

THE INFLUENCE OF RELIGIOUS CENTRALITY ON ONE'S EXPERIENCE OF  
TRAUMATIC LIFE EVENTS

by

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## ABSTRACT

ALEXIS KIARA BRIGHTMAN. The influence of religious centrality on one's experience of traumatic life events. (Under the direction of DR. RICHARD TEDESCHI)

Posttraumatic growth is the positive psychological change that may occur as the result of coping with disruption of one's core beliefs, following the experience of a traumatic event. Some trauma survivors report a change in how they relate to others, appreciate life, perceive their personal strength, experience new possibilities for living, and experience spirituality. The current research study examines the role of spiritual beliefs in the overall process of posttraumatic growth. The results indicate that spiritual beliefs are positively related to the experience of core belief disruption: the more overall religious centrality that individuals reported, the more core belief disruption was endorsed. Results of regression analyses revealed that less endorsement of the religious centrality dimension of public practice predicted increased reports of core beliefs disruption. Additionally, regression analyses revealed that more reports of private practice of religion predicted increased endorsement of core belief disruption. Religious centrality, as a whole, was a positive predictor of posttraumatic growth, but none of the dimensions of religious centrality emerged as individual predictors of posttraumatic growth. This finding indicates that the religious centrality dimensions of public and private practice are related to the process of core belief disruption that leads to posttraumatic growth.

## DEDICATION

To every person who took the frightening leap of faith to follow a dream, even with no clear path or direction, I dedicate this work to you. It can be easy and inviting to become complacent, but your dreams won't come to fruition without discipline, dedication, and action. When you find an opportunity to do what you love, to make your dreams come true, do it and do it with all of your heart. Unabashedly. Give it all that you have and you won't regret it.

To my parents, who sacrificed tirelessly to provide an environment in which my brother and I could thrive in all aspects of life, I dedicate this work to you. I certainly could not have made it to where I am today, if I had not grown up with the model of two individuals who consistently strive for more. Thank you for your support. Thank you for your love. Thank you for your prayers. Thank you for continuing to wipe away my tears, even at twenty-six, and for always encouraging me to be my best self. On behalf of myself and Anthony, we are forever indebted.

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I am (sincerely) grateful for what I am and have. My thanksgiving is perpetual.

- *Henry David Thoreau*

*And not only that, but we also glory in tribulations, knowing that tribulation produces perseverance; and perseverance, character; and character, hope. Now hope does not disappoint, because the love of God has been poured out in our hearts by the Holy Spirit who was given to us.*

*Romans 5:1-5*

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## INTRODUCTION

Over half of Americans will be exposed to a life-threatening traumatic event at some point in their lives (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). The experience often results in a host of negative consequences, including depression, painful intrusive memories, feelings of alienation, and persistent negative beliefs about the world (American Psychiatric Association, 2013). For decades, researchers have explored the prevalence of traumatic experiences in various populations (Giaconia et al., 1995), the outcomes associated with trauma (Kessler et al., 1995; Ringel & Brandell, 2012), and the possible approaches to treatment (Shapiro, 1995). While many trauma survivors report the experience of loss and suffering, especially during the initial phase of trauma exposure, recent research has demonstrated that only attending to the negative aspects of the traumatic experience does not capture the full picture. Some trauma survivors paradoxically report positive outcomes as a result of their traumatic experience.

Posttraumatic growth (PTG) is the term used to describe the positive psychological change that may occur following the experience of a traumatic life event (Tedeschi & Calhoun, 1996). Among the positive changes that may be experienced through trauma are improvements in relationships, greater sense of personal strength, and a development of life philosophy and spirituality. Research suggests that some individuals may use fundamental and central aspects of who they are, such as their spiritual beliefs, to make sense of stressful and traumatic life events (Pargament, Koenig, & Perez, 2000; Pargament et al., 1990). As a result, spiritual beliefs may contribute to the cognitive, meaning-making process of PTG. The current research is designed to explore

the role of spiritual beliefs in personal growth among trauma survivors, specifically focusing on how the centrality of spiritual beliefs for individuals influences their PTG.

## POSTTRAUMATIC GROWTH

PTG is the experience of positive change that occurs as a result of the struggle with highly challenging life crises or traumatic events. PTG is manifested in a variety of ways, including an increased appreciation for life, more meaningful interpersonal relationships with others, an increased sense of personal strength and ability, transformed priorities, and a richer existential and spiritual life (Tedeschi & Calhoun, 2004).

Researchers R. Tedeschi and L. Calhoun (2004) designed a model for understanding the process of PTG that provides a critical focus on the significant cognitive processing that occurs with PTG, involving the cognitive structures that are threatened or invalidated by the traumatic events. Tedeschi and Calhoun (2004) suggested that PTG is a thoughtful process that interacts with the knowledge gained through life experience and the development of one's life narrative.

The process of PTG begins with a challenge or threat to one's understanding of the world, which is often the result of an unexpected or traumatic life event. Following the traumatic event, it is proposed that individuals engage in cognitive work in order to make sense of the event, rebuilding their assumptions and beliefs about the world (Tedeschi & Calhoun, 1996; Triplett, Tedeschi, Cann, Calhoun, & Reeve, 2012). There are two distinct ways in which individuals engage in thinking about the event, which is broadly termed rumination: intrusive rumination and deliberate rumination. Intrusive rumination occurs when individuals think about the event unintentionally. Intrusive rumination is a normal response to a significant traumatic event, but it can also be indicative of distress and unresolved issues. On the other hand, deliberate rumination is reflective of active efforts to understand the event and move towards resolution (Triplett

et al., 2012). Deliberate rumination occurs when an individual actively thinks about the event and its outcome. As individuals develop their understanding of the event, actively processing the consequences, they can then begin to engage in constructive cognitive work such as coping and finding meaning. As the individual engages in the cognitive work associated with the event, previous beliefs and perceptions evolve to allow for an adjustment to the new circumstance. As a result, there is an opportunity for growth and increased understanding of one's place in life, as opposed to other potential changes. This cognitive work facilitates the process of PTG, which can result in greater appreciation of life, increased personal strength, openness to new possibilities, relating to others, and spiritual change (Triplett et al., 2012). Individuals may report experiencing growth in one or more of these areas following trauma. The current research literature on PTG provides substantial support for the process of PTG according to the model described by Tedeschi and Calhoun (1996).

## CORE BELIEFS AND THE PROCESS OF POSTTRAUMATIC GROWTH

One particular area of interest for the current research study, in relation to the overall process of PTG, is the cognitive work associated with the challenge to an individual's fundamental beliefs about the world. Research suggests that an individual's core beliefs may provide a context in which to make sense of unexpected life events. Furthermore, substantial empirical support suggests that an individual's reports of PTG are positively correlated with the degree to which an event challenges his or her core beliefs (Cann et al., 2010).

Each individual has a broad set of fundamental assumptions regarding the self, other people, and what the future holds, among other views regarding the world and his or her place in it. These are often referred to as core beliefs, and these beliefs are what define an individual's assumptive world (Cann et al., 2010). When individuals are faced with negative, unexpected life events that disrupt their understanding of their assumptive world, it is difficult for them to adjust to and to make sense of the event. This challenge or threat to the assumptive world is part of the initial phase of PTG. In order to make sense of the event, individuals may need to examine their core beliefs, in order to re-establish a stable understanding of the world. The reevaluation of one's assumptive world can yield growth following traumatic events (Cann et al., 2010).

One example of the research on the relationship between core beliefs and PTG is a study by Thombre, Sherman, and Simonton (2010). These researchers assessed the degree to which Western Indian cancer patients engage in the processes leading to PTG. They assessed illness appraisal, meaning-based coping, reevaluation of core beliefs, and PTG as a result of the illness. The two variables "finding meaning in the illness" and

“making sense of the experience” were positively related to PTG, consistent with the idea that reconstruction of one’s assumptive world may occur following the experience of a traumatic event, leading to PTG.

Another example of research that explored the relationship between PTG, religion, and cognitive processing was conducted by Calhoun, Cann, Tedeschi, & McMillan (2000). They reported a positive relationship between event-related rumination, the cognitive processes related to one’s reflection on the traumatic event, and reports of PTG. Furthermore, the researchers found a relationship between the variable openness to religious change and PTG, suggesting that individuals who engaged in a fluid approach to religious belief also experienced positive change following their experience of traumatic events. Another study tested the relative contributions of core belief challenge, intrusive and deliberate thinking about the event, self-disclosure about the event, and proximate and distal socio-cultural factors related to the themes of PTG (Lindstrom, Cann, Calhoun, & Tedeschi, 2013). The researchers found that the challenge to core beliefs was the most significant predictor of PTG.

## SPIRITUAL BELIEFS

Individuals possess a variety of core beliefs, which are essential elements that influence their conceptualization of the world and their place in it. The current research study suggests that an individual's spiritual beliefs, defined as engagement with religious activity and relationship or experience with a higher power, may be expressions of one's core beliefs and involved in posttraumatic reactions. The posttraumatic reactions that individuals experience may result in distress and the process of PTG. Furthermore, researchers have found that many individuals perceive their spiritual belief system as an extension of their identity, to better define who or where they are within the context of all that exists in this world (Peacock, 2007). Therefore, an individual's spiritual beliefs may provide the context in which to engage in the cognitive work associated with the process of PTG. This suggests that, as individuals seek to understand or find meaning in events that challenge them, spiritual beliefs might help to facilitate the process of PTG. As a result, individuals may use their spiritual beliefs in shaping their core beliefs and adjusting to challenging life events. For the purposes of this research study, "spiritual beliefs" is a term used to capture the expansive spectrum of religious beliefs, including one's religiosity and spirituality.

### Religiosity

Religiosity has been considered to be potentially important in making sense of stressful life situations (Huber & Huber, 2012). Religiosity is broadly defined as the quality of one's faithfulness, which may be measured through various demonstrations of devotion, piety, and dedication. The term refers to the subjective importance of spiritual beliefs in a person's life, including the meaning that they assign to religion and the extent to which they engage in religious activities such as praying, attending religious services, or the subjective importance of the spiritual beliefs (Rabinowitz et al., 2010). An example

of a measure of an individual's religiosity is the number of times that he or she engages in prayer or meditation within a given period of time (Huber & Huber, 2012).

### Spirituality

As we explore religious beliefs and practice, it is important to recognize the large-scale shift among people from using the term "religious" to describing themselves as "spiritual" (Underwood, 2011). Spirituality, unlike religion, is a fluid concept in the world of faith and religious practice. The difference between these two terms was recognized in a study that was completed in 2002 in which religion was operationally defined as a "specific behavioral, social, doctrinal, and denominational characteristics because it involves a system of worship and doctrine that is shared within a group" (Underwood & Teresi, 2002). Spirituality does have a religious connotation, but it was proposed that it differs from "religion" in that it is defined as the "transcendent, addressing ultimate questions about life's meaning, with the assumption that there is more to life than what we see or fully understand" (Underwood & Teresi, 2002). An additional interpretation of "spirituality" is "a personal quest for understanding of the ultimate questions of life, about meaning, as well as the relationship with the sacred and transcendent" (Menzes & Almeida, 2010). As individuals explore and understand what it is that they believe, the flexibility of "spirituality" creates an environment in which those who are still trying to discover their belief system have a sense of belonging.

Furthermore, it has been found that many religious texts are used for spiritual guidance in coping with negative life events, as well as subsequent reactions that we might experience, such as loss, sorrow, and misery (Pargament et al., 1988). These texts provide individuals with ways to withstand negative life events and present ways that

individuals may change as a result of the events. One example of this is the role that the Christian tradition may play in encouraging believers to engage in the act of forgiving a perpetrator, serving as a potentially critical component in the process of resolution and meaning making, depending on the characteristics of the traumatic event (Schultz, Tallman, & Altmaier, 2010). The incorporation of spirituality in research adds to the traditional view of religion, allowing for the representation of those with a more fluid interpretation of their belief system. An approach that incorporates both religiosity and spiritual perspectives will allow for a more expansive observation of the ways in which an individual's beliefs influence his or her response to various events in life such as trauma.

#### The Functions of Religious and Spiritual Beliefs

There are various ways in which religious and spiritual beliefs help individuals to cope with their most stressful life experiences. Researchers and religious scholars have identified five key functions of religious or spiritual beliefs: meaning, control, comfort/spirituality, intimacy/spirituality, and life transformation (Pargament, Koenig, & Perez, 2000). The meaning function suggests that religion offers a means of understanding and interpreting the unexpected events in life. For example, an individual who was diagnosed with a terminal disease may use his or her faith to make sense of their contraction of the disease. From a Christian perspective, the individual may incorporate the omnipotence and mercy of God to conclude that, despite the illness, this diagnosis was divinely orchestrated and will ultimately be to his or her benefit. The control function of religion creates an opportunity for individuals to achieve mastery or control when they are pushed beyond their capabilities. For example, in a stressful situation such

as a standardized test, in which a student has no idea what will be asked of him or her, they may take control of the situation by leaning on their faith in prayer. The comfort function suggests that religious or spiritual beliefs are designed to reduce the stress and anxiety that is inherent in living in an unpredictable world. An individual may experience reduced stress of anxiety if he or she believes that their severely ailing parent is going to heaven when they die, or that they will pass on to the next life. To some degree, religious or spiritual beliefs provide ideas about the future, which can reduce a variety of negative emotions and increase one's comfort with the circumstances. The intimacy function of religion places emphasis on the communal aspect of beliefs, and the adoption of an identity. A religious community can provide support, encouragement, and understanding. Furthermore, this is a collective group of like-minded individuals that share a belief system. As a result, when people feel weary or their faith waivers, they may have access to a network of people who provide them with support. Lastly, life transformation refers to the ways in which religious and spiritual beliefs facilitate the maintenance of "meaning, control, comfort, intimacy, and closeness with God" (Pargament, Koenig, & Perez, 2000, p. 521). It is proposed that meaning, control, comfort, and intimacy supply the foundation and create an environment for people to grow in their faith which, in turn, may change the ways in which individuals interact with the world around them. The five key functions of religious/spiritual beliefs clarify the ways in which a spiritual belief system may influence responses to the unpredictability and volatility of life.

Spiritual beliefs have often served as a useful means of both cognitive and social support for individuals who are enduring challenging life transitions. The use of spiritual beliefs as protective factors has been associated with lower rates of depression, better

physical health, stress-related growth, reduced rates of mortality, and spiritual growth (Pargament, Koenig, & Perez, 2000; Koenig et al., 1992; Harris et al., 1995; Park & Cohen, 1993; Oxman, Freeman, & Manheimer, 1995; Pargament et al., 1990).

Furthermore, spiritual beliefs provide a secure place in which to explore the existential questions that can be raised by the experience of traumatic events. For instance, Tedeschi and Calhoun's model of PTG asserts that schemas are more easily considered when there is an accessible source of alternative perspectives on the situation, as well as dependable relationship(s) within which to explore these perspectives (Tedeschi & Calhoun, 2004). It is apparent that engagement in spiritual beliefs may have a varied impact on those who participate and additional research can help to clarify the conclusions associated with the wide-ranging outcomes.

The initial phase in the process of PTG is the experience of a challenge or threat to one's understanding of the world, which is synonymous with a threat to one's core beliefs. The current study seeks to explore the relationship between the fundamental components of one's belief system, including spiritual beliefs, and the experience of growth following a traumatic event. The central objective of the current study is to explore the degree to which spiritual beliefs, a component of an individual's collection of core beliefs, influence a person's conception of the stressful and negative experiences that he or she may have in life. It is hypothesized that, as we use our core beliefs to accommodate and adjust to these stressful life experiences, spiritual beliefs are integral factors in navigating that process for certain people.

## RELIGIOUS CENTRALITY

Religious centrality is broadly defined as the degree to which one is dedicated, obligated, or engaged to his or her beliefs (Smith, 2003). The term “religious centrality” is often used to describe the degree to which a belief is central, important, or salient within an individual’s life or identity. Religious and spiritual commitment is a critical component in developing an understanding of the role that spiritual beliefs play in an individual’s life. It is argued in this study that an individual’s religion or spirituality can be an integral component in their identity as well as in their approach to shaping their core beliefs. As researchers continue to explore the impact and influence of spiritual beliefs, it is important to consider how beliefs are practiced. In particular, religious centrality may influence one’s reflection of traumatic experiences and the meaning-making processes associated with PTG (Huber & Huber, 2012).

Several measures have been developed to assess an individual’s religious centrality, many of which are largely evaluative. A large majority of these measures encourage respondents to reflect on their feelings about the various identities that they have, particularly their religious identity. Huber and Huber (2012) provide a variety of archetypal examples of questions that reflect the ways in which measures of centrality assess religious identity. For example, one item that is considered to be a classic example of measuring religious centrality is “How important is it for you to be connected to a religious community – very much so, quite a bit, moderately, not very much, not at all” (Huber & Huber, 2012, p. 717). In this example, centrality was measured based on participation and engagement. This is just one approach to capturing a comprehensive assessment of an individual’s spiritual beliefs. Religious centrality measures allow for

researchers to observe the degree to which an individual places value on their religious identity which, in turn, could provide insight into the influence of spiritual beliefs on behavior.

Researchers have encountered two obstacles in measuring an individual's religious centrality: ambiguous reliability and measure validity (Huber & Huber, 2012). In an effort to unravel the confounding variables that challenge the reliability and validity of measures designed to quantify religious centrality, Charles Glock designed a multidimensional model of religion (Huber & Huber, 2012). Charles Glock defined five core dimensions of religion creating a framework for empirical research: intellectual, ideological, ritualistic, experiential, and consequential dimensions (Huber & Huber, 2012). The five core dimensions combine to depict an individual's thoughts, actions, emotions, perceptions, and experiences related to their religious or spiritual life. Glock's theoretical approach is designed to capture the scope of an individual's religious or spiritual life and is grounded in religious institutions and social expectations (Huber & Huber, 2012).

The Centrality of Religiosity Scale (CRS) is a widely used measure of the degree to which a person's spiritual beliefs are central characteristics to who he or she is (Huber & Huber, 2012). The CRS uses five core theoretical dimensions of religiosity: public practice, private practice, religious experience, ideology, and the intellectual dimension. These dimensions are viewed as potential methods in which individual religious constructs are developed and implemented. Furthermore, the degree of endorsement for each dimension represents the centrality of each dimension. For example, someone who scores high in public practice may value the communal and societal aspect of religious

practice. The CRS aids in the process of identifying the ways in which spiritual beliefs are enacted or experienced, allowing for a richer and more comprehensive understanding of an individual. Overall, higher scores on the CRS reflect a “more central religious construct” (Huber & Huber, 2012, p. 715).

The public practice dimension assesses how public participation in religious activities and belonging to religious communities affects religiosity. The private practice dimension draws on individual devotion to religion, through independent activities and rituals. The dimension of religious experience evaluates the societal expectation that religious individuals engage in a transcendental interaction with an “ultimate reality” (Huber & Huber, 2012). The ideology dimension involves the expectation that religious individuals have particular beliefs, in regards to the existence of a transcendent reality. Lastly, the intellectual dimension assesses the expectation that religious individuals have a degree of religious knowledge that will support their explanation of views on religious concepts (Huber & Huber, 2012).

The five dimensions of the measure create an opportunity for researchers to view religious centrality from a variety of isolated perspectives. This research study proposes that, given the separate dimensions that are observed in the measure, there may be different ways in which individuals utilize the certain dimensions of religious centrality to cope with an unexpected or traumatic event. The private practice dimension, which focuses on an individual’s devotion through meditation or prayer, provides individuals with a “counterpart” in which to explore and understand traumatic events. For example, when one prays he or she is typically engaging an additional being, who can be of support in providing clarity, peace, support, or whatever it may be that the person is

praying for. As opposed to handling the situation alone, certain spiritual beliefs assert that you can bring your troubles to another being and you can work through them together. As a result, individuals who have private practice as a central element of their identity may be more likely to understand and resolve the distress associated with traumatic events. The public practice dimension, which focuses on religious communities and ritual, creates an environment for individuals to seek support from their religious or spiritual community during a time of need. As a result, those who score high in public practice may cope with, grow from, or better manage negative life events. Religious experience, which refers to the “direct contact to an ultimate reality,” creates an atmosphere for individuals to find meaning in unexpected events through religious feelings and experiences. A common example of religious experience is the Christian experience of speaking in tongues. Speaking in tongues is a state of spiritual experience in which a person may engage with a higher power. The Bible states that “... they were all filled with the Holy Ghost, and began to speak with other tongues, as the Spirit gave them utterance” (Acts 2:4).

Contrary to the three previously mentioned dimensions, it is proposed that the following dimensions of religious centrality may create obstacles on the path to growth, for individuals who have experienced traumatic life events. The intellectual dimension of religious centrality refers to societal expectations that a certain amount of religious knowledge be present. These intellectual views and thoughts on religion or spirituality may create a rigid framework in which to understand the unpredictability of life. Furthermore, the dimension of ideology refers to the religious “beliefs, unquestioned convictions, and patterns of plausibility” (Huber & Huber, 2012, p. 714). As a result,

individuals who identify strongly with the ideological component of religious centrality may experience difficulty in resolving trauma or other negative life events. Contrarily, individuals may accept unexpected life events more readily, given their steadfast adherence to his or her religious or spiritual beliefs. While it is unclear as to how the religious centrality dimension of ideology may influence one's experiences of adjustment to life, for the purposes of this study the research will be focused on the ways in which ideology may hinder the process of growth and meaning-making.

The current study argues that religious centrality is a part of the context in the examination of one's core beliefs and may have implications for different people. It is proposed that certain dimensions of religious centrality may allow for individuals to develop new conceptions or beliefs about the world, which, in turn may create an opportunity for individuals to experience a positive change as a result of a traumatic or negative life event. Furthermore, it is proposed that spiritual beliefs are core beliefs that help shape one's response to life events and that, when religion is more central to an individual, those core beliefs will be stronger and more resilient to challenge. Some individuals may use spiritual beliefs as a social tool, as opposed to viewing it as a philosophy of life, which suggests that it is important to clarify the influence that one's religious centrality has on the overall process of PTG.

## PRESENT STUDY

The current study suggests that the centrality of one's spiritual beliefs is an integral component in the resolution, meaning-making, and acceptance of unexpected negative life events. This research study seeks to assess the roles that one's religious centrality may play in the experience of PTG. Furthermore, the current study intends to reflect the growing shift from the doctrinal, rigid set of beliefs associated with religious practice, to the increasing portion of the population that associates with a broader view and interpretation of spiritual and transcendental beliefs (Underwood, 2011). Based on a review of current trauma literature, results suggest that some trauma survivors report a change in how they relate to others, construct their assumptive world, view their personal strength, experience new possibilities, and perceive their religion or spirituality. In particular, it is proposed that specific aspects of religious centrality, presented as a proposed component of one's core beliefs, may have positive or negative relationships with PTG.

## SPECIFIC AIMS AND HYPOTHESES

A review of the literature suggests that spiritual beliefs may be interconnected to one's core beliefs, making spiritual beliefs valuable in recovering from unexpected or traumatic events. Furthermore, it is proposed that spiritual beliefs may be strong components in the facilitation of PTG. Based on the current state of the research that is being conducted with PTG and religion, the present research study proposes the following specific aims and hypotheses:

Aim 1: To assess the relationship between the experience of disruption to one's assumptive world and the endorsement of religious centrality.

Research Question 1: What is the relationship between ratings on the CBI and endorsement of religious centrality?

### Hypothesis 1

Certain factors of spiritual beliefs, as measured by the CRS, predict the disruption that an individual experiences to his or her assumptive world, as measured by the CBI.

- ❖ The religious centrality domains public practice, experience, and private practice have a strong positive relationship with reports of disruption to one's assumptive world because of the personal spiritual involvement in these interactive domains of religious centrality.
- ❖ The religious centrality domains ideology and intellect have a weak positive relationship or negative relationship with reports of disruption to one's assumptive world, given that these domains of religious centrality are rooted in a structured interpretation of religion that is of relatively less concern during the core belief disruption or challenge that produces growth.

Aim 2: To assess how the different factors of religious centrality, as presented by the five dimensions of the CRS, relate to reported experiences of PTG.

Research Question 2: Which specific factors of religious centrality best predict reports of PTG?

### Hypothesis 2

Certain factors of spiritual beliefs, as measured by the CRS, predict PTG.

- ❖ Those who report higher religious centrality, overall, will experience greater PTG because their spiritual beliefs are important to their cognitive processing of the trauma.
- ❖ The religious centrality domains public practice, experience, and private practice have a strong positive relationship with PTG because of the personal spiritual involvement in these interactive domains of religious centrality.
- ❖ The religious centrality domains Ideology and Intellect have a weak positive relationship or negative relationship with PTG, given that these domains of religious centrality are rooted in a structured interpretation of religion that doesn't allow for the disruption or challenge that produces growth.

## METHOD

For the purposes of this research study, the analyzed data were part of a larger study conducted in November of 2013. The data were collected in an effort expand the number of items on the PTGI that assess spiritual growth and to see if other factors related to PTG might serve as predictors. Among those variables were event related rumination, alexithymia, meaning in life, and resolution, in addition to the specific variables related to the present study. The current study focuses on a subset of the variables collected from the larger study.

### Participants

The present study consisted of 67 men and 148 women who were recruited from UNC Charlotte's online research study database, SONA. All of the participants were undergraduate students enrolled in introductory psychology courses at UNC Charlotte and each participant received course credit for their participation. All participation in the research study was voluntary. Participants were deemed eligible to participate in the study if they had experienced a traumatic or stressful life event within the past 6 months. The participants were given a list of potential traumatic events to select from. They had to experience at least one of the listed traumatic events in order to participate in the study. Additionally, participants were required to be at least 18 years old to be eligible for participation. If the participants did not fulfill the eligibility for participation, their data were not included for analysis.

The participants were mostly female (68.8%) and they varied in age, ranging from 17 to 55 years ( $M = 20.9$ ,  $SD = 6.16$ ). The majority of the participants identified that they were single (91.6%), with 5.6% identifying as married, 1.9% divorced, and 0.9%

separated (Table 2). Approximately sixty-two percent of the participants were Caucasian, 20.0% African American, 5.6 % Hispanic, 3.7% Asian, 1.0% Native American, and 7.9% Other (Table 3). In regards to the religious groups that the participants expressed affiliation with, the majority of the participants indicated other (45.6%), followed by Catholic (18.1%), none (16.3%), Protestant (14.9%), Muslim (2.8%), Jewish (1.9%), and Buddhist (0.5%) (Table 4). Furthermore, the overall sample indicated above average importance of religion ( $M = 5.98$ ,  $SD = 3.21$ ) and slightly above average importance of spirituality ( $M = 6.69$ ,  $SD = 3.06$ ) (Table 5). Both items were measured on a scale of 1, not at all important, to 10, extremely important.

## PROCEDURE

The study was listed on the UNCC SONA system website with a brief overview of the research study. The description included the purpose and methodology of the research, as well as contact information so that interested participants may obtain additional information related to the research study (See Appendix A).

To participate in the research study, participants needed to have experienced a traumatic event within the past six months. All of the events were coded against an existing list of traumatic events that have been identified in current research of trauma and stressful life events. Items that did not coordinate with any existing categories, they were identified as "other." Table 1 provides a breakdown of the traumatic events that the participants identified in their participation of the research study. Participants were informed that the online survey would take approximately 30 minutes to complete.

Some of the questions asked in the survey were of a sensitive nature and the researchers acknowledged that, on rare occasions, individuals could become upset during the completion of the survey questions about a traumatic event. As a precautionary measure, all participants were advised in the informed consent that they may discontinue the survey if they experienced any emotional disturbance during the completion of the survey (See Appendix B). The participants were made aware of the voluntary nature of their participation and informed that they may choose not to participate or discontinue their participation during any aspect of the survey.

The study consisted of a single group design, with all participants completing a battery of questionnaires including the Centrality of Religiosity Scale (CRS), the Core Beliefs Inventory (CBI), the PTG Inventory – Extended version (PTGI-X), and

information regarding the most negative event that had occurred within the past six months of the participant's life. Additional measures were administered to participants, but the analysis of their data was excluded based on relevance to the presented research question. The measures were presented in random orders within two groupings, broken up into measures that were directly related to the traumatic event and others that were not. The questionnaires were administered on a secure online survey site called SONA. SONA Systems software runs on cloud-based servers, where it can be set up and managed via the Internet and all communication between users and our software is encrypted using industry-standard SSL technology.

Participants who consented to take part in the survey received course credit through the SONA system. In the SONA system, 1 hour of research participation is worth 1 SONA credit and this credit is pro-rated in 15-minute increments. The duration of this online survey is approximately 30 minutes. Hence, participants who completed this survey received .50 SONA credits.

Table 1: Event used as focus

	Frequency	Percent
Serious injury to ME	12	5.6
Cause accident and serious injury to other	1	.5
Residence damaged	2	.9
Faced potential death or harm	12	5.6
Sexually assaulted	2	.9
Robbed or mugged	5	2.3
Stalked	8	3.7
Witnessed severe assault on friend/family	3	1.4
Unexpected death of close other	55	25.6
Personally experienced very serious medical problem	17	7.9
Close other very serious medical problem	83	38.6
Close other serious injury	13	6.0
Deployed to active combat zone	1	.5
Total	214	99.5
Missing System	1	.5
Total	215	100.0

## MEASURES

Below is a brief overview of the measures from the archival data that were used in the present study's analysis of one's experience of PTG, religious coping, challenges to beliefs about the world, religious centrality, and stress related to the identified traumatic event (See Appendix C-G).

The Core Beliefs Inventory (CBI) measures the degree to which a significant life event disrupts an individual's assumptive world (See Appendix D). The assumptive world is defined as a broad set of fundamental beliefs that include concepts such as how events should unfold, our individual ability to influence events, and how we believe people will behave (Cann et al., 2010). The measure uses the following introductory premise to frame and guide respondents in how to think about their responses to the items presented in the measure: "Some events that people experience are so powerful that they 'shake their world' and lead them to seriously examine core beliefs about the world, other people, themselves, and their future" (Cann et al., 2010, p. 21). The measure consists of 9 items and the participants rate each item on a 6-point scale (0=Not at all to 5=A Very Great Degree). Based on the designated scale, those who endorse higher total CBI scores have experienced greater challenges to their assumptive world. Cann et al. (2010) reported high internal consistency reliability ( $\alpha = .82$ ) and strong test-retest reliability at .69 for a sample of college students recruited from the university population who reported on different stressful life events.

The PTG Inventory-Extended (PTGI-X) is a 29-item instrument that is designed to assess the positive outcomes that individuals may report, following their experience of a traumatic life event (See Appendix E). This scale consists of five factors which include

New Possibilities, Relating to Others, Personal Strength, Spiritual Change, and Appreciation of Life (Tedeschi & Calhoun, 1996). It is important to note that this administration of the PTGI consisted of the extended version, which includes 8 additional items for the factor of spiritual growth. This was done to address the concerns of the ability of the original PTG Inventory to capture an individual's religiosity and spirituality with only 2 items. A reliability analysis of the 10 total spiritual growth items revealed a high internal consistency ( $\alpha = .95$ ) (Brightman, Gilbert, & Cann, 2014). The extended version of the PTGI (PTGI-X) is being used to more broadly measure spiritual growth within the context of PTG. The response scale of the measure ranges from 0 (I did not experience this change as a result of my crisis) to 5 (I experienced this change to a very great degree as a result of my crisis). A comprehensive review of the various administrations of the PTGI illustrates gender differences in rating the inventory. For example, results suggest that women report higher accounts of the benefits related to PTG (Vishnevsky et al., 2010). Additionally, results indicate that individuals who have experienced traumatic events report more positive change in the PTGI than individuals who have not experienced such traumatizing life events (Tedeschi & Calhoun, 1996). Research suggests that the PTGI is a reliable measure in determining how individuals reconstruct and strengthen their perceptions of self, others, and the meaning of events, following their experience of a traumatic event (Tedeschi & Calhoun, 1996). The factors of the PTGI display sufficient reliability: New Possibilities ( $\alpha = .90$ ), Relating to Others ( $\alpha = .85$ ), Personal Strength ( $\alpha = .72$ ), Appreciation of Life ( $\alpha = .67$ ), and Spiritual Change ( $\alpha = .85$ ) (Tedeschi & Calhoun, 1996).

The Centrality of Religiosity Scale (CRS) is a measure designed to assess the degree to which an individual establishes religious meanings in his or her daily activities and the ways in which it is characteristic to who that person is (See Appendix F). The measure has been used in over 100 studies and used for research purposes in 25 countries (Huber & Huber, 2012). Additionally, the CRS has been translated in over 20 different languages and developed normative data in 21 countries, deeming it appropriate for the research of belief systems that are practiced in different languages. The measure ranges from 1 (Never/ Not at all) to 5 (Very often/ Very much so/ Once a day/ Once a week), depending on the question that the participant is responding to. The CRS examines the wide-ranging concentrations of the five theoretically defined core dimensions of religiosity: public practice, private practice, religious experience, ideology, and an intellectual dimension. The five core-dimensions can be seen as conduits that frame the ways in which an individual shapes and develops his or her religious perspective. Modifications were made to increase the inclusivity and versatility of the measure to suit non-deistic and multi-deistic faiths such as Buddhism, Hinduism, and Islam (Huber & Huber, 2012). Three reliability analyses were conducted on the complete measure of the CRS, eliciting internal consistencies ranging from 0.92 to 0.96, suggesting that the items consistently measure the salience and centrality of an individual's religious or spiritual beliefs.

The Depression Anxiety Stress Scale (DASS) is a 21-item self-report measure that is designed to measure depression, anxiety, and stress, all subscales of the overall measure (See Appendix G). Each of the subscales consists of 7 items, directly associated with their assessment of the negative emotional state. The depression subscale explores

characteristics including, but not limited to, lethargy, gloom, pessimism, and self-disparagement. The anxiety subscale assesses apprehension, worry, trembling, arousal, and other characteristics associated with nervousness. Scores for each of the subscales are calculated by adding all of the relevant items together. For the purposes of this study, a total of all three subscales can be used to represent one's overall negative emotional state associated with the trauma. The stress subscale evaluates tension, irritability, inability to relax, and other factors associated with stress. The measure can be used in clinical setting to clarify one's experience of an emotional disturbance or in research settings to expand on an individual's emotional experience. The internal inconsistencies for the Depression, Anxiety, and Stress scales were 0.91, 0.84, and 0.90 respectively (Lovibond & Lovibond, 1993). The relatively high alphas for each subscale suggests that the measure, as a whole, consistently quantifies an individual's experience of emotional disturbance.

## ANALYSIS PLAN

The data included in the present study were gathered during a preliminary study to see if factors related to PTG predict equally as well across different groups. Using IBM SPSS version 22.0, descriptive statistics and frequencies were calculated for all survey measures and demographic variables (age, gender, marital status, race, religious/spiritual identification, frequency of attending religious services, ratings of the events, etc.). Table 2 through Table 5 outline the descriptive statistics for other demographic variables included in the data collected in the research study (See Appendix C). Table 6 provides the descriptive statistics for the measures used in the evaluation of the presented hypotheses.

A Pearson's  $r$  Correlation was conducted to assess the relationship between the ratings of CBI and CRS dimensions. A Pearson's  $r$  Correlation was also conducted to assess the relationship between the five dimensions of the CRS and CBI endorsement (Hypothesis 1). A standard multiple regression was conducted to examine the relationship between the dimensions public practice, private practice, and experience as strong predictors of one's experience of disruption to his or her assumptive world (Hypothesis 1). An additional Pearson's  $r$  Correlation was calculated to assess the relationship between the five dimensions of the CRS and PTGI total score (Hypothesis 2). Additionally, a set of multiple regression analyses, with the variables PTGI and CRS, were conducted to examine the hypothesis that the dimensions public practice, private practice, and experience would be strong predictors of PTG (Hypothesis 2).

Table 2: Marital status of participants

	Frequency	Percent
Single	197	91.6
Married	12	5.6
Separated	2	.9
Divorced	4	1.9
Total	215	100.0

Table 3: Race/Ethnicity of participants

	Frequency	Percent
Caucasian	133	61.9
African American	43	20.0
Asian	8	3.7
Hispanic	12	5.6
Native American	2	.9
Other	17	7.9
Total	215	100.0

Table 4: Religious group of participants

	Frequency	Percent
Protestant	32	14.9
Catholic	39	18.1
Jewish	4	1.9
Muslim	6	2.8
Buddhist	1	.5
Other	98	45.6
None	35	16.3
Total	215	100.0

Table 5: Ratings of importance of religion and spirituality

	Range	Minimum	Maximum	Mean	Std. Deviation
How important is Religion to you (Not at all 1 - 10 Extremely)	9	1	10	5.98	3.214
How important is Spirituality to you (Not at all 1 - 10 Extremely)	9	1	10	6.69	3.059

Table 6: Mean and standard deviation of select variables in measures administered

	Range	Minimum	Maximum	Mean	Std. Deviation
CBI	5.00	.00	5.00	2.5359	1.20815
PTGI-X	5.00	.00	5.00	2.0944	1.31726
DASS Total Score	57.00	.00	57.00	16.4977	11.09680
CRS: Intellect	4.00	1.00	5.00	3.0822	1.05161
CRS: Ideology	4.00	1.00	5.00	3.9504	1.14323
CRS: Private Practice	4.00	1.00	5.00	3.2930	1.27905
CRS: Experience	4.00	1.00	5.00	3.1147	1.25149
CRS: Public Practice	4.00	1.00	5.00	3.0682	1.27338
CRS: Total	4.00	1.00	5.00	3.3017	1.06898

Note: All means reported are item means except for the DASS and CRS: Total, which are the overall scale means. Possible range information: CBI (Not at all 0-5 to a very great degree), PTGI-X (Did not Experience 0 - 5 Experienced change a very great degree), DASS Total Score (Did not apply to me 0 - 3 Applied to me very much or most of the time), Centrality of Religiosity Intellect (low 1- 5 high scales vary), Centrality of Religiosity Ideology (low 1- 5 high scales vary), Centrality of Religiosity Private Practice (low 1- 5 high scales vary), Centrality of Religiosity Experience (low 1- 5 high scales vary), Centrality of Religiosity Public Practice (low 1- 5 high scales vary), Centrality of Religiosity Total (low 1- 5 high scales vary)

## RESULTS

### Inclusion Criteria

All 215 of the participants met inclusion criteria as defined as experiencing a traumatic event within the past six months and being at least 18 years of age.

### Preliminary Analysis

Prior to the interpretation of the results specifically related to the hypotheses, a review of the correlations among the individual dimensions of the CRS was conducted to assess how closely the dimensions were correlated with one another (Table 7). The results of the Pearson Correlation revealed very high correlations amongst the five factors of the CRS. This finding suggests that the five factors of religious centrality may not represent five independent measures of spiritual beliefs. As a result, it is possible that the overall collinearity of the CRS may impact the interpretation of the results.

### Hypothesis One

In the sample of 215 students, the relationships between the disruptions that an individual experiences to his or her assumptive world, following the experience of a traumatic event, and religious centrality were assessed using Pearson Correlation coefficients. The correlation analysis for Hypothesis One produced significant, but very weak, positive correlations between the total score for the CBI and the variables centrality of religiosity intellect ( $r(213) = +.15, p < .05$ ), private practice ( $r(213) = +.19, p < .01$ ), experience ( $r(213) = +.15, p < .05$ ), and total religious centrality ( $r(213) = +.16, p < .05$ ) (Table 7). The significant positive relationships indicate that higher reports of core belief disruption were associated with higher scores for the previously identified dimensions of religious centrality. Of the relationships that were revealed, endorsement of the CBI was most strongly correlated with the private practice dimension of the CRS.

There were no significant relationships between core belief disruption and ideology ( $r(213) = +.13, p > .05$ ) or public practice ( $r(213) = +.07, p > .05$ ). Overall, there was a weak, positive correlation between the disruption that individuals experienced to their assumptive worlds and intellect, private practice, experience and total religious centrality.

Additionally, a Pearson product-moment correlation coefficient was computed to assess the relationship between the disruption that an individual experiences to his or her assumptive world and the current distress that he or she experiences. There were positive correlations between the scores for the CBI and the DASS ( $r(214) = 0.27, p < .01$ ) (Table 7). There was a weak, positive correlation between the disruption that individuals experienced to their assumptive worlds and the stressfulness of the event that they reported. Slight increases in assumptive world disruption were correlated with increases in endorsement of stress indicators.

Multiple linear regression analysis was used to examine the relationship between ratings of assumptive world disruption and endorsement of the dimensions of religious centrality as potential predictors. Independent variables, entered simultaneously, were centrality of religiosity experience ( $M = 3.11, SD = 1.25$ ), public practice ( $M = 3.07, SD = 1.27$ ), private practice ( $M = 3.29, SD = 1.28$ ), ideology ( $M = 3.95, SD = 1.14$ ), and intellect ( $M = 3.08, SD = 1.05$ ). The CBI was the dependent variable. The overall model was significant  $F(5,209) = 2.47, p < .05, R = .24, adjusted R^2 = .03, SEE = 1.89$ , and the typical error in predicting core belief disruption was relatively high ( $\pm 3.78$  for the 95% confidence intervals) on a 6-point scale.

As can be seen in Table 10, the private practice dimension of religious centrality had a significant positive relationship with CBI, indicating that participants who endorsed

higher engagement in private practice also endorsed experiencing greater disruption to their assumptive world. Additionally, Table 10 shows that public practice had a significant negative relationship with CBI, suggesting that participants who reported lower public practice endorsed greater assumptive world disruption. It was found that private practice predicted CBI scores ( $\beta = .30, p < .05$ ), as did public practice ( $\beta = -0.54, p < .05$ ), both of which were small effects. The remaining dimensions of religious centrality, intellect, ideology, and experience, were not significant individual predictors of the participants' experience of core belief disruption.

Table 7: Correlations of variables of interest

	CBI	PTGI-X	DASS Total Score	CRS: Intellect	CRS: Ideology	CRS: Private Practice	CRS: Experience	CRS: Public Practice	CRS: Total
<b>CBI</b> (Not at all 0-5 to a very great degree)	---	.54**	.27**	.15*	.13	.19**	.15*	.07	.16*
<b>PTGI-X</b> (Did not Experience 0 - 5 Experienced change a very great degree)		---	.05	.21**	.14*	.23**	.22**	.18**	.22**
<b>DASS Total Score</b> (Did not apply to me 0 - 3 Applied to me very much or most of the time)			---	.06	-.12	-.05	.01	-.08	-.04
<b>CRS: Intellect</b> (low 1- 5 high scales vary)				---	.64**	.80**	.76**	.75**	.88**
<b>CRS: Ideology</b> (low 1- 5 high scales vary)					---	.76**	.70**	.67**	.84**
<b>CRS: Private Practice</b> (low 1- 5 high scales vary)						---	.80**	.79**	.93**
<b>CRS: Experience</b> (low 1- 5 high scales vary)							---	.74**	.90**
<b>CRS: Public Practice</b> (low 1- 5 high scales vary)								---	.89**
<b>CRS: Total</b> (low 1- 5 high scales vary)									---

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed).

Table 8: Hypothesis one linear regression

<i>ANOVA<sup>a</sup></i>					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	17.427	5	3.485	2.470	.034 <sup>b</sup>
Residual	294.934	209	1.411		
Total	312.362	214			

a. Dependent Variable: CBI (Not at all 0-5 to a very great degree)

b. Predictors: (Constant), CRS: Private Practice (low 1- 5 high scales vary), CRS: Ideology (low 1- 5 high scales vary), CRS: Public Practice (low 1- 5 high scales vary), CRS: Intellect (low 1- 5 high scales vary), CRS: Experience (low 1- 5 high scales vary)

Table 9: Hypothesis one model summary

<i>Model Summary</i>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.236 <sup>a</sup>	.056	.033	1.18793

a. Predictors: (Constant), CRS: Private Practice (low 1- 5 high scales vary), CRS: Ideology (low 1- 5 high scales vary), CRS: Public Practice (low 1- 5 high scales vary), CRS: Intellect (low 1- 5 high scales vary), CRS: Experience (low 1- 5 high scales vary)

Table 10: Hypothesis one linear regression coefficients

<i>Coefficients<sup>a</sup></i>					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.980	.310		6.381	.000
CRS: Intellect	.066	.142	.057	.463	.644
CRS: Ideology	-.015	.113	-.014	-.130	.896
CRS: Private Practice	.284	.138	.300	2.056	.041
CRS: Experience	.056	.119	.058	.469	.640
CRS: Public Practice	-.227	.113	-.239	-2.008	.046

a. Dependent Variable: CBI (Not at all 0-5 to a very great degree)

## Hypothesis Two

A Pearson product-moment correlation coefficient was computed to assess the relationship between the growth that an individual may experience following a traumatic event, and his or her religious centrality. There were positive correlations between the PTGI-X and the following factors measured for CRS: intellect ( $r(213) = 0.21, p < .01$ ), private practice ( $r(213) = 0.23, p < .01$ ), experience ( $r(213) = 0.22, p < .01$ ), ideology ( $r(213) = 0.14, p < .05$ ), public practice ( $r(213) = 0.18, p < .05$ ), and total religious centrality ( $r(213) = 0.22, p < .01$ ). Of the relationships that were revealed, endorsement of the PTGI-extended was most strongly correlated with total religious centrality. Overall, there was a weak, positive correlation between the PTG that individuals reported and the centrality of their spiritual beliefs. Slight increases in reports of PTG were correlated with increases in endorsement of religious centrality.

The relationship between total religious centrality and PTG was then subjected to a first-order partial correlation in order to explore the relationship, controlling for the effects of assumptive world disruption (Table 14). The partial correlation was found to be statistically significant,  $r(212) = .16, p < .05$ . When comparing the first-order correlation and the partial correlation, there is slight decrease in the correlation, but the findings are still statistically significant. The results of the partial correlation suggest that a relationship between total religious centrality and PTG exists above and beyond the effects of assumptive world disruption, but that the relationship is lessened; that is, core beliefs disruption affects both PTG and religious centrality and is closely related to the two.

Multiple linear regression analysis was used to develop a model for predicting ratings of PTG from endorsement of religious centrality, broken down by dimension. A direct method was used for the multiple regression analyses, to assess the contributions of each predicting variable to the overall model. Independent variables, entered simultaneously, were centrality of religiosity experience ( $M = 3.11$ ,  $SD = 1.25$ ), public practice ( $M = 3.07$ ,  $SD = 1.27$ ), private practice ( $M = 3.29$ ,  $SD = 1.28$ ), ideology ( $M = 3.95$ ,  $SD = 1.14$ ), intellect ( $M = 3.08$ ,  $SD = 1.05$ ). The total score of the PTGI-X was the dependent variable ( $M = 2.09$ ,  $SD = 1.32$ ). The overall model was significant and the results of the regression indicated that the combination of centrality of religiosity predictors explained approximately 6 percent of the variance ( $F(5,209) = 2.86$ ,  $p < .05$ ,  $R = .25$ ,  $SEE = 1.29$ ). The results indicate that, participants who endorsed greater religious centrality in the five dimensions also reported increases in PTG. Regression coefficients are shown in Table 13. None of the five dimensions of religious centrality emerged as individual predictors of PTG. The insignificant regression rates suggest that there is no pattern of endorsement when looking at participants' total CRS scores and total PTGI-X scores (See Table 13). It was found that the total score for religious centrality predicted growth following the experience of a traumatic event.

Table 11: Hypothesis two linear regression

<i>ANOVA<sup>a</sup></i>					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	23.795	5	4.759	2.862	.016 <sup>b</sup>
Residual	347.534	209	1.663		
Total	371.329	214			

a. Dependent Variable: PTGI-X (Did not Experience 0 - 5 Experienced change a very great degree)

b. Predictors: (Constant), CRS: Private Practice (low 1- 5 high scales vary), CRS: Ideology (low 1- 5 high scales vary), CRS: Public Practice (low 1- 5 high scales vary), CRS: Intellect (low 1- 5 high scales vary), CRS: Experience (low 1- 5 high scales vary)

Table 12: Hypothesis two linear regression model summary

<i>Model Summary</i>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.253 <sup>a</sup>	.064	.042	1.28951

a. Predictors: (Constant), CRS: Private Practice (low 1- 5 high scales vary), CRS: Ideology (low 1- 5 high scales vary), CRS: Public Practice (low 1- 5 high scales vary), CRS: Intellect (low 1- 5 high scales vary), CRS: Experience (low 1- 5 high scales vary)

Table 13: Hypothesis two linear regression coefficients

<i>Coefficients<sup>a</sup></i>					
Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	1.418	.337		4.208	.000
CRS: Intellect	.054	.154	.043	.349	.728
CRS: Ideology	-.123	.122	-.106	-1.002	.317
CRS: Experience	.127	.130	.121	.982	.327
CRS: Public Practice	-.053	.123	-.051	-.432	.666
CRS: Private Practice	.231	.150	.225	1.546	.124

a. Dependent Variable: PTGI-X (Did not Experience 0 - 5 Experienced change a very great degree)

Table 14: Partial correlation results between CRS total and PTGI-X

Control Variables		PTGI-X (Did not Experience 0 - 5 Experienced change a very great degree)	
	Centrality of Religiosity Total	Correlation	.163
	(low 1- 5 high scales vary)	Significance (2-tailed)	.017
CBI (Not at all 0-5 to a very great degree)		Df	212

## DISCUSSION

The current study investigated the influence of an individual's spiritual beliefs on his or her experience of PTG. In dismantling the process of PTG, and focusing on the restructuring of one's assumptive world, the current research hypothesized that spiritual beliefs were an extension of one's core beliefs, thus making them an important factor in making sense of, and growing from, traumatic events. As a result, the current research reviewed the relationship between religious centrality and both core beliefs and PTG.

In the initial analysis of the data, relationships emerged suggesting that certain aspects of an individual's religious centrality may be related to his or her experience of PTG. This finding implies that spiritual beliefs are potential core beliefs to investigate in the exploration of the PTG process. This finding also supports the investigation of spiritual beliefs as contributing factors to the PTG process.

In the exploration of the ability for religious centrality to predict core belief disruption, a multiple linear regression analysis was conducted which revealed a noteworthy pattern. As participants reported increases in challenges to their assumptive world, they also reported an increase in engagement in private religious practices (private practice) and a decrease in their engagement in religious services or participation in religious communities (public practice). The private practice dimension of the Centrality of Religiosity Scale focuses on an individual's intimate engagement religious practice. A potential explanation for the positive relationship that has emerged between core belief disruption and private practice is the ability to engage a spiritual "counterpart" in making sense of the unexpected life event. As opposed to accepting the results of the event, individuals who actively engage in meditation or transcendental interactions may use

these religious practices to create an environment in which to examine and understand traumatic life events. This finding suggests that, independent religious practices, such as prayer or meditation, may be integral to not only making sense of the traumatic event, but also engaging in growth as a result. The public practice dimension of the Centrality of Religiosity Scale assesses an individual's participation in religious services or engagement in religious communities. As participants reduce their engagement in interactive religious services, they report greater examination of the disruption that has occurred to their core beliefs. It is possible that frequent attendance to religious events reduces opportunities to independently examine their traumatic experience. Additionally, frequent involvement in religious events may serve as a distraction from deliberately thinking about the core belief disruption caused by the traumatic event, as opposed to engaging in the thoughtful examination that may lead to growth. While religious communities may serve as a system or support during difficult times, they may not create the ideal environment in which to examine, make sense of, or grow from traumatic life experiences. The retreat from engagement with others, as presented in the negative relationship between public practice and core belief disruption, further supports the ways in which independent religious activities may allow for individuals to examine and make sense of traumatic life events. As opposed to accepting the results of the event, individuals who actively engage in more independent religious practices may use those opportunities to examine traumatic or unexpected life events. Thus, the hypothesis that certain factors of spiritual beliefs, as measured by the CRS, predict the disruption that an individual experiences to his or her assumptive world, was supported.

Additionally, the religious centrality dimension intellect was found to be positively correlated to assumptive world disruption in the Pearson product-moment correlation. The intellect dimension, which assesses the expectation that religious individuals have a degree of religious knowledge that will support their explanation of views on religious concepts, is consistent with the framework needed to make sense of unexpected life events. The intellect dimension suggests that there is religious knowledge that aids individuals in understanding religious concepts. Religious knowledge may also be an extension of the core beliefs that individuals use to contextualize unexpected life events. For a man who is diagnosed with a terminal disease, he may use his knowledge of religious concepts to shape his understanding of the event. That person may understand that, while what he is experiencing may be difficult or painful, the end results are in his favor. This knowledge may serve as a reference or resource in making sense of the ways in which the world is changing around the individual, suggesting that this particular dimension is a factor in the examination and meaning-making process.

The current research efforts also explored the relationship between the dimensions of religious centrality and PTG, through the administration of a multiple linear regression analysis. Each dimension of religious centrality held a statistically significant relationship with the PTGI-X, suggesting that there is a relationship between an individual's spiritual beliefs and his or her experience of PTG. Despite the significant relationships, none of the individual dimensions of religious centrality emerged as significant predictors of PTG within the linear regression model. This suggests that the combination of the factors embedded in the total score for religious centrality may influence one's experience of PTG. One potential explanation for this finding is the idea that spiritual beliefs do not

operate in isolation of each other. In addition to the ritualistic practice of beliefs, there is a need for a relationship with one's higher being, as well as engagement in one's religious community. The combination of these related, but separate, factors further supports the suggestion that spiritual beliefs can be core beliefs for individuals.

Additionally, each of the dimensions, provide a different approach to contextualizing the traumatic experience, creating various opportunities for meaning-making to occur. While it is clear that spiritual beliefs are related to reports of PTG, the hypothesis that certain factors of spiritual beliefs, as measured by the CRS, predict PTG was not supported.

When controlling for core belief disruption in the relationship between religious centrality and PTG, the results revealed a statistically significant partial correlation. This significant finding suggests that, while core belief disruption is closely related to religious centrality and PTG, the two variables do have their own relationship. It is possible that core belief disruption, as a common denominator amongst PTG and religious centrality, accounts for the experience of meaning-making. It is proposed that an individual's core beliefs provide the context in which to make sense of the world around him or her. Spiritual beliefs are potential core beliefs that can help an individual to make sense of unexpected life events. Additionally, the overall process of PTG involves the cognitive processing of the traumatic life event, in an effort to find meaning. When an individual's core beliefs are disrupted, he or she is presented with an opportunity to make sense of or find meaning in the overall experience. Therefore, the relationship between core belief disruption and the variables PTG and religious centrality is well within the realm of plausibility. Having isolated the influence of assumptive world disruption, the relationship between religious centrality and PTG remains. A potential explanation for

maintenance of the relationship is the overlapping involvement of the cognitive meaning-making thought process. Given that core belief disruption does appear to influence each variable, it will be beneficial to isolate the impact that it has on each relationship, in order to establish a cleaner interpretation of the relationship between religious centrality and the experience of PTG.

As with any controlled research study, the current study has several limitations, with the most prominent being the limited diversity in the sample. The majority of the participants were single women, which limits the generalizability of the presented findings. Additionally, the majority of the participants reported that they are in their early twenties. As a result, the overall generalizability of the results may be limited, given that the sample is not reflective of the overall population.

The breakdown of religious group participation, as listed in the methods section, revealed an overwhelming endorsement of other. The survey provided individuals with the option to elect Protestant, Catholic, Jewish, Muslim, Buddhist, other, or none with no option to provide additional information. As a result, the design of the survey limited the depth of the depiction of religious affiliation. While the current literature suggests that individuals are shifting away from the doctrinal religious practice and towards a more fluid belief system, the current findings only support a significant identification of other, when asked to identify a religious group. It is possible that some of the participants are Agnostic, Atheist, or absent of religion, while maintaining a spiritual connection. The limited options presented in the survey make it difficult to obtain a clear picture of an individual's affiliation with religious groups. Future research may include an option for participants to write in a response, in order to further elucidate the meaning of other.

All of the participants in the research study received academic credit for their involvement. While the compensation was appropriate, it is possible that the participants were not intrinsically motivated or genuinely invested in their endorsement of the measures that were presented. The students are given a variety of options in completing this mandatory course credit, but it is unclear as to whether the participants were individually motivated in their participation of the study. The student population serves as an accessible and plentiful resource, but the overall composition of the sample can produce narrow generalizability.

A consistent challenge in research related to PTG is the lack of longitudinal data. As a result, many of the findings that are reported only reflect an individual's experience of growth during a snapshot in time. Ideally, researchers would gather data from several different time points in the participant's life, following the experience of the event, to better identify the process of PTG and how it may or may not change over time.

Theoretically, there is logic to support the separation of the five dimensions of the Centrality of Religiosity Scale. Empirically, there is concern as to whether these five dimensions measure each of the discretely identified aspects of spiritual beliefs. The high correlations among the five dimensions of the Centrality of Religiosity Scale suggests that each of the dimensions is tapping into something very similar. The results for this sample indicate that religious centrality was not differentiated by factors. While there is theoretical support for each of the CRS dimensions, the results suggest that individuals may not break down their spiritual beliefs into the identified dimensions of religious centrality. Given that the majority of the current sample consists of college students, it is possible that the distinctions between the dimensions of religious centrality are more

pronounced with an older population, assuming that greater differentiation of the dimensions of religious centrality may occur over time. This suggests that individuals may experience different conceptualizations of spiritual beliefs over their lifespan. For future researchers, a sample with a diverse age group, capturing individuals at different stages of life, may aid in identifying any differences related to stage of development.

While all of the results of the current study suggest small effect sizes, the findings support the notion that spiritual beliefs may help individuals find meaning in unexpected or traumatic life events. As a result, spiritual beliefs may be an integral factor in the complex process that occurs between the experience of a traumatic event and the experience of growth. Based on the results of the current study, the most prominent association appeared when exploring the relationship between religious centrality and the disruption of core beliefs. Therefore, the utilization of spiritual beliefs does not necessarily mean that an individual will experience growth. It is possible that an individual who is diagnosed with a terminal disease may find comfort through the use of his or her spiritual beliefs, but not experience growth. The idea that an individual may find meaning, without experiencing growth suggests that meaning-making and PTG are different concepts. As a result, it will be advantageous for future researchers to hone in on the various processes involved in PTG, in an effort to more accurately identify the relationship and influence of spiritual beliefs on the complete process. Future researchers may take additional efforts to isolate the influence of spiritual beliefs on the PTG process, identifying whether spiritual beliefs are a factor early on in the challenging of one's core beliefs or if they are a factor later on in the meaning-making process.

## CONCLUSION

Traditionally, in the field of trauma research, researchers have focused on loss and suffering rather than on the individual's experience of growth or residual positivity. Many trauma survivors can identify the loss and suffering associated with their traumatic event, but recent research suggests that there is, potentially, a positive counterpart that may aid in the promotion of growth and understanding for the trauma survivor. There are still a host of questions related to the identification of what influences how we resolve and arrive to positive change. As strides are made in research, greater focus can be placed on where, in the process of PTG, spiritual beliefs make an influence. While we have identified their presence, the questions remains: Where do spiritual beliefs fit? Furthermore, a deeper understanding of the ways in which religious and spiritual beliefs are utilized at an individual level is warranted, in order to develop a more complete understanding, and potential real-world application, of the relationship between religious or spiritual beliefs and adjustment to adverse life events.

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## APPENDIX A: SONA SCRIPT FOR INTRODUCING THESIS STUDY

**Abstract:** This research study seeks to assess the role that religious centrality may play in one's experience of stressful life events.

**Description:** Each participant in the study will be invited to complete an online survey that consists of a few select surveys that are directed towards identifying religious centrality, perceptions of growth, and how the two relate to one's experience of stressful life events. This is an opportunity to collect data to assess the potential similarities and differences that exist in practice among people of different religious backgrounds, and to identify ways in which to incorporate an individual's religion and spirituality to facilitate growth following a stressful life event. People differ in many ways and your unique perspective will contribute greatly to developing an understanding of the impact of a person's spirituality and religion. \*Please don't complete the survey if you attended the It's Not What You Practice But How You Practice workshop on September 22nd that was hosted by the Multicultural Resource Center.

**Eligibility Requirements:** Participants must have experienced a stressful life event within the past year and the need to be at least 18 years of age.

## APPENDIX B: INFORMED CONSENT FORM

UNC Charlotte

### Understanding Stressful Life Events

This study involves a web-based survey designed to provide information to help us understand how people think about stressful events and how they are affected by their experiences. The study is being conducted by a team of psychologists (Dr. Lawrence Calhoun, Dr. Amy Canevello, Dr. Arnie Cann, and Dr. Richard Tedeschi) from the Psychology Department at UNC Charlotte and it has been approved by the University Institutional Review Board (July 2013). No deception is involved, and the study involves no more than minimal risk to participants (i.e., the level of risk encountered in daily life). While there may be no direct benefits to you for participation, the information obtained could help to better understand how people are affected by stressful

You must be at least 18 years of age to be eligible to participate in this study and you must have experienced a highly stressful life event within the past 6 months. There are no other criteria for participation. You will be asked to provide information about your age, gender, and religious beliefs, so that we will know the characteristics of our sample. None of the information required can be used to identify you individually. You will be asked to provide a brief description of the event you experienced and to complete a number of measures that will assess your experiences with a stressful event and your reactions in the aftermath of the event. These measures will ask about your thoughts about the event, how you might have been changed by the event, and your current psychological state. We are hoping to collect information from 150 – 200 participants.

All responses will be completely anonymous. You will not be asked for any identifying information, and the researchers will not be aware of your identity. Although the research is being conducted on a password protected site, you should be aware that the experiment is not being run from a "secure" https server of the kind typically used to handle credit card transactions, so there is a very small possibility that responses could be viewed by unauthorized third parties (e.g., computer hackers).

You are a volunteer. The decision to participate in this research is completely up to you. If you decide to be in the study, you may stop at any time. You will not be treated any differently if you decide not to participate in the study or if you stop once you have started. The research should take less than 30 minutes to complete, so you will receive ½ credit toward your research option. Although unlikely, participating in this research, or any research, may involve risks that are currently unforeseeable. If you experience any distress as a result of the procedures used you should discontinue participation.

If you have any questions after the research is completed, or if you want information about the results, contact the researchers through their email address: [posttraumaticgrowth@uncc.edu](mailto:posttraumaticgrowth@uncc.edu). UNC Charlotte wants to insure that you are treated in a fair and respectful manner. If you have further questions or concerns about your rights as a participant in this study, contact the Compliance Office at UNC Charlotte (704) 687-3309.

I have read the information in this consent form. I have been provided with contact information so that I can ask questions about this study. I am at least 18 years of age and I agree to participate in this research. By clicking on the button below, I affirm my agreement.



For the remainder of the questions you should focus on a single event or experience.

Please identify the most negative event you have experienced in the last year. Briefly describe the event below.

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As you think about your event, how would you rate it?

*Please indicate on scale below.*

Extremely Negative 0 1 2 3 4 Extremely Positive

Some events are unexpected, we can anticipate that they might happen. Other events are unexpected, we could not have seen them coming. As you think about your event, how would you characterize it?

*Please indicate on scale below.*

Totally Unexpected 0 1 2 3 4 Totally Expected

## APPENDIX D: CORE BELIEFS INVENTORY

Some events that people experience are so powerful that they 'shake their world' and lead them to seriously examine core beliefs about the world, other people, themselves, and their future.

Please reflect upon the event about which you are reporting and indicate the extent to which it led you to seriously examine the following core beliefs.

(Please place an 'X' in the appropriate box)

Because of the event, I seriously examined the degree to which I believe things that happen to people are fair.

0	1	2	3	4	5
Not at all.	To a very small degree.	To a small degree.	To a moderate degree.	To a great degree.	To a very great degree.

Because of the event, I seriously examined the degree to which I believe things that happen to people are controllable.

0	1	2	3	4	5
Not at all.	To a very small degree.	To a small degree.	To a moderate degree.	To a great degree.	To a very great degree.

Because of the event, I seriously examined my assumptions concerning why other people think and behave the way that they

0	1	2	3	4	5
Not at all.	To a very small degree.	To a small degree.	To a moderate degree.	To a great degree.	To a very great degree.

Because of the event, I seriously examined my beliefs about my relationships with other people.

0	1	2	3	4	5
Not at all.	To a very small degree.	To a small degree.	To a moderate degree.	To a great degree.	To a very great degree.

Because of the event, I seriously examined my beliefs about my own abilities, strengths and weaknesses.

0	1	2	3	4	5
Not at all.	To a very small degree.	To a small degree.	To a moderate degree.	To a great degree.	To a very great degree.

Because of the event, I seriously examined my beliefs about my expectations for my future.

0	1	2	3	4	5
Not at all.	To a very small degree.	To a small degree.	To a moderate degree.	To a great degree.	To a very great degree.

Because of the event, I seriously examined my beliefs about the meaning of my life.

0	1	2	3	4	5
Not at all.	To a very small degree.	To a small degree.	To a moderate degree.	To a great degree.	To a very great degree.

Because of the event, I seriously examined my spiritual or religious beliefs.

0	1	2	3	4	5
Not at all.	To a very small degree.	To a small degree.	To a moderate degree.	To a great degree.	To a very great degree.

Because of the event, I seriously examined my beliefs about my own value or worth as a person.

0	1	2	3	4	5
Not at all.	To a very small degree.	To a small degree.	To a moderate degree.	To a great degree.	To a very great degree.

## APPENDIX E: POSTTRAUMATIC GROWTH INVENTORY – EXTENDED

Indicate for each of the statements below the degree to which this change occurred in your life as a result of your crisis or trauma, using the following scale.

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

I changed my priorities about what is important in life. \_\_\_\_\_

I have a greater appreciation for the value of my own life. \_\_\_\_\_

I feel more spiritually aware. \_\_\_\_\_

I developed new interests. \_\_\_\_\_

I have a greater feeling of self-reliance. \_\_\_\_\_

I have a better understanding of spiritual matters. \_\_\_\_\_

I more clearly see that I can count on people in times of trouble. \_\_\_\_\_

I established a new path for my life. \_\_\_\_\_

I have greater clarity about life's meaning. \_\_\_\_\_

I have a greater sense of closeness with others. \_\_\_\_\_

I am more willing to express my emotions. \_\_\_\_\_

I feel more connected with all of existence. \_\_\_\_\_

I know better that I can handle difficulties. \_\_\_\_\_

I am able to do better things with my life. \_\_\_\_\_

I have a greater sense that I am part of the fabric of life. \_\_\_\_\_

I am better able to accept the way things work out. \_\_\_\_\_

I can better appreciate each day. \_\_\_\_\_

- I feel better able to face questions about life and death. \_\_\_\_\_
- New opportunities are available which wouldn't have been otherwise. \_\_\_\_\_
- I have more compassion for others. \_\_\_\_\_
- I have a deeper sense of connection with the world. \_\_\_\_\_
- I put more effort into my relationships. \_\_\_\_\_
- I am more likely to try to change things which need changing. \_\_\_\_\_
- I have a stronger religious faith. \_\_\_\_\_
- I discovered that I'm stronger than I thought I was. \_\_\_\_\_
- I have a better grasp of what life is all about. \_\_\_\_\_
- I learned a great deal about how wonderful people are. \_\_\_\_\_
- I better accept needing others. \_\_\_\_\_
- I have a greater sense of harmony with the world. \_\_\_\_\_

## APPENDIX F: CENTRALITY OF RELIGIOSITY SCALE

The list that follows includes items you may or may not experience. Please consider how often you directly have this experience, and try to disregard whether you feel you should or should not have these experiences. A number of items use the word 'God.' If this word is not a comfortable one for you, please substitute another word that calls to mind the divine or holy for you.

(Please place an 'X' in the appropriate box)

How often do you

	Never	Rarely	Occasionally	Often	Very Often
Think about religious issues?					
Experience situations in which you have the feeling that God or something divine intervenes in your life or that you are in one with all?					
Experience situations in which you have the feeling that God or something divine wants to communicate or to reveal something to you?/ Experience situations in which you have the feeling that you are touched by a divine power?					
Keep yourself informed about religious questions through radio, television, internet, newspapers, or books?					
Experience situations in which you have the feeling that God or something divine is present?					

How often do you

	Never	Less often	Year	Times a month	Once a week
Take part in religious services?					

How often do you

	Never	A few times a year	Once a week	More than once a week	Once a day
Pray or meditate?					
Pray spontaneously when inspired by daily situations?/ Try to connect to the divine spontaneously when inspired by daily situations?					

How important is

	Not at all	Not very much	Moderately	Quite a bit	Very much so
It to take part in religious services?					
Personal prayer or mediation for you?					
It for you to be connected to a religious community?					

To what extent

	Not at all	Not very much	Moderately	Quite a bit	Very much so
Do you believe that God or something divine exists?					
Do you believe in an afterlife - e.g. immortality of the soul, resurrection of the dead or reincarnation?					
How interested are you in learning more about religious topics?					
In your opinion, how probable is it that a higher power really exists?					

## APPENDIX G: THE DEPRESSION, ANXIETY AND STRESS SCALE

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 - Did not apply to me at all - NEVER

1 - Applied to me to some degree, or some of the time - SOMETIMES

2 - Applied to me to a considerable degree, or a good part of time - OFTEN

3 - Applied to me very much, or most of the time - ALMOST ALWAYS

1. I found it hard to wind down
2. I was aware of dryness of my mouth
3. I couldn't seem to experience any positive feeling at all
4. I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)
5. I found it difficult to work up the initiative to do things
6. I tended to over-react to situations
7. I experienced trembling (eg, in the hands)
8. I felt that I was using a lot of nervous energy
9. I was worried about situations in which I might panic and make a fool of myself
10. I felt that I had nothing to look forward to
11. I found myself getting agitated
12. I found it difficult to relax
13. I felt down-hearted and blue
14. I was intolerant of anything that kept me from getting on with what I was doing
15. I felt I was close to panic
16. I was unable to become enthusiastic about anything
17. I felt I wasn't worth much as a person
18. I felt that I was rather touchy
19. I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)
20. I felt scared without any good reason
21. I felt that life was meaningless