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Event Centrality and Bereavement Symptomatology: The Moderating Role of Meaning Made

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EVENT CENTRALITY AND BEREAVEMENT SYMPTOMATOLOGY: THE MODERATING ROLE OF MEANING MADE

by

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Abstract

The centrality of a loss to a bereaved individual's identity is associated with greater symptomatology, whereas meaning made of a loss is associated with positive outcomes. This paper examines meaning made as a moderator of the relationship between event centrality and symptomatology. Our sample consisted of 204 bereaved undergraduate university students. Centrality was assessed using the Centrality of Events Scale (CES), meaning made was assessed using the Integration of Stressful Life Experiences Scale (ISLES), and symptomatology was assessed using the PTSD Checklist-Civilian (PCL-C) and Inventory of Complicated Grief-Revised (ICG-R). Meaning made had a significant moderating effect on the relationship between centrality and both measures of symptomatology. At lower levels of meaning made, centrality had a strong and positive association with symptomatology; at higher levels of meaning made, this association became weaker. These results suggest that meaning made is key to understanding how centrality affects bereavement outcomes.

Keywords: Centrality of Event, Meaning Made, Posttraumatic Stress Disorder, Complicated Grief, Bereavement

Table of Contents

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The death of a loved one is a stressful life event with myriad potential psychological and physical sequelae. Widely validated potential outcomes of a problematic bereavement process include posttraumatic stress disorder, depression and anxiety disorders, suicidality, and complicated grief (Stroebe, Schut, & Stroebe, 2007). Many mechanisms have been implicated in the determination of whether an individual will follow a path of normal bereavement or suffer more severe and prolonged symptomatology. From a constructivist standpoint, the way in which an individual construes or "makes sense" of the loss of a loved one and life afterward is directly related to adjustment outcomes (Gillies & Neimeyer, 2006). Key to an understanding of the way a loss event is viewed are the concepts of event centrality and meaning made. Event centrality is the degree to which people see a stressful life event as central to their life narrative or identity (Berntsen & Rubin, 2006). If an individual sees a loss event as key to his or her identity, it can serve as a reference point for subsequent experiences and memories of past events, potentially leading to greater distress, symptomatology, and other adverse outcomes (Boelen, 2012). "Meaning made" of a loss is the extent to which an individual has made progress in integrating the loss event by "reaffirming or reformulating his or her prior system of meanings" (Gillies, Neimeyer, & Milman, 2015). The success or failure of this meaning making process has been shown to have a powerful impact on the expression of symptomatology (Gillies & Neimeyer, 2006; Park, 2010). This paper will examine the validity of a proposed interaction between centrality and meaning made as it pertains to bereavement-related symptomatology.

Complicated Grief

For many individuals, a loss results in a period of distress followed by a return to normal functioning (Bonanno, 2004). Some individuals, however, experience greater distress and

considerable functional impairment similar to well-known disturbances such as depressive disorders and posttraumatic stress disorder. This phenomenon has been recognized and studied from very early on in psychological research and practice (Freud, 1917/1953). However, aside from abnormal duration or intensity of distress, many researchers have proposed that problematic bereavement carries with it unique symptoms that necessitate its consideration as a separate disorder, known as Prolonged Grief Disorder (PGD) (Prigerson et al., 2009) or Complicated Grief (CG) (Shear et al., 2011). Conceptually, the major distinguishing factor between CG and similar disorders such as depression or PTSD is distress brought on specifically by separation from the decedent, resulting in yearning and preoccupation with the loss (Lichtenthal, Cruess, & Prigerson, 2004; Prigerson & Jacobs, 2001; Prigerson, Vanderwerker, & Maciejewski, 2008). Research on CG indicates that approximately 10% of individuals suffering a loss will experience this heightened level of difficulty (Lichtenthal et al., 2004; Prigerson & Maciejewski, 2006). The symptoms of CG identified by Prigerson and colleagues (2009) include a preoccupying yearning for the deceased and at least five of the following symptoms: emotional numbness, feeling stunned, or sense of meaninglessness in life; mistrust; bitterness over the loss; difficulty in accepting the loss; confusion of identity; avoidance of the reality of the loss; and difficulty moving on with life. These symptoms must be experienced daily or result in functional impairment, and be present at high levels at least six months from the time of loss. CG's symptom structure has been verified by testing of diagnostic algorithms and factor analysis, and has been validated against outcomes associated with problematic bereavement, including major depressive disorder, posttraumatic stress disorder, generalized anxiety disorder, suicidal ideation, functional disability, and poor quality of life (Boelen, van de Schoot, van den Hout, de Keijser, & van den Bout, 2010; Prigerson et al, 2009). Additionally, CG has proved predictive of adverse

bereavement outcomes above and beyond those accounted for by these other bereavement-related disorders (Prigerson et al, 2009).

Posttraumatic Stress Disorder

Posttraumatic stress disorder (PTSD) has also been associated with problematic bereavement, particularly when the loss event was unexpected, sudden, or traumatic (Breslau et al, 1998; Zisook, Chentsova-Dutton, & Shuchter, 1998). For bereavement due to violent death, CG and PTSD show high rates of comorbidity (McDevitt-Murphy, Neimeyer, Burke, & Williams, 2011). However, it is important to assess both disorders in bereaved samples, as the rate of change for the severity of each disorder seems to differ post-loss (Williams, Burke, McDevitt-Murphy, & Neimeyer, 2012). Additionally, CG seems to be more highly associated with impaired social functioning, whereas PTSD associates more strongly with emotional role limitations (Williams et al., 2012). The current conceptualization of PTSD consists of four different symptom clusters: intrusion symptoms (e.g. recurrent memories, dreams, or dissociative reactions); avoidance of stimuli associated with the event; negative alterations in cognition and mood; and alterations in arousal and activity level (American Psychiatric Association, 2013). A precondition according to the American Psychological Association in the Fifth Edition of the Diagnostic and Statistical Manual of Mental Disorders for a diagnosis of PTSD is a specific type of "Criterion A" trauma, defined in the context of bereavement as a loss in which either (1) the individual witnessed the event causing the death, (2) the family member or friend's death was "violent or accidental," or (3) the individual has experienced "repeated or extreme exposure to aversive details of the traumatic event" (American Psychiatric Association, 2013, p. 271). However, research on spousal bereavement has shown that the intensity of PTSD symptoms can be just as high for bereavement in general as for individuals with a "Criterion A" trauma, even

when the death does not meet these specific trauma event criteria (Zisook et al., 1998). The intensity and prevalence of PTSD symptomatology associated with bereavement shows that it is an important phenomenon to take into consideration when assessing bereavement outcomes.

Centrality of Event

The centrality of an event refers to the degree to which it has become a central part of an individual's identity. For individuals who have undergone a stressful life event, the centrality of the event has been proven to be closely associated with the presence and severity of many forms of resultant psychopathology. Stressful event centrality showed a strong positive association with PTSD, depressive disorders, and dissociation in a college student population (Berntsen & Rubin, 2007). Boelen (2012) found the same association of centrality with PTSD, PGD, and depression in a bereaved sample, even when controlling for attachment style, relationship to the deceased, cause of death, time since loss, unexpectedness of the death, and presence of the bereaved individual at the time of the death. Centrality at baseline was also highly associated with the level of symptomatology one year later after controlling for baseline symptom levels in the same sample. In predicting PTSD severity, degree of event centrality has been shown to be more highly predictive of whether or not PTSD severity will reach a level of diagnostic consideration than the presence of a Criterion A trauma as defined by DSM-IV-TR (Berntsen & Rubin, 2006). These findings indicate that bereavement is particularly conducive to a constructivist understanding; symptomatology appears to be very much driven by an individual's retrospective construal, present understandings, and anticipated future role of the loss or trauma as central to one's identity.

Meaning Making

In his book *Man's Search for Meaning*, Victor Frankl (1962) states that it is the desire of humans to create a meaningful, purposive existence that drives both distress and adaptation in response to stressful events, regardless of how traumatic the event was or how seemingly hopeless life may be in its wake. In keeping with Frankl's emphasis, the meaning reconstruction model of bereavement states that "a central process in grieving is the attempt to reaffirm or reconstruct a world of meaning that has been challenged by the loss" (Neimeyer, 2016, p. 2). This model integrates a wide range of loss and coping frameworks and conceptualizations of meaning making, stating that their common element is the effort to "find, create, or reconstruct meaning" (Gillies & Neimeyer, 2006, p. 36). The processes by which this reconstruction occurs include sense making, benefit finding, and identity change (Gillies & Neimeyer, 2006). The end product of these processes working in concert, termed meaning made, allows the initially discrepant "micro-narrative" of the loss event to be reconciled with the bereaved individual's overall "self-narrative" (Neimeyer, 2004). Meaning made has been found to be associated with better bereavement outcomes across a broad spectrum of symptoms and populations (Neimeyer, 2016). Struggles with making sense of a loss predict the intensity of both normal and complicated grief over and above factors such as mode of death (natural versus violent) and time since the loss in parents who have lost a child (Keesee, Currier, & Neimeyer, 2008; Lichtenthal, Neimeyer, Currier, Roberts, & Jordan, 2013). Meaning made, sense making, and benefit finding have been shown to be predictive of complicated grief symptoms, functional health, and general distress for young adults in the two years following a loss (Currier, Holland, & Neimeyer, 2006; Holland, Currier, & Neimeyer, 2014; Holland & Neimeyer, 2010). Changes in extent of meaning made of a loss have shown an association with changes in levels of complicated grief, health

outcomes, and general distress over a three-month period for bereaved young adults (Holland, Currier, Coleman, & Neimeyer, 2010). Meaning made is also associated with lower levels of PTSD over and above peritraumatic factors and time since index trauma in veterans (Currier, Holland, Chisty, & Allen, 2011) and bereaved parents (Murphy, Johnson, & Lohan, 2003). Further, more traumatic modes of death seem to impact bereavement only insofar as they create a struggle for making meaning of a loss; difficulty in sense making consistently accounts for almost all of the difference in complicated grief between mourners of a violent death and mourners of losses due to natural causes (Currier et al, 2006; Rozalski, Holland & Neimeyer, 2016).

Interactions between Centrality and Meaning Made

The association between event centrality and meaning made has been investigated to some extent. Centrality and meaning made have been shown to be negatively correlated in a sample of college students who have undergone a wide range of losses and other stressful life events. In the same sample, centrality was associated with more prolonged grief symptoms and meaning made was associated with more adaptive responses (Holland et al, 2010). The possibility of an interaction effect between centrality and meaning made on symptomatology, however, has to our knowledge not yet been investigated.

Theoretically, if a loss is central to a person's identity then the magnitude of the effect of the loss is increased; the stakes are higher, as the event forms a reference point for how the world is experienced (Boelen, 2012). The disruption of meaning systems produced by a central loss event creates a discrepancy, a need for resolution (Janoff-Bulman, 1989). If meaning-making efforts in the wake of a highly central loss are unsuccessful, the dissonance between situational and global meaning will induce greater distress, avoidance, intrusions, and other

psychopathology in the individual (Hogan & Schmidt, 2002; Janoff-Bulman, 1989; Neimeyer, 2016; Park, 2010). This study will examine the validity of a proposed interaction between centrality and meaning made on post-loss symptomatology. We hypothesized that the magnitude of centrality's effect on symptomatology would be moderated by the relative success or failure of the meaning making process. We predicted that at lower levels of meaning made, event centrality would have a high and positive association with bereavement symptomatology, whereas at higher levels of meaning made, this association would become less robust.

Method

Participants

The sample was recruited from a population of undergraduate college students at large university in the southeastern United States, as described below. The sample included a total of 204 students, the majority of whom were women (n = 152, 74.5%). The sample was composed of diverse racial and ethnic backgrounds; (n = 111, 54.4% White, n = 80, 39.2% Black; n = 15, 7.4% Hispanic or Latino; n = 14, 6.8% other). Ages within the sample ranged from 18 to 56 years old (M = 21.7, SD = 6.6). Participants had experienced losses from a wide range of causes, including natural, anticipated causes (n= 83, 40.7%), sudden or accidental death (n = 75, 36.7%), suicide (n = 18, 8.8%) and homicide (n = 13, 6.4%). Time since the loss ranged from 1 week to nearly 2 years (M = 54.2, SD = 35.0). See Table 1 (Appendix A) for more a more extensive review of demographic and loss-related characteristics of the sample.

Procedure

Following institutional review and approval of the project, participants were recruited via fliers, online notices, and in-person announcements in classes. Participants were offered course credit in return for their participation. Once recruited, the participants entered an online survey

module and completed an informed consent form. Next, participants were asked if they had lost a loved one within the last two years. If participants answered "yes," they were asked to complete a series of surveys concerning demographic characteristics, the circumstances surrounding the loss, their construal of the loss event, and bereavement-related symptomatology. Throughout the sequence of surveys, validation questions were included to verify that participants were completing the measures attentively. Following review of the responses obtained, participants were ruled out based on (1) whether or not they had lost a loved one within the last two years, (2) whether or not they had answered the validation questions correctly, and (3) completion of the surveys relevant to the study, yielding the total of 204 participants used for the analyses conducted.

Measures

Centrality of Events Scale (CES). The CES measures the extent to which an event is central to a person's identity and life story. Participants rate seven statements about the centrality of the loss event ("This event has become a reference point for the way I understand myself and the world.") on a 5-point Likert scale (1 = *totally disagree*; 5 = *totally agree*). The reported inter-item reliability for the CES is $\alpha = .88$ (Berntsen & Rubin, 2006). The CES has demonstrated discriminant validity from other factors posited to predict problematic bereavement, including cause of loss, time since loss, depression (Boelen, 2009), and whether or not the loss is considered a "Criterion A Trauma" according to DSM-IV-TR (Berntsen & Rubin, 2006). Convergent validity for the CES has been established in its high correlation with disorders that include preoccupation with thoughts of the deceased or the stressful event, such as CG and PTSD (Boals & Schuettler, 2011; Holland et al., 2010; Schuettler & Boals, 2011). This relationship with symptomatology holds true even when controlling for the aforesaid peri-

traumatic factors (Boelen, 2009; Berntsen & Rubin, 2006). The internal consistency of the CES in the present study's sample was excellent (α = .94).

Integration of Stressful Life Experiences Scale (ISLES). The ISLES measures the extent to which an individual has made meaning of a stressful life event, defined as the degree to which an individual has "adaptively integrated a stressful life experience into his or her life narrative" (Holland et al., 2010, p. 344). The ISLES assesses the extent of meaning made along two subscales: Comprehensibility and Footing in the World. Comprehensibility addresses the extent to which the stressful event makes sense to the individual, and Footing in the World addresses the extent to which the individual feels a "sense of being secure or grounded in a meaningful world" (Neimeyer, 2016, p. 4). These two subscales operationalize the aforementioned meaning reconstruction framework, as they assess how successfully an individual has made sense of the event micro-narrative (Comprehensibility) and restored a sense of stable identity and found benefit in life, forming a coherent and adaptive self-narrative (Footing in the World). Participants answer questions about their integration of the event (e.g. "I don't understand myself any more since this loss.") by responding to 16 questions on a 5-point Likert scale (1 = *strongly agree,* 5 = *strongly disagree*) (Holland et al., 2010). The reported inter-item reliability for the ISLES is excellent (α = .92). The ISLES has displayed convergent validity in its strong positive association with scores on the World Assumptions Scale (WAS; Janoff-Bulman, 1989) and perceived general health, as well as its strong negative association with psychological distress, complicated grief symptomatology (Holland et al., 2010), PTSD, and depression (Lancaster & Carlson, 2015). The ISLES has also shown discriminant validity against the similar but related construct of posttraumatic growth (Lancaster & Carlson, 2015). The Comprehensibility subscale was found to have construct validity in its sensitivity to whether

or not individuals were bereaved due to violent or traumatic losses or more natural expected losses (Holland et al., 2010). The ISLES has also displayed incremental validity in predicting PTSD and depression over and above measures of posttraumatic growth (Lancaster & Carlson, 2015). The internal consistency of the ISLES in the present study's sample was excellent (α = .95).

Inventory of Complicated Grief-Revised (ICG-R). The ICG-R assesses complicated grief symptomatology. The 31-item survey requires ratings of symptoms of complicated grief (e.g. "Ever since [the deceased] died I feel like I have lost the ability to care about other people or I feel distant from people I care about") experienced within the past month on a 5-point Likert scale (1 = *never*, 5 = *always*). The ICG-R has displayed convergent validity and impressive sensitivity, achieving comparable diagnostic utility to in-person interviews used to determine the presence of PGD (Barry, Kasl, & Prigerson, 2002) and correlating highly with other validated measures of grief (Keesee et al, 2008; Laurie & Neimeyer, 2008). Additionally, the ICG-R has displayed discriminant validity from similar but distinct bereveavement outcomes of major depressive disorder and PTSD, as well as incremental validity in predicting bereavement-related dysfunction over and above measures of these disorders (Prigerson et al., 2009). The reported inter-item reliability of the ICG-R in previous research has been high (α > .90) (Prigerson et al, 2009). The internal consistency of the scale for our sample on these items was excellent (α = .96).

PTSD Checklist – Civilian (PCL-C). The PCL-C is a 17-item self-report measure that assesses the presence and intensity of PTSD. Participants respond to questions about how much they had been bothered by each symptom within the past month in response to a stressful experience (e.g. "repeated, disturbing memories, thoughts or images of a stressful experience

from the past.") on a 5-point Likert scale (*Not at all* = 1, *Extremely* = 5). For the purposes of our study, we modified the wording of the questions, placing them in reference to the loss identified by the participant instead of a "stressful experience." The PCL has shown convergent validity by demonstrating comparable diagnostic utility to the Clinician-Administered PTSD Scale (CAPS; Blake et al, 1995) (Blanchard, Jones-Alexander, Buckley, & Foneris, 1996; Ruggiero, Del Ben, Scotti, & Rabalais, 2003). The PCL has also demonstrated discriminant validity from well-validated measures of similar but distinct disorders, including major depressive disorder and generalized anxiety disorder (Ruggiero et al., 2003). The internal consistency of the scale for our sample was excellent ($\alpha = .95$).

Plan of Analysis

All analyses were conducted in IBM SPSS 21, and data were screened in accordance with guidelines set by Tabachnick and Fidell (2001). No missing values were found for the measures' items. An analysis of skewness and kurtosis revealed that no transformations were required for any of the measures used. Independent variable scores were mean-centered, in order to avoid confounding problems of multicollinearity that arise in detecting interactions of continuous independent variables. To detect the presence of an interaction between the independent variable (X) and the moderator (M) in predicting the dependent variable (Y), a multiple regression was conducted with X, M and the product of X and M scores (interaction term) entered as independent variables (Tabachnick & Fidell, 2001). If the interaction term was found to have a significant effect, indicating the presence of moderation, a simple slopes analysis was conducted to further examine the nature of the moderation. In order to preserve statistical power by using all cases, the Aiken and West (1991) guidelines were used to test the size and significance of the effect of X scores on Y scores at a conditional value of M. To test the effect of X on Y at values

of M one standard deviation above the mean, a new variable (M_H) was created by subtracting the conditional value of interest (*M* of M + 1 *SD*) from the raw M score for each case. The product of M_H and X was then computed for each case (M_H•X). Finally, Y was regressed onto the independent variables: X, M_H, and M_H•X. The effect size of X on Y for the conditional value of M was derived from the partial *r* of X, and the slope of the relationship and its significance were determined from the non-standardized *b* and corresponding *p*-value of X in the regression (Preacher, Curran, & Bauer, 2004). The same process was repeated to test the effect of X on Y at the conditional value of 1 standard deviation below the mean of M.

Results

Meaning made was examined as a moderator of the relationship between event centrality and complicated grief severity. Meaning made, event centrality, and their product were entered as predictors of complicated grief severity in a multiple regression. See Table 2 (Appendix A) for regression results.

The model was significant, and showed main effects for both meaning made and centrality. The product variable of meaning made and event centrality was also significant, indicating the presence of an interaction. A simple slopes analysis was then conducted. At one standard deviation below the mean of the moderator, event centrality significantly predicted complicated grief, $b = 1.77$, $t\ (200) = 10.52$, $p < .001$, partial $r = .60$. The effect size of this relationship was large (Rosenthal, Rosnow, & Rubin, 2000). At one standard deviation above the mean of the moderator, event centrality did not significantly predict complicated grief, $b = .35$, $t\ (200) = 1.76$, *ns*, partial $r = .12$. The unstandardized simple slopes for centrality and complicated grief one standard deviation below the mean of meaning made and one standard deviation above the mean are displayed graphically in Figure 1 (Appendix B).

Meaning made was also examined as a moderator of the relationship between event centrality and PTSD severity. Meaning made, event centrality, and their product were entered as predictors of PTSD in a multiple regression. See Table 3 (Appendix A) for regression results.

Once again, the model was significant, and showed main effects for both meaning made and centrality. The product variable of meaning made and centrality was also significant, indicating the presence of an interaction. A simple slopes analysis was then conducted. At one standard deviation below the mean of the moderator, event centrality significantly predicted PTSD, $b = 1.46$, $t\ (200) = 12.25$, $p < .001$, partial $r = .66$. Again, the effect size of this relationship was large (Rosenthal et al, 2000). The same regression was repeated with the transformed conditional variable for 1 standard deviation above the mean of meaning made. At one standard deviation above the mean of the moderator, event centrality still significantly predicted PTSD, $b = .300$, $t\ (200) = 2.13$, $p < .05$, partial $r = .15$. However, the effect size of this relationship was small (Rosenthal et al, 2000). The unstandardized simple slopes for centrality and PTSD one standard deviation below the mean of meaning made and one standard deviation above the mean are displayed graphically in Figure 2 (Appendix B).

Discussion

The moderating relationships observed in this study suggest that meaning making determines the extent to which the centrality of a loss event produces bereavement-related symptomatology. When an individual has not effectively made meaning of a loss event, that event's centrality in the individual's life narrative will amplify adverse outcomes of bereavement (i.e. complicated grief and PTSD). However, when an individual has made adaptive meaning of a loss, it seems to buffer against the effect of the loss's centrality, causing the relationship to either become much weaker (in the case of PTSD) or non-significant (in the case of complicated

grief). These results are concordant with previous findings on the efficacy of meaning making in predicting improved grief outcomes (Burke et al., 2015; Coleman & Neimeyer, 2010; Currier et al., 2006; Currier et al., 2011; Holland & Neimeyer, 2010, 2011; Holland, Currier, & Neimeyer, 2006; Holland et al., 2010; Holland et al., 2014; Keesee et al., 2008; Lichtenthal, Burke, & Neimeyer, 2011; Murphy et al., 2003; Neimeyer, 2016; Neimeyer, Baldwin, & Gillies, 2006; Park, 2010; Rozalski, et al., 2016).

Just why meaning making nullified the impact of event centrality in the case of complicated grief, whereas it merely substantially reduced it in the case of PTSD remains to be explained, however. One possibility is that complicated grief has been found to be a composite of both traumatic and separation distress (Holland & Neimeyer, 2011), so that meaning making strategies centered on restoring a sense of secure attachment to the memory of the deceased (Neimeyer & Thompson, 2014) may play a contributing role in mitigating distress over a highly central loss, whereas this compensatory strategy plays no role in addressing traumatic arousal, per se. Evaluating this and other plausible explanations awaits further research.

One way of shedding light on this question would be to examine specifically losses with violent or accidental causes. Such losses have been known to cause more traumatic arousal symptoms (Breslau et al, 1998; Zisook et al., 1998), and event centrality does have an association with cause of death (Boelen, 2009). If the centrality of these losses is more a function of the impact of traumatic aspects of the loss, then it is possible that the moderating relationship observed in our study would not apply to complicated grief severity to the same extent.

To further investigate the composite nature of complicated grief, subsequent research should also examine the closeness and conflict of the relationship with the decedent. In the

widowed population, relationships with high closeness result in more yearning for the decedent, whereas relationships with high conflict result in less yearning (Carr et al., 2000). Because yearning is a hallmark of separation distress, it is possible that the observed moderating effect is larger for relationships in which closeness was high and conflict was low. Meaning making in this case hypothetically would be more instrumental, if indeed it more directly addresses issues related to separation distress.

Whatever the outcome of such future research, the presently demonstrated role of meaning making in determining how centrality predicts outcomes also could shed light on the seemingly paradoxical dual association of centrality with both post-loss symptomatology and post-loss growth (Boals & Schuettler, 2011). If meaning making can determine the relationship between centrality and symptomatology, it is also possible that meaning making affects the relationship between centrality and other outcomes of bereavement, such as post-loss growth. A highly central loss event creates a discrepancy, a need for resolution. This need for resolution can result in greater growth, as the impetus to accommodate the loss results in an expanded and more meaningful concept of the world and self, as in the "Grief to Personal Growth Model" (Hogan, Greenfield & Schmidt, 2001; Hogan & Schmidt, 2016). Several theorists have recognized this need for assumptive worldviews to be challenged in order to initiate growth (Calhoun, Tedeschi, Cann, & Hanks, 2010; Janoff-Bulman, 1992; Neimeyer, 2016; Nerken, 1993). Taking into consideration the interaction between centrality and meaning making, the ability to comprehend and find adaptive significance in a loss potentially could redirect the impetus of centrality from generation of symptomatology to enhancement of post-loss growth. Centrality appears to be a construal of a loss event that is not inherently conducive to either outcome, good or bad. Rather, it seems to be either an opportunity or a stumbling block,

depending on how successfully the loss micro-narratives are integrated into one's self-narrative. Subsequent research should examine whether there is a moderation effect of meaning making on the relationship between event centrality and post-loss growth.

The results of this study also support the construct validity of both event centrality and meaning made, as they were shown in the multiple regression analyses to both have unique effects on symptomatology. Berntsen and Rubin (2007) state that the high association between event centrality and PTSD intensity suggests that enhanced integration of a trauma into an individual's life story worsens rather than alleviates symptomatology. The interaction effect observed in the regressions indicates that meaning made should be considered as distinct from centrality; they are not both a reflection of narrative integration. Rather, centrality might better be considered an indicator of the magnitude of the impetus a person experiences to find meaning in the distressing life event. Couched in terms of the self-narrative model (Neimeyer, 2004), centrality is a measure of the importance of a particular chapter in an individual's story; meaning made is a measure of how adequately the author weaves that chapter into the rest of his or her life story. Meaning made, therefore, is a key determinant of whether adaptive or maladaptive integration of the trauma occurs.

Clinical implications in light of these findings encourage the use of narrative constructivist therapies in the treatment of bereavement-related distress and symptomatology. One such treatment is the Mustard Seed Project, a weekend workshop that encourages narrative revision through the use of "self-immersive" and "self-distancing" processing of personal stories of loss, punctuated by interludes of meditation, Buddhist dharma lessons on principles of impermanence, suffering, and the "self," and expressive arts exercises to engage existential questions in fresh ways. Results of an open trial of this therapy have revealed increases in ISLES

scores, diminished grief-related suffering, and personal growth for participants (Neimeyer & Young-Eisendrath, 2015).

Several related narrative practices are currently being developed and tested. One such therapy is Directed Journaling (Lichtenthal & Neimeyer, 2012), in which bereaved individuals reflect on the sense they have made of their loss, as well as unsought benefit and growth that they have experienced as a result, whose efficacy in reducing complicated grief and other symptoms has been evidenced in a randomized clinical trial (Lichtenthal & Cruess, 2010). Yet a third is the Meaning in Loss Group (Neimeyer, 2016), in which the specific "event story" of the loss and "back story" of the relationship to the deceased are addressed, as mourners engage in various tasks of "introducing the deceased" and building a "loss timeline" that are related to other members of the group. Coherence in the self-narrative is facilitated by a subsequent "restorative retelling" of the death story, which is further consolidated through the use of creative writing and ritual. An empirical evaluation of this intervention is currently being conducted, which should permit analysis of the role of meaning making as a moderator of improvement in complicated grief and other symptoms in a controlled longitudinal design.

The present study had several limitations. No statements concerning the direction of causality in this study between the independent and dependent variables can be substantiated, as data were cross sectional. Further research should collect longitudinal data to examine how meaning making during a specified time period affects the relationship between centrality immediately post-loss and bereavement-related symptomatology at a later time point. Another consideration was the use of the PCL-C instead of the more recent PTSD Checklist for DSM-5 (PCL-5; Weathers, Litz, Keane, Palmieri, Marx, & Schnurr, 2013) in the assessment of PTSD symptomatology as data were collected prior to the DSM-5 being published. Although some

substantive changes in the structural understanding of PTSD have occurred between these two measures, the PCL-C nonetheless accurately reflects the overall intensity of PTSD symptomatology in this population (Hoge, Riviere, Wilk, Herrell, & Weathers, 2014). Another limitation was the lack of a full trauma history for all participants. Because previous stressors affect responses to subsequent traumatic stressors (Breslau, Chilcoat, Kessler, & Davis, 1999), further research that investigates the generalizability of this moderating relationship to mourners with a full range of previous traumas is indicated. Additionally, the results are not generalizable to the population at large, as the sample was composed entirely of college students of diverse ethnicity. A further consideration is that the mode of loss for the participants' loved ones was most commonly due to natural causes, although fully a third of the sample consisted of survivors of suicide, homicide or accident related losses. Thus, future research is indicated with populations that differ in the circumstances surrounding the loss and the mode of death (Stroebe et al., 2007). However, even with these limitations the present study adds to the growing evidence base suggesting that meaning making contributes to better adaptation to bereavement (Neimeyer, 2016), substantially moderating the impact of highly central loss events on subsequent grief and traumatic stress symptomatology.

References

Aiken, L. S., & West, S. G. (1991). *Multiple Regression: Testing and Interpreting Interactions.* Newbury Park, CA: Sage.

American Psychiatric Organization. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th Ed.). Washington, DC: American Psychiatric Association.

Barry, L. C., Kasl, S. V., & Prigerson, H. G. (2002). Psychiatric disorders among bereaved persons: The role of perceived circumstances of death and preparedness for death. *American Journal of Geriatric Psychiatry, 10,* 447-457. doi: 10.1097/00019442-200207000-00011

Berntsen, D., & Rubin, D. (2006) The centrality of event scale: A measure of integrating a trauma into one's identity and its relation to post-traumatic stress disorder symptoms. *Behaviour Research and Therapy, 44*, 219-231. doi: 10.1016/j.brat.2005.01.009

Berntsen, D., & Rubin, D. C. (2007). When a trauma becomes a key to identity: Enhanced integration of trauma memories predicts posttraumatic stress disorder symptoms. *Applied Cognitive Psychology*, *21*, 417–431. doi: 10.1002/acp.1290

Blake, D. D., Weathers, F. W., Nagy, L. M., Kaloupek, D. G., Gusman, F. D., Charney, D. S., & Keane, T. M. (1995). The development of a clinician-administered PTSD scale. *Journal of Traumatic Stress, 8,* 75-90. doi:10.1002/jts.2490080106

Blanchard, E. B., Jones-Alexander, J., Buckley, T. C., & Foneris, C. A. (1996). Psychometric properties of the PTSD checklist (PCL). *Behaviour Research and Therapy, 34*, 669–673. doi: 10.1016/0005-7967(96)00033-2

Boals, A., & Schuettler, D. (2011) A double-edged sword: Event centrality, PTSD, and posttraumatic growth. *Applied Cognitive Psychology, 25*, 817-822. doi: 10.1002/acp.1753

Boelen, P. (2009). The centrality of a loss and its role in emotional problems among bereaved people. *Behaviour Research and Therapy, 47,* 616-622. doi: 10.1016/j.brat.2009.03.009

Boelen, P. (2012) A prospective examination of the association between the centrality of a loss and post-loss psychopathology. *Journal of Affective Disorders, 137,* 117-124. doi:10.1016/j.jad.2011.12.004

Boelen, P. A., van de Schoot, R., van den Hout, M. A., de Keijser, J., & van den Bout, J. (2010). Prolonged grief disorder, depression, and posttraumatic stress disorder are distinguishable syndromes. *Journal of Affective Disorders, 125,* 374-378. doi: 10.1016/j.jad.2010.01.076

Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist, 59,* 20-28. doi: 10.1037/0003-066X.59.1.20

Breslau, N., Kessler, R. C., Chilcoat, H. D., Schultz, L. R., Davis, G. C., & Andreski, P. (1998). Trauma and posttraumatic stress disorder in the community: The 1996 Detroit area survey of trauma. *Archive of General Psychiatry, 55,* 626-632. doi: 10.1001/archpsyc.55.7.626

Breslau, N., Chilcoat, H. D., Kessler, R. C., & Davis, G. C., (1999). Previous exposure to trauma and PTSD effects of subsequent trauma: Results from the Detroit area survey of trauma. *The American Journal of Psychiatry, 156,* 902-907. doi: 10.1176/ajp.156.6.902

Burke, L. A., Neimeyer, R. A., Smigelsky, M. A., Gibson, B. W., Ali, K. S., & Clark, K. A. (2015). Risk factors for anticipatory grief in family members of terminally ill Veterans receiving palliative care services. *Journal of Social Work in End-of-Life & Palliative Care, 11,* 244-266. doi: 10.1080/15524256.2015.1110071

Calhoun, L. G., Tedeschi, R. G., Cann, A., & Hanks, E. A. (2010). Positive outcomes following bereavement: Paths to posttraumatic growth. *Psychologica Belgica, 50*, 125-143. doi: 10.5334/pb-50-1-2-125

Carr, D., House, J. S., Kessler, R. C., Nesse, R. M., Sonnega, J., & Wortman, C. (2000). Marital quality and psychological adjustment to widowhood among older adults: A longitudinal analysis. *Journal of Gerontology, 55*, 197-207. doi: 10.1093/geronb/55.4.S197

Coleman, R. A., & Neimeyer, R. A. (2010). Measuring meaning: Searching for and making sense of spousal loss in later life. *Death Studies, 34,* 804-834. doi: 10.1080/07481181003761625

Currier, J. M., Holland, J. M., Chisty, K., & Allen, D. (2011) Meaning made following deployment in Iraq or Afghanistan: Examining unique associations with posttraumatic stress and clinical outcomes. *Journal of Traumatic Stress, 24*, (6), 691-698. doi: 10.1002/jts.20691

Currier, J. M., Holland, J. M., & Neimeyer, R. A. (2006). Sense-making, grief, and the experience of violent loss: Toward a mediational model. *Death Studies, 30,* 430-428. doi: 10.1080/07481180600614351

Frankl, V. (1962). *Man's Search for Meaning*. New York, NY: Touchstone Books.

Freud, S. (1917/1953). Mourning and melancholia. In J. Strachey (Ed.), *The standard edition of the complete psychological works of Sigmund Freud* (vol. 14). London: Hogarth.

Gillies, J., & Neimeyer, R. A. (2006). Loss, grief, and the search for significance: Toward a model of meaning reconstruction in bereavement. *Journal of Constructivist Psychology, 19,* 31-65. doi: 10.1080/10720530500311182

Gillies, J., Neimeyer, R. A., & Milman, E. (2015). The Grief and Meaning Reconstruction Inventory (GMRI): Initial validation of a new measure. *Death Studies, 39,* 61-74. doi: 10.1080/07481187.2014.907089

Hogan, N. S., Greenfield, D. A., & Schmidt, L. A. (2001). Development and validation of the Hogan Grief Reaction Checklist. *Death Studies, 25,* 1-32. doi: 10.1080/07481180125831

Hogan, N. S. & Schmidt, L. A. (2002). Testing the grief to personal growth model using structural equation modeling. *Death Studies, 26*, 615-634. doi: 10.1080/07481180290088338

Hogan, N. S. & Schmidt, L. A. (2016). Hogan Grief Reactions Checklist (HGRC). In R. A. Neimeyer (Ed.)*, Techniques of grief therapy: Assessment and intervention*, (39-45), New York: Routledge.

Hoge, C. W., Riviere, L. A., Wilk, J. E., Herrell, R. K., & Weathers, F. W. (2014). The prevalence of post-traumatic stress disorder (PTSD) in US combat soldiers: a head-to-head comparison of DSM-5 versus DSM-IV-TR symptom criteria with the PTSD checklist. *The Lancet Psychiatry*, *1*, 269-277. doi: 10.1016/S2215-0366(14)70235-4

Holland, J. M., Currier, J. M., Coleman, R. A., & Neimeyer, R.A. (2010). The integration of stressful life experiences scale (ISLES): Development and initial validation of a new measure. *International Journal of Stress Management, 17*, 325-352. doi: 10.1037/a0020892

Holland, J. M., Currier, J. M. & Neimeyer, R. A. (2006). Meaning reconstruction in the first two years of bereavement: The role of sense-making and benefit-finding. *Omega, 53*, 175-191. doi: 10.2190/FKM2-YJTY-F9VV-9XWY

Holland, J. M., Currier, J. M., & Neimeyer, R. A. (2014). Validation of the Integration of

Stressful Life Experiences Scale-Short Form in a bereaved sample. *Death Studies, 38,* 234-238. doi: 10.1080/07481187.2013.829369

Holland, J.M., & Neimeyer, R.A. (2010). An examination of stage theory of grief among individuals bereaved by natural and violent causes: A meaning-oriented contribution. *Omega, 61*, 105–122. doi: 10.2190/OM.61.2.b

Holland, J. M., & Neimeyer, R. A. (2011). Separation and traumatic distress in prolonged grief: The role of cause of death and relationship to the deceased. *Journal of Psychopathology and Behavioral Assessment, 33,* 254-263. doi: 10.1007/s10862-010-9214-5

Janoff-Bulman, R. (1989). Assumptive worlds and the stress of traumatic events: Application of the schema construct. *Social Cognition, 7,* 113-116. doi: 10.1521/soco.1989.7.2.113

Janoff-Bulman, R. (1992) *Shattered assumptions: Towards a new psychology of trauma*. New York, NY: Free Press.

Keesee, N.J., Currier, J.M., & Neimeyer, R.A. (2008). Predictors of grief following the death of one's child: The contribution of finding meaning. *Journal of Clinical Psychology, 64*, 1145-1163. doi: 10.1002/jclp.20502

Lancaster, S. L., & Carlson, G. C. (2015). Meaning made, distress, and growth: An examination of the integration of stressful life experiences scale. *International Journal of Stress Management, 22,* 92-110. doi: 10.1037/a0038296

Laurie, A., & Neimeyer, R. A. (2008). African Americans in bereavement: Grief as a function of ethnicity. *Omega, 57*, 173–193. doi: 10.2190/OM.57.2.d

Lichtenthal, W. G., Burke, L. A., & Neimeyer, R. A. (2011). Religious coping and meaning making following the loss of a loved one. *Counseling and Spirituality, 30,* 113-136. Retrieved from http://nebula.wsimg.com/a5b278ea36c0e8b7ae29b2d5cf9bd1ac.

Lichtenthal, W. G., & Cruess, D. G. (2010). Effects of directed written disclosure on grief and distress symptoms among bereaved individuals. *Death Studies*, *34*, 475-499. doi: 10.1080/07481187.2010.483332

Lichtenthal, W. G., Cruess, D. G., & Prigerson, H. G. (2004). A case for establishing complicated grief as a distinct mental disorder in DSM-V. *Clinical Psychology Review, 24,* 637-662. doi: 10.1016/j.cpr.2004.07.002

Lichtenthal, W. G., & Neimeyer, R. A. (2012). Directed journaling to facilitate meaning making. In R. A. Neimeyer (Ed.), *Techniques of grief therapy* (pp. 161-164). New York, NY: Routledge.

Lichtenthal, W. G., Neimeyer, R. A., Currier, J. M., Roberts, K., & Jordan, N. (2013). Cause of death and the quest for meaning after the loss of a child. *Death Studies, 37,* 311-342.

Murphy, S. A., Johnson, L. C., & Lohan, J. (2003). Finding meaning in a child's violent death: A five-year prospective analysis of parents' personal narratives and empirical data. *Death Studies, 27,* 381-404. doi: 10.1080/07481180302879

McDevitt-Murphy, M. E., Neimeyer, R. A., Burke, L. A., Williams, J. L., & Lawson, K. (2011). The toll of traumatic loss in African Americans bereaved by homicide. *Psychological Trauma: Theory, Research, Practice, and Policy, 4,* 303-311. doi: 10.1037/a0024911

Neimeyer, R. A. (2004). Fostering posttraumatic growth: A narrative elaboration. *Psychological Inquiry, 15,* 53-59. Retrieved from http://www.jstor.org/stable/20447202

Neimeyer, R. A. (2016). Meaning reconstruction in the wake of loss: Evolution of a research program. *Behavior Change.* Advance online publication. doi: 10.1017/bec.2016.4

Neimeyer, R. A., Baldwin, S. A., & Gillies, J. (2006). Continuing bonds and reconstructing meaning: Mitigating complications in bereavement. *Death Studies, 30,* 715-738. doi: 10.1080/07481180600848322

Neimeyer. R. A., & Thompson, B. E. (2014). Meaning making and the art of grief therapy. In B. E. Thompson & R. A. Neimeyer (Eds.), *Grief and the expressive arts*. New York: Routledge.

Neimeyer, R. A., & Young-Eisendrath, P. (2015). Assessing a Buddhist treatment for bereavement and loss: The Mustard Seed Project. *Death Studies, 39,* 263-273. doi: 10.1080/07481187.2014.937973

Nerken, I. R. (1993). Grief and the reflective self: Toward a clearer model of loss resolution and growth. *Death Studies*, *17*, 1-26. doi: 10.1080/07481189308252602

Park, C. L. (2010). Making sense of the meaning literature: An integrative review of meaning making and its effects on adjustment to stressful life events. *Psychological Bulletin, 2*, 257-301. doi: 10.1037/a0018301

Preacher, K. J., Curran, P. J., & Bauer, D. J. (2004). *Simple intercepts, simple slopes, and regions of significance in MLR 2-way interactions.* Retrieved from http://www.unc.edu/~preacher/interact.com.

Prigerson, H. G., Horowitz, M. J., Jacobs, S. C., Parkes, C. M., Aslan, M., Goodkin, K., ... Maciejewski, P. K. (2009). Prolonged grief disorder: Psychometric validation of criteria proposed for DSM-V and ICD-11. *PLoS Medicine, 6.* Retrieved from http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1000121

Prigerson, H. G., & Jacobs, S. C. (2001). Traumatic grief as a distinct disorder: A rationale, consensus criteria, and a preliminary empirical test. In H. Schut (Ed.), *Handbook of*

bereavement research. Washington, DC: American Psychological Association. doi: 10.1037/10436-026

Prigerson, H. G., & Maciejewski, P. K. (2006). A call for sound empirical testing and evaluation of criteria for complicated grief proposed for DSM- V. *Omega, 52*, 9-19. doi: 10.2190/ANKH-BB2H-D52N-X99Y

Prigerson, H. G., Vanderwerker, L. C., & Maciejewski, P. K. (2008). A case for inclusion of prolonged grief disorder in DSM-V. In M. Stroebe, R. Hansson, H., H. Schut, & W. Stroebe (Eds.), *Handbook of bereavement research and practice: Advances in theory and intervention* (pp. 165-186). Washington, DC: American Psychological Association.

Rosenthal, R., Rosnow, R. L., & Rubin, D. B. (2000). *Contrasts and Effect Sizes in Behavioral Research: A Correlational Approach.* New York, NY: Cambridge University Press.

Rozalski, V., Holland, J. M., & Neimeyer, R. A. (2016). Circumstances of death and complicated grief: Indirect associations through meaning made of loss. *Journal of Loss and Trauma*. Advance online publication. doi: 10.1080/15325024.2016.1161426

Ruggiero, K. J., Del Ben, K., Scotti, J. R., & Rabalais, A.E. (2000). Psychometric properties of the PTSD Checklist – Civilian Version. *Journal of Traumatic Stress, 16,* 495-502. doi: 10.1023/A:1025714729117

Schuettler, D., & Boals, A. (2011). The path to posttraumatic growth versus posttraumatic stress disorder: Contributions of event centrality and coping. *Journal of Loss and Trauma, 16,* 180-194. doi: 10.1080/15325024.2010.519273

Shear, M. K., Simon, N., Wall, M., Zisook, S., Neimeyer, R., Duan, N., … Keshaviah, A. (2011). Complicated grief and bereavement issues for DSM-5. *Depression and Anxiety, 28,* 103-117. doi: 10.1002/da.20780

Stroebe, M., Schut, H., & Stroebe, W. (2007). Health outcomes of bereavement. *Lancet*, *370,* 1960-1973. doi: 10.1016/S0140-6736(07)61816-9

Tabachnick, B. G., & Fidell, L. S. (2001). *Using Multivariate Statistics, Fourth Edition.* Needham Heights, MA: Allyn & Bacon.

Weathers, F. W., Litz, B. T., Keane, T. M., Palmieri, P. A., Marx, B. P., & Schnurr, P. P. (2013). The PTSD Checklist for DSM-5 (PCL-5). Scale available from the National Center for PTSD at www.ptsd.va.gov.

Williams, J. L., Burke L. A., McDevitt-Murphy, M. E., & Neimeyer, R. A. (2012). Responses to loss and health functioning among homicidally bereaved African Americans. *Journal of Loss and Trauma, 17,* 358-375. doi: 10.1080/15325024.2011.635583

Zisook, S., Chentsova-Dutton, Y., & Shuchter, S. R. (1998) PTSD following bereavement. *Annals of Clinical Psychiatry, 10*, 157-163. doi: 10.1023/A:1022342028750

Appendix A: Tables

Table 1

Descriptive Statistics of Demographic, Outcome, and Predictor Variables

Variable	N	Percentage
Gender		
Male	52	25.5
Female	152	74.5
Race/Ethnicity		
Native American	4	2.0
Asian	7	3.4
Black	80	39.2
Hispanic/Latino	15	7.4
White	111	54.4
Pacific Islander	1	.5
Other	2	1.0
Marital Status		
Married/Cohabitating	16	7.8
Single	184	90.2
Divorced	3	1.5
Separated	1	.5
Cause of Death		
Natural, anticipated	83	40.7
Natural, sudden	49	24.0
Accident	26	12.7
Suicide	18	8.8
Homicide	13	6.4
Other	15	7.4
Relation of Deceased		
Parent	15	7.4
Sibling	3	1.5
Grandparent	69	33.8
Aunt/Uncle	32	15.7
Niece/Nephew	1	.5
Cousin	12	5.9
Friend	55	27.0
Other	17	8.3

Table 1 Continued

Variable	*M*	*SD*	Range
Age	21.69	6.62	18 - 56
Weeks since Loss	54.18	34.95	1 - 100
Complicated Grief Severity	53.43	20.63	32-130
PTSD Severity	30.86	15.26	17-81
Meaning Making Score	59.9	14.77	16-80
Centrality of Event Score	19.12	7.92	7-35

Table 2

Multiple Regression Analysis for Centrality, Meaning Made, and their Product as Predictors of Complicated Grief Severity (N=204)

Variable	B	SE (B)	β	*t*	Sig. (*p*)
Centrality (mean-centered)	1.06	.14	.41	7.58	.000
Meaning Made (mean-centered)	-.60	.08	-.43	-7.56	.000
Product	-.05	.01	-.32	-5.94	.000

Notes. $R^2 = .50$.

Table 3

Multiple Regression Analysis for Centrality, Meaning Made, and their Product as Predictors of PTSD Severity (N=204)

Variable	B	SE (B)	β	*t*	Sig. (*p*)
Centrality (mean-centered)	.88	.10	.46	8.89	.000
Meaning Made (mean-centered)	-.41	.06	-.40	-7.43	.000
Product	-.04	.01	-.35	-6.84	.000

Notes. $R^2 = .54$.

Appendix B: Figures

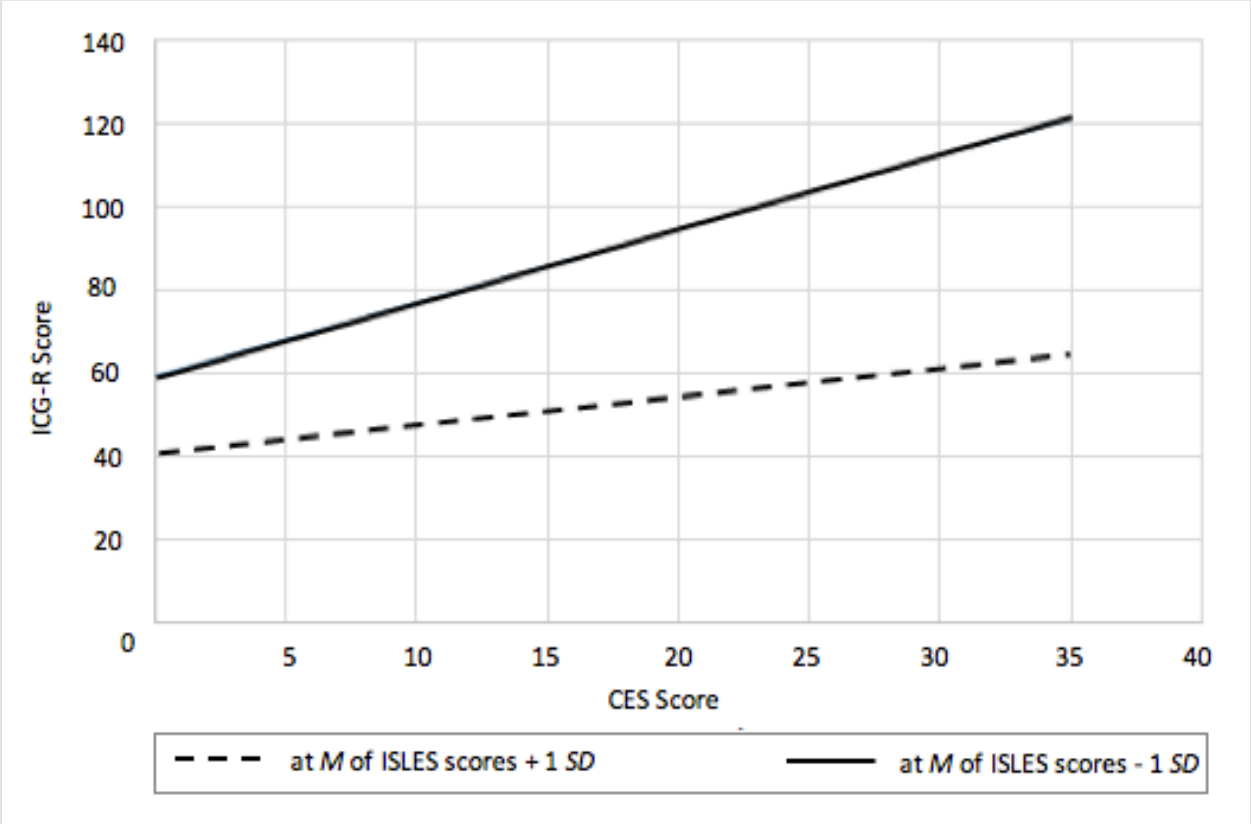

Figure 1. Simple slopes of centrality predicting complicated grief severity for 1 *SD* below the mean of meaning making and 1 *SD* above the mean of meaning making.

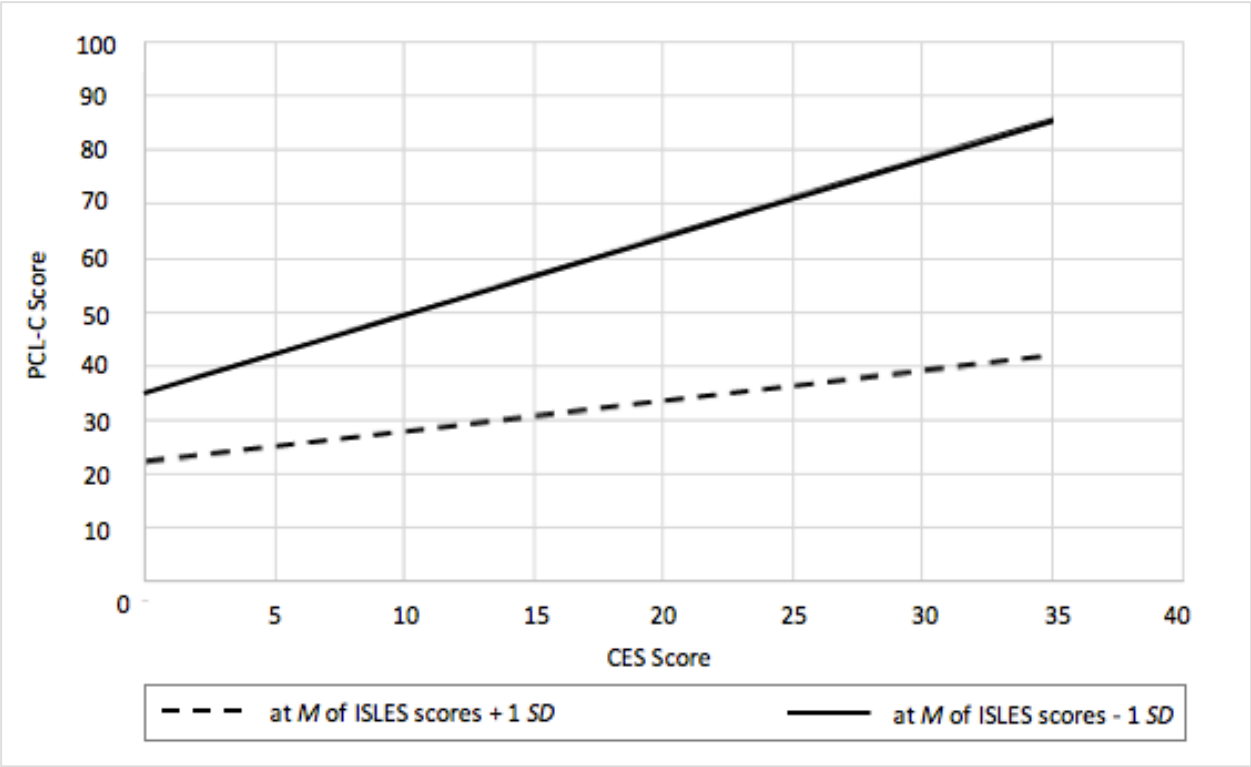

Figure 2. Simple slopes of centrality predicting PTSD severity for 1 *SD* below the mean of meaning making and 1 *SD* above the mean of meaning making.