Brewin, Andrews, & Gotlib, 1993; Kessler, 1997; Schraedley, Turner, & Gotlib, 2002). Unfortunately, it is quite difficult to retrieve information about trauma in another way, and nearly all of the empirical evidence on the effects of past trauma are based on retrospective accounts. It is also difficult to study PTS symptoms because traumatic events (particularly those that are acute such as disasters, terrorist attacks, etc.) are almost never expected and baseline data are nearly impossible to collect. Researchers can rarely, if ever, attribute causality when discussing historical events and preexposure factors such as underlying psychopathology (El-Sayed, & Galea, 2011).

Another limitation to this study is the use of a modified traumatic stressor checklist. The standard practice for measuring traumatic stressors is to provide a list of events for research participants; however, there are still limitations to the current methodology used. The modified LSC-R extended the amount of traumatic stressors assessed by combining those provided with the LEC (Gray et al., 2004) and reorganizing items on the current LSC-R (Wolfe & Kimerling,

1997). Most clinicians and specialists in PTSD diagnosis recommend the use of a comprehensive, multiple-item measure that provides separate categories for potential traumatic events (Cusack, Falsetti, & De Arellano, 2002; Elhai, Gray, Kashdan, & Franklin, 2005). However, trauma history instruments that are comprehensive and that have established psychometric properties are difficult to develop (Corcoran, Green, Goodman, & Krinsely, 2000). Using the modified LSC-R allowed for the assessment of both indirect and direct exposures; however, analyses to assess the reliability and validity of the modified LSC-R are needed.

Implications

This research study provides new and potentially useful information on the experience of trauma, identity development, distress, and positive change. Masten (2001) suggested that attention should be given to the human capabilities and adaptive systems that promote healthy development and functioning. The findings of this study can help inform public policy, prevention, and intervention programs that aim to improve mental health for emerging adults who have experienced trauma. Some current interventions for helping people to deal with the emotional and behavioral problems related to trauma often include promotion of a sense of self, identity, and collective efficacy, a sense of safety and connectedness, instillation of hope, and self-soothing and relaxation skills (Hobfoll et al., 2007). Future intervention programs designed specifically to help trauma survivors seeking therapeutic services would benefit from the inclusion of

skill development in exploring identity-related issues and facilitating identity commitments.

Psychologists can help emerging adult trauma survivors learn how to reconcile "who they are now" and move towards posttraumatic growth after the trauma by assimilating the new trauma-acquired identity with the old identity or a revision of existing schemas to better accommodate the new information (Joseph & Linley, 2006). In therapy, the trauma survivor can be encouraged to explore, clarify, explain, and expand their understanding of their sense of identity. When these efforts are deliberately practiced and supported by therapists, trauma survivors may gain insights and begin to understand better the challenges and choices they have in their lives. When this is successful, the trauma survivor may experience a new sense of how to identify, address, and overcome distressful symptoms. Consequently, the better one knows one's self, the more influence one has toward finding meaning and purpose in life.

Since the trauma may have changed the reality of their life and their identity commitments, trauma survivors can work toward making meaning out of trauma through cognitive processing and restructuring their identity. Discussion of factors related to both distress and growth may be important focus areas for counseling of trauma survivors. Topics can include not only the symptoms associated with posttraumatic stress but also the potential for changes outlined by Tedeschi and Calhoun (1996, 2004). These changes may occur in the perceptions of intimacy, closeness, and meaning in relationships, or increased compassion for

other trauma survivors. Trauma survivors might also discuss growth regarding the discovery of potential possibilities for their life now in comparison to before the trauma. They may experience more confidence in themselves, feel a greater sense of purpose, understand better the meaning of life, and discover a renewed sense of spirituality (Tedeschi & Calhoun, 1996, 2004). Assessment of these growth areas and how they may be met through therapy to help trauma survivors reach a positive change after trauma exposure is an important next step for future research studies.

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APPENDIX A

INSTITUTIONAL REVIEW BOARD EXEMPTION NOTIFICATION

ASU Knowledge Enterprise Development

Office of Research Integrity and Assurance

To:	Sharon Kurpius EDB
From:	Mark Roosa, Chair Soc Beh IRB
Date:	06/06/2011
Committee Action:	**Exemption Granted**
IRB Action Date:	06/06/2011
IRB Protocol #:	1105006474
Study Title:	Identity after Trauma: Relationships of Distress and Growth

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(2) .

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.

APPENDIX B

PARTICIPANT RECRUITMENT SCRIPT

Dear Participant:

I am a graduate student conducting a research study looking at the different ways in which people respond to stressful experiences. I am recruiting individuals who are 18 and older, to complete a survey which will take approximately 15-20 minutes. Your participation is voluntary. If you have any questions concerning the research study, please contact me.

The information letter and survey can be accessed at this link: http://edu.surveygizmo.com/s3/574707/Research-Study

If you would like to be entered to win a $50 gift card, please send your email address after completing the study and 3 participants will be randomly selected for these prizes. Your e-mail address will not be linked to your survey results at any time.

Thank you!

Rachel Wiley

2d Lt Rachel Wiley (USAF), MA
Doctoral Candidate
Counseling Psychology
Arizona State University
Rachel.Wiley@asu.edu

APPENDIX C

INFORMED CONSENT LETTER

Dear Participant:

I am Dr. Sharon Robinson Kurpius, a professor in the Counseling Psychology program at Arizona State University. Along with my doctoral student, Rachel Wiley, I am studying identity development, distress, and resilience after the experience of trauma.

We would like to invite you to participate, which would involve your filling out a survey packet that will take approximately 15-20 minutes. You may choose not to answer any questions or to stop at any point.

Participation is voluntary. There is no penalty for withdrawing from the study at any time. You must be 18 years of age or older to participate.

There are no known risks to completing the survey packet, although it is possible that answering questions about your past experiences of stress and trauma may cause some distress. You can receive counseling services at ASU's Counseling and Consultation (480-965-6146) or at the Counselor Training Center (480-965-5067). A benefit to participating in this survey might be a greater understanding of your growth and resilience since the stressful or traumatic experience. The results of the study may be used to help develop a program focused on helping individuals with similar stressful experiences.

All of your responses to the survey questions will be anonymous. Do not give your name. Filling out this survey will be your informed consent to participate. All data will be used for research purposes only.

If you have any questions about this research project, please contact me at (480) 965-6104. If you have questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk; you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965 6788.

Sincerely,

Sharon Robinson Kurpius, Ph.D.
Professor and Director of Training
Counseling and Counseling Psychology
Arizona State University

APPENDIX D

DEMOGRAPHIC QUESTIONNAIRE

1. What is your sex? ___Male ___ Female ___ Transgender

2. How old are you? _____

3. What is your level of education?
___ Less than High School Diploma ___ High School Diploma
___ Current Undergraduate Student ___ Associates Degree
___ Bachelors Degree ___ Masters Degree ___ Doctoral Degree
___ Current Masters Level Student ___ Current Doctoral Level Student

4. If Applicable: What grade level are you currently in?
___ Freshman ___ Sophomore ___ Junior ____ Senior

5. What is your racial or ethnic identity?
___ Asian American ___ African American ___ Caucasian
___ Native American (American Indian, Samoan, or Hawaiian) ___ Hispanic (Latino/a)
___ Multiracial (please identify _____)
___ Other (please identify _____)

6. What is your yearly household income? (Include income for everyone who lives with you).
___Under $9,999 ___ $10,000 to $19,999 ___ $20,000 to $29,999
___ $30,000 to $39,999
___$40,000 to $49,999 ___ $50,000 to $59,999 ___ $60,000 to $69,999
___$70,000 +

7. What city and state do you live in? _____,_____

APPENDIX E

MODIFIED LIFE STRESSOR CHECKLIST REVISED

**** INSTRUCTIONS: Please think back over your whole life when you answer these questions.**

1. Have you ever been in a natural disaster (for example, flood, hurricane, tornado, tsunami, earthquake)?
____ Yes ____ No, but I have witnessed this ____ No *(If no, go to question 2)*

b1. How long ago did this happen (in days, months, or years)? ____ _____

b2. How many times did this happen? ____

c. At the time of the event(s) did you believe that ***you or someone else*** could be ***killed*** or seriously ***harmed?***
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of ***intense*** helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

2. Have you ever been in a fire or explosion?
____ Yes ____ No, but I have witnessed this ____ No *(If no, go to question 3)*

b1. How long ago did this happen? (in days, months, or years)? ____ _____

b2. How many times did this happen? ____

c. At the time of the event(s) did you believe that ***you or someone else*** could be ***killed*** or seriously ***harmed?***
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of ***intense*** helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

3. Have you ever had a serious accident or accident-related injury (for example, a bad car wreck, boating accident, train wreck, airplane crash, an on-the-job accident, accident at home or recreational activity)?
____ Yes ____ No, but I have witnessed this ____ No *(If no, go to question 4)*

b1. How long ago did this happen? (in days, months, or years)? ____ _____

b2. How many times did this happen? ____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

4. Have you or a close family member ever been sent to jail?
____ Yes ____ No, but I have witnessed this ____ No (If no, go to question 5)

a1. How long ago was a family member sent to jail? (in days, months, or years) ____ _____
(skip to b1 if this is not applicable)

a2. How many times did this happen? _____

b1. How long ago were you sent to jail? (in days, months, or years) ____ _____

b2. How many times did this happen? _____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

5. Have you ever been exposed to toxic substances (for example, dangerous chemicals, radiation)?
____ Yes ____ No, but I have witnessed this ____ No (If no, go to question 6)

b1. How long ago did this happen? (in days, months, or years) ____ _____

b2. How many times did this happen? ____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

6. Were you ever been put in foster care or put up for adoption? ____ Yes ____ No (If no, go to question 7)

b1. How long ago did this happen? (in days, months, or years) ____ _____

b2. How many times did this happen? ____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

7. Have you or your parents (while you were living with them) ever separated or divorced?
____ Yes ____ No (If no, go to question 8)

a1. How long ago did your parents separate or divorce? (in days, months, or years) ____ _____

a2. How many times did this happen? _____

b1. How long ago did you separate or divorce? (in days, months, or years) ____ _____

b2. How many times did this happen? _____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

8. Have you ever had serious money problems (for example, not enough money for food or a place to live)?
____ Yes ____ No (If no, go to question 9)

b1. How long ago did this happen? (in days, months, or years) ____ _____

b2. How many times did this happen? ____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

9. Have you ever had a very serious physical or mental illness (for example, cancer, heart attack, serious operation, felt like killing yourself, hospitalized because of nerve problems)?
____ Yes ____ No (If no, go to question 10)

b1. How long ago did this happen? (in days, months, or years) ____ _____

b2. How many times did this happen? _____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

10. Have you ever been emotionally abused or neglected (for example, being frequently shamed, embarrassed, ignored, or

repeatedly told that you were "no good")? ____ Yes ____ No (If no, go to question 11)

b1. How long ago did this happened? (in days, months, or years) _____ _____

b2. How many times did this happen? _____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

11. Have you ever been physically neglected (for example, not fed, not properly clothed, or left to take care of yourself when you were too young or ill)? ____ Yes ____ No (If no, go to question 12)

b1. How long ago did this happen? (in days, months, or years) _____ _____

b2. How many times did this happen? _____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

12. Before age 16, were you ever abused or physically attacked (not sexually) by someone you knew (for example, a parent, boyfriend, or husband, hit, slapped choked, burned, or beat you up?
____ Yes ____ No (If no, go to question 13)

b1. How long ago did this happen? (in days, moths, or years) _____ _____

b2. How many times did this happen? _____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

13. After age 16, were you ever abused or physically attacked (not sexually) by someone you knew (for example, a parent, boyfriend, or husband, hit, slapped choked, burned, or beat you up?
____ Yes ____ No (If no, go to question 14)

b1. How long ago did this happen? (in days, months, or years) ____ _____

b2. How many times did this happen?

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

14. Have you ever been bothered or harassed by sexual remarks, jokes, or demands for sexual favors by someone at work or school (for example, a coworker, a boss, a customer, another student, a teacher)?
____ Yes ____ No, but I have witnessed this ____ No (If no, go to question 15)

b1. How long ago did this happen? (in days, months, or years) ____ _____
b2. How many times did this happen? ____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

not at all	little	some	moderately	extremely

e. How much has this affected your life in the past year? 1 2 3 4 5

15. Before age 16, were you ever touched or made to touch someone else in a sexual way because he/she forced you in some way or threatened to harm you if you didn't? ____ Yes ____ No (If no, go to question 16)

b1. How long ago did this happen? (in days, months, or years) ____ _____

b2. How many times did this happen? ____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

16. Before age 16, did you ever have sex (oral, anal, genital) when you didn't want to because someone forced you in some way or threatened to hurt you if you didn't? ____ Yes ____ No (If no, go to question 17)

b1. How long ago did this happen? (in days, months, or years) ____ _____

b2. How many times did this happen? _____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

17. After age 16, did you ever have sex (oral, anal, genital) when you didn't want to because someone forced you in some way or threatened to hurt you if you didn't? ____ Yes ____ No (If no, go to question 18)

b1. How long ago did this happen? (in days, months, or years) ____ _____

b2. How many times did this happen? _____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

18. After age 16, were you ever touched or made to touch someone else in a sexual way because he/she forced you in some way or threatened to harm you if you didn't? ____ Yes ____ No (If no, go to question 19)

b1. How long ago did this happen? (in days, months, or years) ____ _____

b2. How many times did this happen? _____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

19. Have you ever seen violence between family members (for example, hitting, kicking, slapping, punching)? ____ Yes ____ No (If no, go to question 20)

b1. How long ago did this happen? (in days, months, or years) ____ _____

b2. How many times did this happen? _____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

20. Have you ever been robbed, mugged, or physically attacked (not sexually) by someone you did not know?
____ Yes ____ No, but I have witnessed this ____ No (If no, go to question 21)

b1. How long ago did this happen? (in days, months, or years) ____ _____

b2. How many times did this happen? ____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

21. Have you ever been assaulted with a weapon (for example, being shot, stabbed, threatened with a knife, gun, or bomb)?
____ Yes ____ No, but I have witnessed this ____ No (If no, go to question 22)

b1. How long ago did this happen? (in days, months, or years) ____ _____

b2. How many times did this happen? _____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

22. Have you ever been in combat or a war-zone (for example, in the military or as a civilian)?
____ Yes ____ No, but I have witnessed this ____ No (If no, go to question 23)

b1. How long ago did this happen? (in days, months, or years) ____ _____

b2. How many times did this happen? _____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

23. Have you ever been held captive (for example, being kidnapped, abducted, held hostage, pow)?
____ Yes ____ No, but I have witnessed this ____ No (If no, go to question 24)

b1. How long ago did this happen? (in days, months, or years) ____ _____

b2. How many times did this happen? _____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

24. Has someone close to you died suddenly or unexpectedly (for example, sudden heart attack, murder or suicide)?
____ Yes ____ No, but I have witnessed this ____ No (If no, go to question 25)

b1. How long ago did this happen? (in days, months, or years) _____ _____

b2. How many times did this happen? ____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

25. Has someone close to you died that was NOT sudden or unexpected?
____ Yes ____ No (If no, go to question 26)

b1. How long ago did this happen? (in days, months, or years) ____ _____

b2. How many times did this happen?

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

26. Have you ever been fired from a job or unemployed for a long period of time?
____ Yes ____ No (If no, go to question 27)

b1. How long ago did this happen? (in days, months, or years) ____ _____

b2. How many times did this happen? _____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

27. Have you ever had an abortion or miscarriage (lost your baby)?
____ Yes ____ No, but I have witnessed this ____ No (If no, go to question 28)

b1. How long ago did this happen? (in days, months, or years) _____ _____

b2. How many times did this happen? _____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

28. Have you ever been separated from your child against your will (for example, the loss of custody or visitation or kidnapping? ____ Yes ____ No, but I have witnessed this ____ No (If no, go to question 29)

b1. How long ago did this happen? (in days, months, or years) ____ _____

b2. How many times did this happen? _____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

29. Has a baby or child you've been close to had a severe physical or mental handicap (for example, mentally retarded, birth defects, can't hear, see, walk)? ____ Yes ____ No (If no, go to question 30)

b1. How long ago did this happen? (in days, months, or years) ____ _____

b2. How many times did this happen? _____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

30. Have you ever been responsible for taking care of an adult close to you who had a severe physical or mental handicap (for example, cancer, stroke, AIDS, nerve problems, can't hear, see, walk)?
____ Yes ____ No (If no, go to question 31)

b1. How long ago did this happen? (in days, months, or years) ____ _____

b2. How many times did this happen? _____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

31. Are there any other traumatic or highly stressful events we did not include that you would like to mention?
____ Yes ____ No (If no, go to question 32)

What was the event? _____

b1. How long ago did this happen? (in days, months, or years) ____ _____

b2. How many times did this happen? _____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

32. Have any of the events mentioned above ever happened to someone close to you so that even though you didn't see it yourself, you were seriously upset by it? ____ Yes ____ No (If no, go to question 1 below)

What was the event? _____

b1. How long ago did this happen? (in days, months, or years) ____ _____

b2. How many times did this happen? _____

c. At the time of the event(s) did you believe that you or someone else could be killed or seriously harmed?
___ Yes ___ No

d. At the time of the event(s) did you experience feelings of intense helplessness, fear, or horror?
___ Yes ___ No

	not at all	little	some	moderately	extremely
e. How much has this affected your life in the past year?	1	2	3	4	5

APPENDIX F

LIFE EVENTS CHECKLIST

Life Events Checklist

Listed below are a number of difficult or stressful things that sometimes happen to people. For each event, check one or more of the boxes to the right to indicate that: (a) It *happened to you* personally, (b) you *witnessed it* happen to someone else, (c) you *learned about it* happening to someone close to you, (d) you're *not sure* if it applies to you, or (e) it *doesn't apply* to you. Mark *only one* item for any single stressful event you have experienced. For events that might fit more than one item description, choose the one that fits best. Be sure to consider your *entire life* (growing up, as well as adulthood) as you go through the list of events.

Event	*Happened to me*	*Witnessed it*	*Learned about it*	*Not Sure*	*Doesn't apply*
1. Natural disaster (for example, flood, hurricane, tornado, earthquake)					
2. Fire or explosion					
3. Transportation accident (for example, car accident, boat accident, train wreck, plane crash)					
4. Serious accident at work, home, or during recreational activity					
5. Exposure to toxic substance (for example, dangerous chemicals, radiation)					
6. Physical assault (for example, being attacked, hit, slapped, kicked, beaten up)					
7. Assault with a weapon (for example, being shot, stabbed, threatened with a knife, gun, bomb)					
8. Sexual assault (rape, attempted rape, made to perform any type of sexual act through force or threat of harm)					
9. Other unwanted or uncomfortable sexual experience					
10. Combat or exposure to a war-zone (in the military or as a civilian)					
11. Captivity (for example, being kidnapped, abducted, held hostage, prisoner of war)					
12. Life-threatening illness or injury					
13. Severe human suffering					
14. Sudden, violent death (for example, homicide, suicide)					
15. Sudden, unexpected death of someone close to you					
16. Serious injury, harm, or death you caused to someone else					
17. Any other very stressful event or experience					

APPENDIX G

THE POSTTRAUMATIC STRESS DISORDER CHECKLIST-CIVILIAN VERSION

**** INSTRUCTIONS: Below is a list of problems and complaints that people sometimes have in response to stressful life experiences. Please read each one carefully, then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.**

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

1. Repeated, disturbing *memories, thoughts,* or *images* of a stressful experience from the past?	1	2	3	4	5
2. Repeated, disturbing *dreams* of a stressful experience from the past?	1	2	3	4	5
3. Suddenly *acting* or *feeling* as if a stressful experience *were happening again* (as if you were reliving it)?	1	2	3	4	5
4. Feeling *very upset* when *something reminded you* of a stressful experience from the past?	1	2	3	4	5
5. Having *physical reactions* (e.g., heart pounding, trouble breathing, sweating) when *something reminded you* of a stressful experience from the past?	1	2	3	4	5
6. Avoiding *thinking about* or *talking about* a stressful experience from the past or avoiding *having feelings* related to it?	1	2	3	4	5
7. Avoiding *activities* or *situations* because *they reminded you* of a stressful experience from the past?	1	2	3	4	5
8. Trouble *remembering important parts* of a stressful experience from the past?	1	2	3	4	5
9. *Loss of interest* in activities that you used to enjoy?	1	2	3	4	5
10. Feeling *distant* or *cut off* from other people?	1	2	3	4	5
11. Feeling *emotionally numb* or being unable to have loving feelings for those close to you?	1	2	3	4	5
12. Feeling as if your *future* will somehow be *cut short*?	1	2	3	4	5
13. Trouble *falling* or *staying asleep*?	1	2	3	4	5
14. Feeling *irritable* or having *angry outbursts*?	1	2	3	4	5
15. Having *difficulty concentrating*?	1	2	3	4	5
16. Being "*super-alert*" or watchful or on guard?	1	2	3	4	5
17. Feeling *jumpy* or easily startled?	1	2	3	4	5

APPENDIX H

THE EGO IDENTITY PROCESS QUESTIONNAIRE

**** INSTRUCTIONS: Read each statement carefully and indicate the degree to which you agree or disagree with each item by circling the answer that best describes you. Please do not omit any items.**

SD = Strongly Disagree
D = Disagree
N = Neutral
A = Agree
SA = Strongly Agree

1. I have definitely decided on the occupation I want to pursue	SD	D	N	A	SA
2. I don't expect to change my political principles and ideals	SD	D	N	A	SA
3. I have considered adopting different kinds of religious beliefs	SD	D	N	A	SA
4. There has never been a need to question my values	SD	D	N	A	SA
5. I am very confident about which kinds of friends are best for me	SD	D	N	A	SA
6. My ideas about men's and women's roles have never changed as I became older	SD	D	N	A	SA
7. I will always vote for the same political party	SD	D	N	A	SA
8. I have firmly held views concerning my role in my family	SD	D	N	A	SA
9. I have engaged in several discussions concerning behaviors involved in dating relationships	SD	D	N	A	SA
10. I have considered different political views thoughtfully	SD	D	N	A	SA
11. I have never questioned my views concerning what kind of friend is best for me	SD	D	N	A	SA
12. My values are likely to change in the future	SD	D	N	A	SA
13. When I talk to people about religion, I make sure to voice my opinion	SD	D	N	A	SA
14. I am not sure about what type of dating relationship is best for me	SD	D	N	A	SA

15. I have not felt the need to reflect on the importance I place on my family	SD	D	N	A	SA
16. Regarding religion, my views are likely to change in the near future	SD	D	N	A	SA
17. I have definite views regarding the ways in which men and women should behave	SD	D	N	A	SA
18. I have tried to learn about different occupational fields to find the one best for me	SD	D	N	A	SA
19. I have undergone several experiences that made me change my views on men's and women's roles	SD	D	N	A	SA
20. I have re-examined many different values in order to find the ones which are best for me	SD	D	N	A	SA
21. I think that what I look for in a friend could change in the future	SD	D	N	A	SA
22. I have questioned what kind of date is right for me	SD	D	N	A	SA
23. I am unlikely to alter my vocational goals	SD	D	N	A	SA
24. I have evaluated many ways in which I fit into my family structure	SD	D	N	A	SA
25. My ideas about men's and women's roles will never change	SD	D	N	A	SA
26. I have never questioned my political beliefs	SD	D	N	A	SA
27. I have had many experiences that led me to review the qualities that I would like my friends to have	SD	D	N	A	SA
28. I have discussed religious matters with a number of people who believe differently than I do	SD	D	N	A	SA
29. I am not sure that the values I hold are right for me	SD	D	N	A	SA
30. I have never questioned my occupational aspirations	SD	D	N	A	SA
31. The extent to which I value my family is likely to change in the future	SD	D	N	A	SA
32. My beliefs about dating are firmly held	SD	D	N	A	SA

APPENDIX I

CENTRALITY OF EVENTS SCALE

****<u>INSTRUCTIONS:</u> Please think back upon the most stressful or traumatic event in your life and answer the following questions in an honest and sincere way, by circling a number from 1 to 5.**

	Totally disagree				**Totally Agree**
1. I feel that this event has become part of my identity.	1	2	3	4	5
2. This event has become a reference point for the way I understand myself and the world.	1	2	3	4	5
3. I feel that this event has become a central part of my life story.	1	2	3	4	5
4. This event has colored the way I think and feel about other experiences.	1	2	3	4	5
5. This event permanently changed my life.	1	2	3	4	5
6. I often think about the effects this event will have on my future.	1	2	3	4	5
7. This event was a turning point in my life.	1	2	3	4	5

APPENDIX J

THE IDENTITY DISTRESS SURVEY

INSTRUCTIONS:

****To what degree have you recently been upset, distressed, or worried over any of the following issues in your life?**

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

1. Long term goals? (e.g., finding a good job, being in a romantic relationship, etc.)	1	2	3	4	5
2. Career choice? (e.g., deciding on a trade or profession, etc.)	1	2	3	4	5
3. Friendships? (e.g., experiencing a loss of friends, change in friends, etc)	1	2	3	4	5
4. Sexual orientation and behavior? (e.g., feeling confused about sexual preferences, intensity of sexual needs, etc)	1	2	3	4	5
5. Religion? (e.g., stopped believing, changed your belief in God/religion, etc.)	1	2	3	4	5
6. Values or beliefs? (e.g., feeling confused about what is right or wrong, etc.)	1	2	3	4	5
7. Group loyalties? (e.g., belonging to a club, school group, gang, etc.)	1	2	3	4	5
8. Please rate your overall level of discomfort (how bad they made you feel) about all the above issues as a whole	1	2	3	4	5
9. Please rate how much uncertainty over these issues as a whole has interfered with your life (for example, stopped you from doing things you wanted to do, or being happy)	1	2	3	4	5

10. How long (if at all) have you felt upset, distressed, or worried over these issues as a whole? (check below)

___1 (0-lessthan 1 month) ___2 (1-3 months) ___ 3 (3-6 months) ___ 4 (6-12 months) ___ 5 (more than 12 months)

APPENDIX K

THE CONNOR-DAVIDSON RESILIENCE SCALE

****<u>INSTRUCTIONS:</u> Please record the appropriate answer for each item.**

0 = Not true at all
1 = Rarely true
2= Sometimes true
3 = Often true
4 = True nearly all of the time

1. I am able to adapt to change	0	1	2	3	4
2. I have close and secure relationships	0	1	2	3	4
3. Sometimes fate or God can help me	0	1	2	3	4
4. I can deal with whatever comes	0	1	2	3	4
5. Past success gives me confidence for new challenge	0	1	2	3	4
6. I see the humorous side of things	0	1	2	3	4
7. Coping with stress strengthens me	0	1	2	3	4
8. I tend to bounce back after illness or hardship	0	1	2	3	4
9. I believe things happen for a reason	0	1	2	3	4
10. I use my best effort no matter what	0	1	2	3	4
11. I believe I can achieve my goals	0	1	2	3	4
12. When things look hopeless, I don’t give up	0	1	2	3	4
13. I know where to turn for help	0	1	2	3	4
14. Under pressure, I can focus and think clearly	0	1	2	3	4
15. I prefer to take the lead in problem solving	0	1	2	3	4
16. I am not easily discouraged by failure	0	1	2	3	4
17. I think of myself as a strong person	0	1	2	3	4
18. I make unpopular or difficult decisions	0	1	2	3	4
19. I can handle unpleasant feelings	0	1	2	3	4
20. I have acted on a hunch	0	1	2	3	4
21. I have a strong sense of purpose	0	1	2	3	4
22. I am in control of my life	0	1	2	3	4
23. I like challenges	0	1	2	3	4
24. I work to attain my goals	0	1	2	3	4
25. I have pride in my achievements	0	1	2	3	4

APPENDIX L

THE POSTTRAUMATIC GROWTH INVENTORY

**INSTRUCTIONS: Please indicate the degree to which the change reflected in each of the following statements is true in your life as a result of this crisis.

0 = I *did not* experience this change as a result of my crisis.
1 = I experienced this change to a *very small degree* as a result of my crisis.
2 = I experienced this change to a *small degree* as a result of my crisis.
3 = I experienced this change to a *moderate degree* as a result of my crisis.
4 = I experienced this change to a *great degree* as a result of my crisis.
5 = I experienced this change to a *very great degree* as a result of my crisis.

1. I changed my priorities about what is important in life.	0	1	2	3	4	5
2. I have a greater appreciation for the value of my own life.	0	1	2	3	4	5
3. I am able to do better things with my life.	0	1	2	3	4	5
4. I have a better understanding of spiritual matters.	0	1	2	3	4	5
5. I have a greater sense of closeness with others.	0	1	2	3	4	5
6. I established a new path for my life.	0	1	2	3	4	5
7. I know better that I can handle difficulties.	0	1	2	3	4	5
8. I have a stronger religious faith.	0	1	2	3	4	5
9. I discovered that I'm stronger than I thought I was.	0	1	2	3	4	5
10. I learned a great deal about how wonderful people are.	0	1	2	3	4	5