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Objective Circumstances of the Death and Complicated Grief: Examining Indirect Associations Through Meaning Made of Loss

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OBJECTIVE CIRCUMSTANCES OF THE DEATH AND COMPLICATED GRIEF:
EXAMINING INDIRECT ASSOCIATIONS THROUGH MEANING MADE OF LOSS

By

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Bachelor of Arts in Psychology

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A thesis submitted in partial fulfillment of the requirements for the

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Examining Indirect Associations through Meaning and Made of Loss**

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Abstract

It has been proposed that losses by violent means and loss of primary attachment figures may increase the likelihood of developing a chronic and severe grief response (often referred to as complicated grief). Specifically, these losses may be more likely to violate cherished beliefs about the safety, security, and predictability of the world, and as a result, make it more difficult to find some benign (or even positive) meaning in the event. This study aims to test this hypothesis using path analysis. Participants include 741 bereaved young adults who lost someone within the past two years. Participants were recruited from introductory undergraduate psychology courses and completed surveys online for class credit. Direct and indirect effects showed that meaning made of the loss, as measured by the Integration of Stressful Life Experiences Scale (ISLES), mediated the relationship between objective risk factors (i.e., cause of death, relationship to the deceased) and Complicated Grief (CG) symptoms. Meaning made of the loss fully mediated the association for cause of death and partially mediated the association for relationship to the deceased. The Comprehensibility subfactor of the ISLES acted as a better mediator for cause of death than the Footing in the World subfactor. These findings show that, for the most part, meaning made out of loss statistically accounts for the association between objective risk factors and CG. These results have important clinical implications. Specifically, assessment tools and interventions have been developed that are based on a model of grief that views meaning making as a crucial determinant of adjustment to loss. These findings provide empirical evidence for such a model, and by extension, they indirectly support clinical applications based on a meaning-oriented theoretical model.

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CHAPTER 1: INTRODUCTION

Bereavement is one the most stressful life experiences (Holmes & Rahe, 1967). Most bereaved individuals are able to recover from loss and return to baseline levels of functioning, but 10-20% of individuals experience chronic and severe grief reactions labeled complicated grief (CG), or prolonged grief disorder (Prigerson, Vanderwerker, & Maciejewski, 2008). CG is characterized by intense yearning for the deceased, feeling a lack of meaning after the loss, an inability to trust others, and impairment in daily functioning. It has been shown to be distinct from depression and PTSD (Boelen & van de Bout, 2005; Boelen, van de Bout, & de Keijser, 2003) and to uniquely predict poor mental and physical health outcomes (Boelen, van de Bout, & de Keijser, 2003; Bonnano et al., 2007; Maercker et al., 2013; Ogrodniczuk et al., 2003; Prigerson et al., 1996; Prigerson et al., 1995). Thus, identifying risk factors for developing CG may help to pinpoint those who are at greatest risk, assist in the development of CG interventions, and perhaps shed light on the etiological mechanisms that lead to these difficulties (Burke & Neimeyer, 2013; Currier, Neimeyer, & Berman, 2008).

Several factors have been found to increase the likelihood of developing CG, including violent causes of death, loss of primary attachment figures, and difficulties making some meaning of the loss. Specifically, more severe grief reactions have been noted for losses of more intimate and emotionally close relationships (Servaty-Seib & Pistole, 2006; Robak & Weitzman, 1998). Individuals who lost a first-degree relative have been shown to be much more likely to experience elevated CG symptoms compared to those who lost a friend or distant family member (Prigerson et al., 2002). Those who experience a loss from a violent cause of death (i.e., suicide, homicide, accident) have

also been shown to experience more severe CG symptoms than those bereaved by a natural cause of death (e.g., heart attack, stroke, or cancer; Currier, Holland, Coleman & Neimeyer, 2008; Keesee, Currier, & Neimeyer, 2008). Likewise, difficulties in making meaning of a loss (the process of making sense or finding significance in the loss) have been shown to be associated with greater CG symptoms (Bonnano et al., 2002; Holland, Currier, & Neimeyer, 2006; Holland & Neimeyer, 2010; Keesee, Currier, & Neimeyer, 2008) and poorer adjustment (Davis, Nolen-Hoeksama, & Larson, 1998; Park, 2010; Wortman & Silver, 1989).

Meaning made of loss has been shown to be associated with both cause of death and relationship to the deceased. Individuals bereaved by violent causes have greater difficulty making sense and finding some benign or positive significance in the loss compared to those bereaved by natural causes (Currier, Holland, Coleman, & Neimeyer, 2008; Holland, Currier, Coleman, & Neimeyer, 2010). Notably, one study found that a one-item measure of meaning made of loss significantly mediated the association between cause of death and CG symptoms (Currier, Holland, & Neimeyer, 2006). In addition, individuals who lost a first-degree relative have been shown to make less meaning of their losses compared to those who lost an extended family member or friend (Holland, Currier, & Neimeyer, 2014).

The present study seeks to examine the relationship between circumstances of a death (i.e., cause of death, relationship to the deceased), meaning made of the loss, and CG using path analysis. We hypothesize that meaning made of loss will mediate the association between objective circumstances of the loss and CG. Specifically, it is expected that those bereaved by violent causes (i.e., homicide, suicide, fatal accident) and

those who have lost a first-degree relative will be less likely to make meaning out of the loss and in turn will experience more severe CG symptoms. A discussion of the construct of CG and meaning made of loss follows, as well as how cause of death and relationship to the deceased may influence each. A full description of the study aims and hypotheses are also presented.

CHAPTER 2: LITERATURE REVIEW

Complicated Grief

Bereavement is a ubiquitous experience that has been rated as one of the most difficult life stressors (Holmes & Rahe, 1967). Despite the stress of these losses, most individuals are fairly resilient exhibiting minimal grief and depressive symptomatology from 6- to 18-months postloss (Bonanno et al., 2002; Bonnano et al., 2004). However, a sizable minority (roughly 10-20% of individuals) experience chronic distress after a loss that interferes with daily functioning (Bonnano and Kaltman, 2001; Bonnano and Kaltman, 1999; Jacobs, 1993; Prigerson, Vanderwerker, & Maciejewski, 2008). These severe and chronic grief reactions, referred to as Complicated Grief (CG), are characterized by intense yearning for the deceased, preoccupation with the loss, and an inability to find meaning in life after the death (Prigerson et al., 2009). Notably, CG (also sometimes referred to prolonged grief disorder) is currently under consideration as a psychiatric diagnosis in the International Classification of Diseases, Volume 11 (ICD-11; Maercker et al., 2013), and the proposed diagnostic criteria are presented in Appendix E.

Although CG shares some overlap with other disorders, including Major Depressive Disorder (MDD) and Posttraumatic Stress Disorder (PTSD), factor analytic studies have shown that CG symptoms are distinct and separate from symptoms of anxiety, MDD, and PTSD (Boelen & van de Bout, 2005; Boelen, van de Bout & Keijser, 2003; Ogrodniczuk et al., 2003; Prigerson et al, 1996). Most notably, CG is characterized by separation distress, a specific and intense desire or yearning for the deceased, which is not represented by any other psychiatric disorder and is seen as the cardinal symptom of CG. Studies of psychiatric comorbidity have yielded a wide range of estimates and have

shown that between 10% to 55% of individuals with elevated CG symptoms meet criteria for depression or PTSD (Melhem et al., 2001; Neria et al., 2007; Newson et al., 2011; Shear et al., 2011; Simon et al., 2007). Taken as a whole, these investigations indicate that CG is a distinct syndrome that often exists with no comorbidity.

CG symptoms have also been shown to be associated with a number of detrimental mental and physical health outcomes. For example, in a longitudinal study, those with elevated CG symptoms were found to report more life stressors, less social support, and greater overall psychiatric distress over time, compared to bereaved individuals with fewer CG symptoms (Ott, 2003). Notably, even after controlling for symptoms of depression and other psychiatric symptoms, CG has been shown to be uniquely predictive of poorer global functioning (Bonnano et al., 2007), suicidality (Latham and Prigerson, 2004), heart problems, incidence of cancer, changes in eating and smoking habits, and high blood pressure (Prigerson et al., 1996). In addition, studies have identified a link between CG symptoms and crucial biomarkers of health, with those with elevated CG symptoms showing decreased immune functioning (Gerra et al., 2003) and dysregulated cortisol profiles (O'Connor, Wellisch, Stanton, Olmstead, & Irwin, 2012).

There is also some evidence to suggest that the assessment of CG may have important clinical implications. In particular, meta-analytic findings suggest that bereavement interventions that are delivered regardless of level of symptomatology are not particularly effective (Currier, Neimeyer, & Berman, 2008). However, treatments offered to bereaved individuals with elevated psychiatric symptoms, similar to CG, have been shown to be much more effective, yielding effect sizes similar to those found for psychotherapy in general (Currier, Holland, & Neimeyer, 2007; Currier, Neimeyer, &

Berman, 2008). Additionally, one study suggests that various intervention strategies may impact CG, normal range grief, and depression differently, with cognitive and behaviorally-oriented strategies having the greatest influence on CG symptoms (Holland, Currier, & Gallagher-Thompson, 2009).

Relationship to the Deceased

Attachment theory is one lens by which CG reactions may be viewed. From an attachment theory standpoint, our experience of interpersonal loss is shaped by early attachments, and the loss of more central attachment figures are typically experienced as more distressful (Bowlby, 1989), suggesting that the relationship to the deceased is pivotal in understanding CG. In particular, a distinction has been drawn between “primary” and “secondary” losses (Weiss, 1988). Primary losses refer to those that involve the loss of central attachment figures, such as parents, children, or significant others. These relationships all provide a sense of stability and security, and therefore when lost may be more likely to challenge basic beliefs and assumptions about the world (Janoff-Bulman, 1992). Secondary losses involve the loss of more peripheral attachments, such as coworkers, friends, or distant relatives and from an attachment theory perspective would not be expected to engender as much stress as primary losses.

Empirical studies generally lend credence to the idea that primary losses result in more severe grief reactions. For example, more severe grief reactions have been noted for losses of more intimate relationships (Robak & Weitzman, 1998) as well as those rated as being higher in emotional closeness (Servaty-Seib & Pistole, 2006). Individuals who lost a child have also been found to be at greater risk for unresolved grief, self-reported unhappiness, health problems, and social withdrawal when compared to adults who lost

other first-degree family members (Cleiren et al., 1994; Zisook & Lyons, 1988). In addition, when assessed specifically for CG, people who lost a first-degree relative have been shown to be much more likely to experience elevated CG symptoms, compared to those who lost a friend or distant family member. (Prigerson et al., 2002).

Cause of Death

Cause of death has also been shown to have an impact on bereaved individuals' grieving processes and mental health in general. Those who experience a loss from a violent cause of death (i.e., suicide, homicide, accident) have been shown to experience more severe CG symptoms than those bereaved by a natural cause of death (e.g., heart attack, stroke, or cancer; Currier, Holland, Coleman & Neimeyer, 2008). Further evidence from a study of bereaved parents suggests that losses by violent means are associated with greater CG symptoms, compared to parents who lost a child due to natural causes (Keesee, Currier, & Neimeyer, 2008). High levels of CG and depression have also been found among suicide survivors when compared to non-bereaved individuals and those who have lost a loved one to natural causes (Li & Zhang, 2010; Mitchell et al., 2004; Sveen & Walby, 2007; Zhang, Tong, & Zhou, 2005).

Previous research points to several factors that help to explain why violent causes of death might be particularly distressful. It has been proposed that the suddenness of the loss may play a salient role; however, unexpectedness of the death has been shown to be a relatively weaker predictor of grief symptoms, compared to the violent nature of the loss (Kaltmann & Bonnano, 2003). Thus, there seems to be something about the violence itself that puts those bereaved by violent causes at higher risk for CG and other mental health problems. Losses by violent means may produce more intense grief reactions not

simply because they are unexpected, but perhaps due to over-identification with feelings of horror, helplessness, and remorse (Rynearson, 2012). In particular, Rynearson (1994) discusses the “three V’s”—violence, violation, and volition—that often make bereavement by violent means especially painful. Violence refers to the fact that forceful and traumatic circumstances often surround the death, which may be accompanied by troubling images (e.g., disfigurement of the body) and other difficult memories (e.g., smell of gun powder, loud sudden noises, etc.). These deaths may also be viewed as a violation because the death involves a transgressive act that disregards the victim and/or challenges basic assumptions about the safety and stability of the world. Finally, the death is often perceived as an act of volition, meaning it is freely chosen by the perpetrator (i.e., in the case of murder), the victim (i.e., in the case of suicide), or someone else who is viewed as being responsible for the death (e.g., a drunk driver in the case of an automobile accident). These three factors may be crucial because they challenge assumptive worldviews about justice of the world, benevolence of other people, and the predictability of everyday life (Janoff-Bulman, 2004).

Meaning Making as a Potential Mediator

The meaning made after the loss has been proposed as a crucial mechanism that may help explain the link between relationship to the deceased, cause of death, and grief symptomatology (Currier, Holland, & Neimeyer, 2006). A meaning-oriented model of grief draws a distinction between global meaning and situational meaning. Global meaning refers to overall goals, beliefs, and worldviews that have developed over time. Situational meaning refers to the appraisal or meaning ascribed to a particular event, such as the loss of a loved one (see Park, 2010 for a review). According to this model, an event

may be experienced as distressful when there is a discrepancy between global meaning and situational meaning that triggers a painful search for some new understanding of the experience that may reduce this perceived discrepancy. For example, attributions of unpredictability and cruelty following a loss by homicide may challenge global beliefs about the benevolence of other people and safety/predictability of the world.

The chasm between global and situational meaning may be resolved via assimilative and/or accommodative processes (Park, 2010). Assimilation involves changing the appraised situational meaning to be consistent with global meaning (e.g., making sense of loss in the context of existing religious beliefs, perhaps as “God’s will”). In contrast accommodation refers to the process of altering global meaning to better match the situational meaning made of an event (e.g., developing a new understanding of one’s purpose in life; Lichtenthal, Currier, Neimeyer, & Keesee, 2010).

In a number of studies, difficulties in making meaning out of a loss have been shown to be associated with greater CG (Holland, Currier, & Neimeyer, 2006; Holland & Neimeyer, 2010; Keesee, Currier, & Neimeyer, 2008) and poorer adjustment (Davis, Nolen-Hoeksama, & Larson, 1998; Park, 2010; Wortman & Silver, 1989). Furthermore, in a cross-lagged panel designed study, a meaning-oriented model of grief was supported, with early difficulties with acceptance (which has been conceptualized as resulting from a discrepancy between global and situational meaning; Park, 2010) uniquely predicting subsequent grief-related distress and ruminative thoughts (Holland, Futterman, Thompson, Moran, & Gallagher-Thompson, 2013). Likewise, in a longitudinal study of bereaved parents of children with terminal illnesses, those who endorsed lower levels of

acceptance of their child's illness and did not have a belief in a just world were more likely to experience protracted grief symptoms after their loss (Bonanno et al., 2002).

Making meaning of loss has been shown to be especially difficult for those who have lost a primary relationship as well as for those who have experienced a loss due to violent causes. Specifically, individuals bereaved by violent causes have more problems with issues of meaning-making than those bereaved by natural causes, as evidenced by findings showing that those who lost a loved one by violent means report having made significantly less sense of the loss than those bereaved by natural causes (Currier, Holland, Coleman, & Neimeyer, 2008; Holland, Currier, Coleman, & Neimeyer, 2010). In addition, individuals who lost a first-degree relative have been shown to make less meaning of their losses compared to those who lost an extended family member or friend (Holland, Currier, & Neimeyer, 2014). Further evidence for the increased difficulty with making meaning among those who have lost a first degree relative comes from a study of bereaved parents in which nearly half of participants explicitly stated they could not make sense of their loss (Lichtenthal, Currier, Neimeyer, & Keesee, 2010).

Given that meaning made of loss is associated with grief, relationship to the deceased, and cause of death, it could represent a crucial intermediary variable that may help explain the link between objective risk factors and heightened CG. With regard to the association between violent cause of death and CG, one study found that a one-item measure of meaning made of their loss significantly mediated the association between these two variables (Currier, Holland, & Neimeyer, 2006). Notwithstanding the important contribution of this study, Currier and colleagues' (2006) investigation was limited by the

use of a one-item measure of meaning made of the loss and did not examine other objective risk factors beyond cause of death, such as relationship to the deceased.

Thus, the present study builds upon Currier and colleagues' (2006) study by investigating cause of death and relationship to the deceased simultaneously and using a validated, multidimensional measure of meaning made of loss called the Integration of Stressful Life Experiences Scale (ISLES; Holland, Currier, Coleman, & Neimeyer, 2010). Greater meaning made of stress as assessed by the ISLES has been shown to be associated with less psychiatric stress, better general health, healthier cortisol profiles, lower suicidal risk, fewer CG symptoms, less workplace burnout, and fewer PTSD symptoms (Currier et al., 2013; Currier, Holland, Christy, & Allen, 2011; Holland, Malott, & Currier, 2014; Holland et al., 2010; Holland, Rengifo et al., 2014). It has also been shown to have two subscales: Comprehensibility and Footing in the World. Comprehensibility pertains to having made sense of the event itself; whereas, Footing in the World pertains to the extent to which one's goals, values, beliefs, and worldviews still make sense in the aftermath of a stressful life event.

Study Aims and Hypotheses

The aim of this study is to test a model that simultaneously examines the direct and indirect effects (via meaning made of loss) of cause of death (i.e., violent vs. natural causes) and relationship to the deceased (i.e., immediate family vs. extended family/friends) on CG symptoms. Consistent with previous research, we hypothesize that:

- 1) Violent causes of death (vs. natural causes) and loss of immediate family members (vs. extended family members and friends) will be associated with less meaning made of the loss

- 2) Violent cause of death and loss of immediate family members will be associated with greater CG symptoms.
- 3) Meaning made of loss will be associated with less CG symptoms.
- 4) Meaning made of loss will mediate the association between the circumstances surrounding the loss (i.e., cause of death and relationship to the deceased) and CG symptoms.

In addition to these analyses, we plan to conduct exploratory analyses to determine the extent to which the proposed model is invariant across gender and ethnic/racial groups.

CHAPTER 3: METHODS

Participants and Procedures

Upon institutional review board approval, 741 undergraduate participants were recruited at a large southern research university via posted fliers, university-based online notices, and in-person class announcements. Students received research credit for their participation. Researchers used an online university-sponsored software program for the survey. All participants received a unique identification code to prevent taking the survey twice.

Eligibility requirements for the study required participants to (1) report having a loved one die in the past 2 years, (2) be 18 years or older, and (3) be willing to complete online surveys about their loss experience. A total of 741 participants completed the survey. Sociodemographic and background information about the participants is presented in Table 1. Participants' mean age was 21.64 (SD = 6.11), and the sample was comprised of mostly women (79.6%). Most of the participants were either Caucasian (45.2%) or African American (39.0%). Compared to the demographics of students in the psychology major at the university that the sample was drawn from, this sample is very similar in terms of race and gender. Compared to the university as a whole, the sample is over representative of women, which is common in social science classes (Barone, 2011). The most commonly endorsed highest level of education in the household was Some College/Trade School (30.0%) followed by Bachelor's Degree (19.0%) and High School Graduate (14.8%). The majority of the sample experienced the loss of an extended family member (54.30%), followed by a friend (19.70%), immediate family member (13.40%), and other non-family member (7.60%). The most common causes of death were natural

anticipated (41.2%), natural sudden (21.2%), accident (16.3%), other cause of death not listed (e.g., perinatal; 9.4%), homicide (6.5%), and suicide (5.4%).

Measures

Inventory of Complicated Grief—Revised (ICG-R). CG symptoms were assessed using the Inventory of Complicated Grief-Revised (ICG-R; Prigerson & Jacobs, 2001), which includes 30 items rated on a 5-point scale. Items are worded as declarative statements that represent particular symptoms associated with CG (e.g., *I feel myself longing and yearning for _____; I think about _____ so much that it can be hard for me to do the things I normally do*). Responses to these items range from 1 (*never*) to 5 (*always*), with higher scores indicating more severe CG symptoms. The ICG-R has been shown to have high internal consistency ($\alpha = 0.94 - 0.95$) and test-retest reliability ($r = .92$; Boelen, van de Bout, de Keijser, & Hoijtink, 2003; Burke, Neimeyer, & McDevitt-Murphy, 2010). It has also been shown to predict a range of negative outcomes above and beyond symptoms of depression, general anxiety, and PTSD (Bonanno et al., 2007; Latham & Prigerson, 2004; Prigerson et al., 1997). In addition, the ICG-R has displayed good concurrent validity with other measures of grief (Piper, Ogrodniczuk, & Weideman, 2005; Prigerson et al., 1995).

Integration of Stressful Life Experiences Scale (ISLES). The Integration of Stressful Life Experiences Scale (ISLES; Holland, Currier, Coleman, & Neimeyer, 2010) is a 16-item measure that assesses the degree to which participants made meaning of a stressful life event. Example items include, “*I have made sense of this event*” and “*My beliefs and values are less clear since this event.*” Participants were explicitly instructed to respond to these items with regard to their recent loss. Responses range from 1

(*strongly agree*) to 5 (*strongly disagree*), and items were scored so that higher scores indicated greater meaning made of the event. The ISLES has been shown to have strong internal consistency ($\alpha = 0.94 - 0.96$), moderate test-retest reliability ($r = .57$), and convergent validity with previously used 1-item assessments of meaning-making (Holland et al., 2010). Higher scores on the ISLES have also been found to be associated with less severe CG symptoms (Holland et al., 2010). Evidence supporting the incremental validity of ISLES scores has come from studies showing that less meaning made of stress is uniquely associated with greater PTSD symptoms and psychiatric referrals (Currier et al., 2011), more severe workplace burnout (Currier et al., 2013), and poorer perceived health (Holland et al., 2014), even after statistically controlling for other routinely assessed risk factors. Factor analysis has shown that the ISLES has two subscales: Comprehensibility and Footing in the World. Comprehensibility is related to understanding of the event, and Footing in the World pertains to the extent to which values, beliefs, goals, and worldviews still make sense in the aftermath of a stressful life event.

Plan of Analysis

Path analysis was used to examine the overall model. Analyses were conducted in Mplus version 7.11 (Muthén & Muthén, 2012). The cause of death variable was dichotomized into two categories: violent vs. natural/other. Causes of death that include accidents, homicides and suicides were coded as violent, and causes of death as a result of natural, anticipated (e.g., cancer), natural, sudden (e.g., heart attack), and/or other causes (e.g., perinatal death) were coded as natural/other. The relationship to the deceased variable was also split into two categories: first degree relationships vs. non-

first degree relationships. Deceased individuals who were spouses/partners, parents, siblings, or children were coded as first degree relatives and all other relationships (i.e., extended family members and friends) were be coded as non-first degree relationships. Cause of death and relationship to the deceased were specified as independent variables in the model. Meaning made of loss was specified as the mediating variable, and complicated grief symptoms were treated as the dependent variable, each of which was represented by a total summed score on the ISLES and ICG-R, respectively. The indirect effects of cause of death and relationship to the deceased on CG symptoms via meaning made of loss were examined. Statistically significant indirect effects and weakened direct paths in the presence of meaning made of loss (specified as the mediator) would support our hypothesis.

Parameters were estimated using a maximum likelihood robust (MLR) procedure, which is robust in the face of non-normality. Missing data was handled using full information likelihood. The overall model will be evaluated using several indices of model fit. This study will use the chi-square test of model fit, the comparative fit index (CFI; Bentler, 1990), the Tucker Lewis index (TFI; Hu & Bentler, 1999) and the root mean square error of approximation (RMSEA; Browne & Cudeck, 1993) to evaluate the model. CFI and TFI values above .90 are generally considered to be indicative of good model fit. RMSEA values below .06 indicate good model fit. Values between .07 to .08 and .09 to .10 indicate reasonable fit and mediocre fit, respectively, and RMSEA values greater than .10 indicate poor model fit (MacCallum, Browne, & Sugawara, 1996).

In addition to testing the overall model, we ran a number of subsidiary analyses. In particular, the invariance of the model was assessed across gender and race/ethnicity.

To test for invariance, we constrained structural paths to be equivalent for men and women, and then again for Caucasians and racial/ethnic minorities. A chi-square difference test was used to examine the decrease in fit of the constrained model. A non-significant result indicates that there are no significant differences overall between the models. A significant result indicates that the modification indices need to be examined to determine which parameters may vary across the different groups. Additionally, we conducted two separate versions of the model with the Comprehensibility and Footing in the World subscales of the ISLES as mediators (Holland, Currier, Coleman, & Neimeyer, 2010).

We also conducted several analysis of variance (ANOVA) tests to examine differences in meaning made of loss and complicated grief symptoms across multiple categories of cause of death (i.e., natural, anticipated; natural sudden; suicide; homicide; and accident) and relationship to the deceased (e.g., parent, sibling, child, aunt/uncle, cousin, friend, etc.). The purpose of these analyses was to determine if our proposed dichotomization of variables (i.e., violent vs. non-violent death; first-degree relatives vs. others) was optimal.

CHAPTER 4: RESULTS

Preliminary Analyses

Table 2 shows the correlation matrix between age, gender, highest level of education, cause of death, relationship to the deceased, ISLES total scores, and ICG-R total scores. Point-biserial correlations were conducted for the dichotomous variables. As can be seen in Table 2, those who lost an immediate family member were somewhat more likely to report that the loss was due to violent causes of death. Losing someone to a violent cause of death and losing an immediate family member were both associated with having made less meaning of the loss and greater CG symptoms. Having made more meaning of the loss was associated with fewer CG symptoms.

Path Analysis Findings

The full model (see Figure 1 in Appendix D) was just-identified, and therefore provided perfect fit to the data, $\chi^2(0) = 0.00, p < .001$; CFI = 1.00; SRMR = 0.00; RMSEA = 0.00, 90% CI = 0.00 – 0.00. As can be seen in Figure 1 a violent cause of death was associated with less meaning made of the loss (Estimate = $-.22, p < .001$). Greater meaning made of loss was in turn associated with lower levels of CG symptoms (Estimate = $-.70, p < .001$). Notably, the indirect pathway from cause of death to CG symptoms through ISLES scores was found to be statistically significant (Estimate = $.15, p < .001$; see Table 3), indicating that meaning made of loss statistically mediated the association between cause of death and CG. Although the total effect of cause of death on CG was statistically significant (including direct and indirect pathways; Estimate = $.18, p < .001$), the direct effect of violent cause of death on CG was no longer statistically significant (Estimate = $.03, p = .24$) after accounting for indirect effects through meaning

made of loss. This pattern of results suggests that meaning made of loss fully mediates the association between violent causes of death and increased CG symptomatology.

Losing an immediate family member (compared to the loss of an extended family member or friend) was related to less meaning made of the loss (Estimate = $-.28$, $p < .001$). The total effect of relationship to the deceased on CG symptoms (including direct and indirect paths) was also significant with those who lost an immediate family member, showing higher levels of CG symptoms compared to those who lost an extended family member or friend (Estimate = $.32$, $p < .001$). There was also a significant indirect pathway from relationship to the deceased to CG symptoms through ISLES scores (Estimate = $.20$, $p < .001$). The direct effect of losing an immediate family member on CG symptoms was still found to be statistically significant (Estimate = $.13$, $p < .001$) even after accounting for the indirect effects through meaning made of loss. The presence of significant direct and indirect effects for the association between loss of an immediate family member and increased CG symptoms suggests that meaning made of loss may only partially mediate this association.

Age and years of education were examined as covariates in the model. Older individuals were more likely to have made meaning of the loss (Estimate = $.18$, $p < .001$) and were less likely to develop CG symptoms (Estimate = $-.05$, $p < .05$). Years of education was not significantly related to either meaning made of the loss (Estimate = $.04$, $p = .18$) or CG symptoms (Estimate = $.02$, $p = .48$).

Subsidiary Analyses

Analyses were conducted to test the invariance of the tested model across subgroups. Model invariance was tested with the Satorra-Bentler scaled chi-square

difference test (Satorra, 2000). The test was not statistically significant when comparing the model for men and women ($\chi^2(9) = 4.79, p = .85$), indicating that the model was not significantly different as a function of gender. The test was also not statistically significant when comparing Caucasians with ethnic minority individuals ($\chi^2(9) = 11.16, p = .26$).

The model was also tested separately with both subscales of the ISLES, Comprehensibility and Footing in the World, as mediators. With Comprehensibility as a mediator, the model was just-identified and provided perfect fit to the data, $\chi^2(0) = 0.00, p < .001$; CFI = 1.00; SRMR = 0.00; RMSEA = 0.00, 90% CI = 0.00 – 0.00. Violent causes of death were associated with less Comprehensibility (Estimate = $-.33, p < .001$). More Comprehensibility was associated with lower ICG-R scores (Estimate = $-.59, p < .001$). A significant indirect pathway was found from cause of death to ICG-R scores via Comprehensibility (Estimate = $.19, p < .001$). Cause of death was not significantly associated with ICG-R scores (Estimate = $.01, p = .77$) after accounting for indirect effects. In this model, a closer relationship to the deceased was associated with lower scores on the Comprehensibility subscale (Estimate = $-.18, p < .001$). A significant indirect pathway was also found from relationship to the deceased to ICG-R scores via Comprehensibility (Estimate = $.10, p < .001$). A closer relationship to the deceased was associated with higher ICG-R scores even after accounting for indirect effects (Estimate = $.19, p < .001$).

When Footing in the World was specified as a mediator, the model was just identified and provided a perfect fit to the data, $\chi^2(0) = 0.00, p < .001$; CFI = 1.00; SRMR = 0.00; RMSEA = 0.00, 90% CI = 0.00 – 0.00. Violent causes of death were associated

with less Footing in the World (Estimate = $-.17$, $p < .001$). More Footing in the World was associated with lower ICG-R scores (Estimate = $-.67$, $p < .001$). A significant indirect pathway was found from cause of death to ICG-R scores via Footing in the World (Estimate = $.12$, $p < .001$). In this case, violent causes of death were still directly associated with higher ICG-R scores (Estimate = $.08$, $p = .001$), even after accounting for indirect effects. A closer relationship to the deceased was associated with less Footing in the World (Estimate = $-.26$, $p < .001$). A significant indirect pathway was found from relationship to the deceased to ICG-R scores through Footing in the World (Estimate = $.17$, $p < .001$). Loss of an immediate family member was associated with higher ICG-R scores (Estimate = $.12$, $p < .001$), even after accounting for indirect effects.

Additional analyses were conducted to assess whether or not dichotomizing relationship to the deceased as immediate family members versus extended family members and friends was consistent with these data. A one-way between subjects ANOVA was conducted to compare the effect of relationship to the deceased on ISLES scores. A significant difference was found between the groups ($F(8,716) = 10.93$, $p < .001$). Tukey's HSD test was used for all post-hoc analyses. Results indicated the mean ISLES scores for losing a grandparent ($M = 63.32$, $SD = 12.42$) and aunt/uncle ($M = 63.66$, $SD = 12.34$) were significantly higher than for the loss of a parent ($M = 52.89$, $SD = 13.59$), sibling ($M = 50.73$, $SD = 10.95$), child ($M = 49.64$, $SD = 13.95$), spouse/partner ($M = 48.43$, $SD = 13.11$), and friend ($M = 56.34$, $SD = 10.01$).

A significant difference was found between the same groups when comparing ICG-R scores ($F(8, 732) = 11.58$, $p < .001$). Results indicated the mean ICG-R score for losing a parent ($M = 72.09$, $SD = 23.65$) was significantly higher than for losing a

grandparent (M = 52.72, SD = 21.35), cousin (M = 47.46, SD = 19.54), aunt/uncle (M = 49.70, SD = 23.10), friend (M = 59.88, SD = 17.34), and other relationships (M = 57.60, SD = 22.13). ICG-R scores for losing a sibling (M = 74.65, SD = 24.97) were significantly higher than for the loss of a grandparent, cousin, and aunt/uncle. ICG-R scores for the loss of a child (M = 81.00, SD = 27.08) were significantly higher than for the loss of a grandparent, aunt/uncle, and other relationship. The loss of a spouse/partner (M = 81.29, SD = 30.00) resulted in significantly higher ICG-R scores than for the loss of a grandparent and aunt/uncle. The loss of a friend resulted in significantly higher scores than the loss of a grandparent and aunt/uncle, in addition to the above stated comparisons. All other comparisons were not significantly different.

Additional analyses were also conducted to assess whether or not dichotomizing cause of death as violent causes of deaths versus natural and other causes of death was consistent with these data. A significant difference was found when comparing different causes of death on ISLES scores ($F(5, 719) = 16.89, p < .001$). The mean of ISLES scores from loss from a natural, anticipated death (M = 64.36, SD = 12.82) was significantly higher than the means of natural sudden (M = 58.04, SD = 12.72), accident (M = 54.89, SD = 10.21), suicide (M = 55.27, SD = 9.14), homicide (M = 54.48, SD = 12.24), and other causes of death (M = 56.47, SD = 12.08).

A significant difference was found when comparing cause of death on ICG-R scores as well ($F(5, 735) = 10.45, p < .001$). The mean of ICG-R scores from a natural, anticipated death (M = 51.15, SD = 21.31) was significantly lower than natural anticipated (M = 58.82, SD = 23.40), accident (M = 66.00, SD = 21.10), suicide (M =

62.73, SD = 21.38), homicide (M = 64.04, SD = 21.91), and other causes of death (M = 60.26, SD = 22.25).

As a result of these findings, further analyses were conducted to test a model where cause of death was dichotomized as anticipated causes of death versus sudden causes of death, and relationship to the deceased was dichotomized as the loss of any family member versus the loss of a friend. The full model was just-identified, and therefore provided perfect fit to the data, $\chi^2(0) = 0.00, p < .001$; CFI = 1.00; SRMR = 0.00; RMSEA = 0.00, 90% CI = 0.00 – 0.00. Sudden causes of death were associated with less meaning made of the loss (Estimate = $-.29, p < .001$). Meaning made of the loss was associated with fewer CG symptoms (Estimate = $-.73, p < .001$). There was a significant indirect pathway from cause of death to CG symptoms through meaning made of the loss (Estimate = $.21, p < .001$). A sudden cause of death was not directly associated with CG (Estimate = $.03, p = .35$) after accounting for indirect effects. The total effect of cause of death on CG was significant (Estimate = $.24, p < .001$).

The loss of a family member (vs. a friend) was not associated with meaning made of the loss (Estimate = $.03, p = .42$). The indirect pathway to CG symptoms through meaning made of the loss was not significant (Estimate = $-.02, p = .42$). The loss of a family member was associated with more CG symptoms (Estimate = $.05, p < .05$) even after accounting for indirect effects through meaning made of loss. The total effects of relationship to the deceased on CG was not significant (Estimate = $.04, p = .30$).

CHAPTER 5: DISCUSSION

This study examined meaning made of loss as a potential mediator between objective circumstances of a death and complicated grief (CG) symptoms. Several conclusions can be drawn from these results. First, these findings show that meaning made of loss, as measured by the Integration of Stressful Life Events Scale (ISLES), acted as a significant mediator between objective risk factors (i.e., cause of death and relationship to the deceased) and the development of CG symptoms. More specifically, meaning made of the loss fully mediated the association for cause of death, in that the direct effect of violent causes of death on CG symptoms was no longer statistically significant after accounting for the indirect effect through meaning made of loss. In contrast, meaning made of loss seemed to act as a partial mediator for relationship to the deceased, with the loss of an immediate family member still being significantly associated with higher levels of CG, above and beyond indirect effects through meaning made of loss. This model was also found to be invariant across gender and racial/ethnic groups. When the two ISLES subscales were examined separately as mediators, Comprehensibility fully mediated the association between cause of death and CG symptoms, and Footing in the World acted as only a partial mediator for this association.

The finding that meaning made of the loss mediates the association between objective circumstances of the loss and CG is consistent with our initial hypothesis and fits with previous studies. For example, Currier, Holland, & Neimeyer (2006) found that a one-item measure of meaning making mediated the relationship between cause of death and CG. The present findings also add to a broader literature that has shown that being able to explain and understand stressful events is a robust predictor of better

psychological health, including less psychiatric stress, less workplace burnout, and fewer PTSD symptoms (Currier et al., 2013; Currier, Holland, Christy, & Allen, 2011; Holland et al., 2010). Overall, the current study provides additional support for Park's (2010) Meaning-Making Model. In particular, this model proposes that when difficult life events challenge our basic beliefs about the world, successful adaptation largely depends upon one's ability to make meaning of the event and reconcile the discrepancy between global meaning (i.e., overall beliefs, values, goals) and appraisals of the stressor.

Also consistent with Currier, Holland, & Neimeyer's (2006) findings, meaning made of the loss fully mediated the association between cause of death and CG symptoms. However, it only partially mediated the association between relationship to the deceased and CG, indicating that there are likely other important variables that may explain this link. Although we can only speculate, one additional explanatory variable could be subjective closeness to the deceased. For example, the loss of a sibling may have been more likely to result in greater difficulty with meaning making if the sibling lived in the same household with the bereaved growing up and they remained in close contact, compared to a situation where they lived in separate households and/or felt distant from one another. Dependency on the deceased before their death is another variable not measured in this study that could potentially further explain the association between the loss of an immediate family member and increased CG. Notably, dependency (both in general and specific to the deceased) has been shown to uniquely identify those with a chronic grief trajectory (Bonanno et al., 2002; Denckla, Mancini, Bornstein, & Bonanno, 2011). Attachment style may also play a significant role, as

insecure attachment in children is predictive of future CG symptoms as an adult (Lobb et al., 2010).

Subsidiary analyses also indicated that the Comprehensibility subscale of the ISLES may act as a better mediator for the association between cause of death and CG, compared to the Footing in the World subscale. This finding is consistent with previous research that has shown that violent losses and events are more closely linked with scores on the Comprehensibility subscale compared to the Footing in the World subscale (Holland, Currier, Coleman, & Neimeyer, 2010; Holland, Currier, & Neimeyer, 2014). It has been proposed that Comprehensibility addresses meaning made of loss through assimilative processes. Rynearson (1994) theorizes that violent losses are often perceived as an act of volition, which makes them particularly difficult to assimilate within existing beliefs about the benevolence of other people and the safety of the world. Thus, the Comprehensibility subscale may be particularly well suited to capture the difficulties with assimilating violent losses into existing global beliefs.

The mediational model tested in this study was also a good fit across genders and racial/ethnic groups. This finding fits with previous research showing that meaning made of stress (as assessed by the ISLES) predicts adjustment to difficult life events similarly for men and women (Lancaster & Carlson, in press). Other studies have also shown that meaning making is an important process cross-culturally, including both racial/ethnic minorities in the United States (Wang, Koh, & Song, 2014) and individuals in other countries (Currier et al., 2013; Tuval-Mashiach & Dekel, 2014). This suggests that being able to make sense of an event is an important process that people from different cultures engage in when faced with stressful life events. Different cultures may arrive at different

meanings or look for different answers, but the importance of finding meaning in stressful life events appears to be a relatively universal phenomenon.

Age was found to be a protective factor in our sample. Older individuals made more meaning of their loss and experienced less CG. This finding is consistent with previous findings of meaning made of loss as measured by the ISLES (Holland, Currier, & Neimeyer, 2014). It could be that older individuals are more likely to have experienced a greater number of stressful life events, resulting in a more skilled and efficient meaning making processes. Such an explanation would fit with previous longitudinal research showing that, as they age, adults are more efficient in their coping and invest less energy in a variety of coping strategies, including positive re-appraisal and logical analysis (Brennan, Holland, Schutte, & Moos, 2012). It should be noted, however, that our sample was made up of college students, so it is difficult to generalize these findings to older adults. Future research should focus on meaning making across the lifespan.

There are several limitations to this study. First, this study utilized a cross-sectional design, and so causal statements about the role of meaning made of loss cannot be made. Although it was theorized that meaning made of loss predicts the development of CG, it could be that CG is what ultimately results in less meaning made of loss. Future studies should examine these constructs using a longitudinal design to determine the directionality of this association. Second, this sample was comprised of college students at one university and only represents a narrow set of the population of bereaved individuals. Future research should try to replicate these findings across groups that differ with regard to age, socioeconomic status, level of education, and geographic location. Third, in this study relationship to the deceased was examined as an independent

variable, in the absence of a more fine-grained assessment of subjective closeness to the deceased. A more nuanced measure of relational closeness/quality may explain why meaning made of the loss was only a partial mediator between relationship to the deceased and CG. Finally, the degree of trauma associated with violent causes of death may fall along a continuum that varies depending on exposure to the event. Future research should examine if there is a difference in meaning making and CG for individuals who only hear about the death compared to individuals who witnessed the death firsthand.

These results have important clinical implications. Specifically, assessment tools and interventions have been developed that are based on a model of grief that views meaning making as a crucial determinant of adjustment to loss. These findings provide empirical evidence for such a model, and by extension, they indirectly support clinical applications based on a meaning-oriented theoretical model. From an assessment standpoint, the ISLES is a relatively brief measure that has been used to track changes in a treatment context (Holland, in press; Holland, Chong, Currier, O'Hara, & Gallagher-Thompson, in press), and these results provide additional support for its use with bereaved clients who have experienced a range of losses in terms of relationship to the deceased and cause of death. In terms of treatment, numerous bereavement interventions have been developed that emphasize the importance of meaning-making, including life review, retelling the death narrative, reworking the continuing bond, and empty chair work, just to name a few (Neimeyer & Holland, in press). This study provides further support for the notion that meaning made of loss may be a relevant target for

bereavement interventions, particularly those that involve violent causes of death and the loss of primary attachment figures.

Appendix A

Table 1
Demographic and Loss Information for the Bereaved Sample

	N = 741
Age (years)	M = 21.64 SD = 6.11
Sex:	
Women	590 (79.6%)
Men	151 (20.4%)
Ethnicity:	
Caucasian	335 (45.2%)
African American	289 (39.0%)
Asian	24 (3.2%)
Hispanic/Latino	52 (7.0%)
Other	41 (5.5%)
Education Level:	
Some Grade School	2 (0.3%)
Finished Grade School	3 (0.4%)
Attended High School	22 (3.0%)
High School Equivalency	87 (11.7%)
High School Graduate	110 (14.8%)

Some College/Trade School	222 (30.0%)
Associate's Degree	57 (7.7%)
Bachelor's Degree	141 (19.0%)
Graduate School	97 (13.1%)

Relationship to the Deceased:

Immediate Family	99 (13.40%)
Extended Family	403 (54.30%)
Friend	146 (19.70%)
Other Non-Family	56 (7.60%)

Cause of Death:

Natural Anticipated	305 (41.2%)
Natural Sudden	157 (21.2%)
Accident	121 (16.3%)
Suicide	40 (5.4%)
Homicide	48 (6.5%)
Other (e.g. perinatal)	70 (9.4%)

Appendix B

Table 2
Correlation Matrix for Examined Variables

	1	2	3	4	5	6	7
1. Age	--						
2. Gender	-.01	--					
3. Education	.00	-.02	--				
4. Cause of Death	-.03	.02	-.01	--			
5. Relationship to Deceased	.21**	.02	-.04	.12*	--		
6. ISLES total	.14**	-.04	.05	-.26**	-.24**	--	
7. ICG-R total	-.13**	.08*	-.03	.21**	.29**	-.73**	--

Note: * $p < .05$, ** $p < .01$.

Appendix C

Table 3
Direct and Indirect Effects in the Path Analysis

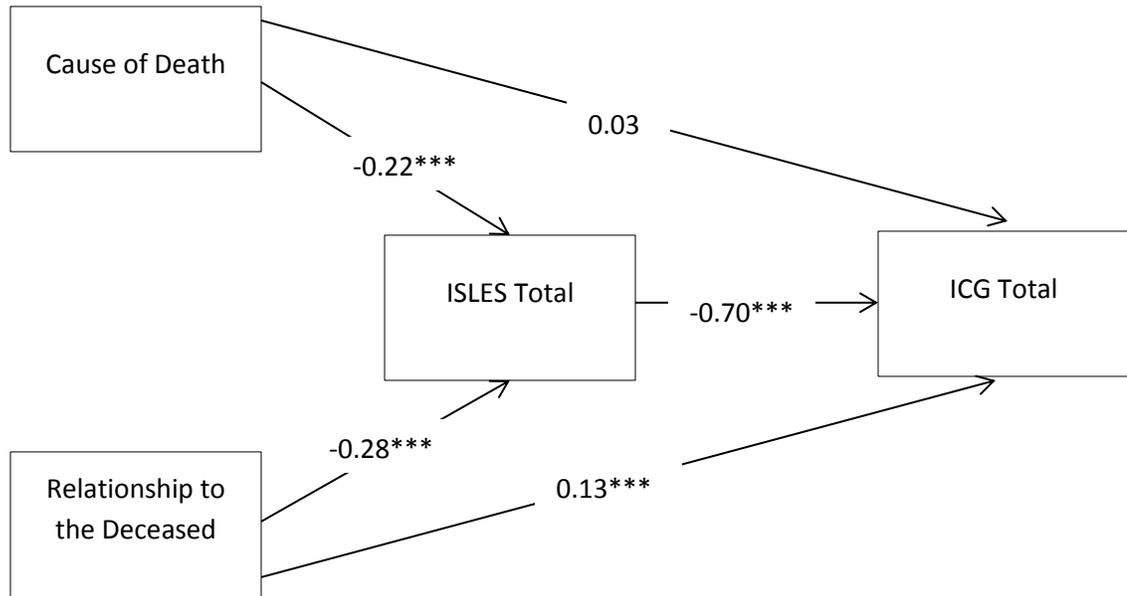
Cause of Death	CG Symptoms
Indirect (through Meaning Made)	.15***
Direct	.03
Total	.18***
Relationship to the Deceased	
Indirect (through Meaning Made)	.20***
Direct	.13***
Total	.32***

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

Appendix D

Figure 1

Path Model with Coefficients



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

Appendix E

Proposed criteria for Prolonged Grief Disorder in ICD-11

Category	Definition
A.	<u>Event:</u> Bereavement (loss of a significant other)
B.	<u>Separation distress:</u> The bereaved person experiences yearning (e.g., craving, pining, or long for the deceased; physical or emotional suffering as a result of the desired, but unfulfilled, reunion with the deceased) daily or to a disabling degree.
C.	<p><u>Cognitive, emotional, and behavioral symptoms:</u> The bereaved person must have five (or more) of the following symptoms experienced daily or to a disabling degree:</p> <ol style="list-style-type: none"> 1. Confusion about one's role in life or diminished sense of self (i.e., feeling that a part of oneself has died) 2. Difficulty accepting the loss 3. Avoidance of reminders of the reality of the loss 4. Inability to trust others since the loss 5. Bitterness or anger related to the loss 6. Difficulty moving on with life (e.g., making new friends, pursuing interests) 7. Numbness (absence of emotion) since the loss 8. Feeling that life is unfulfilling, empty, or meaningless since the loss 9. Feeling stunned, dazed or shocked by the loss
D.	<u>Timing:</u> Diagnosis should not be made until at least six months have elapsed since the death
E.	<u>Impairment:</u> The disturbance causes clinically significant impairment in social, occupational, or other important areas of functioning (e.g., domestic responsibilities)
F.	<u>Relation to other mental disorders:</u> The disturbance is not better accounted for by major depressive disorder, generalized anxiety disorder, or posttraumatic stress disorder

Appendix F

Inventory of Complicated Grief - Revised

Please mark the box next to the answer that best describes how you have been feeling over the past month. The blanks refer to the deceased person over whom you are grieving.

- 1 = Almost never - less than once a month
2 = Rarely - one a month or more, less than once a week
3 = Sometimes - one a week or more, less than once a day
4 = Often - once every day
5 = Always - several times every day

1. The death of _____ feels overwhelming or devastating.
2. I think about _____ so much that it can be hard for me to do the things I normally do.
3. Memories of _____ upset me.
4. I feel that I have trouble accepting the death.
5. I feel myself longing and yearning for _____.
6. I feel drawn to places and things associated with _____.
7. I can't help feeling angry about _____'s death.
8. I feel disbelief over _____'s death.
9. I feel stunned, dazed or shocked over _____'s death.
10. Ever since _____ died it is hard for me to trust people.
11. Ever since _____ died I feel like I have lost the ability to care about other people or I feel distant from people I care about.
12. I have pain in the same area of my body, some of the same symptoms, or have assumed some of the behaviors or characteristics of _____.
13. I go out of my way to avoid reminders that _____ is gone.
14. I feel that life is empty or meaningless without _____.
15. I hear the voice of _____ speak to me.
16. I see _____ stand before me.
17. I feel like I have become numb since the death of _____.
18. I feel that it is unfair that I should live when _____ died.

19. I am bitter over _____'s death.
 20. I feel envious of others who have not lost someone close.
 21. I feel like the future holds no meaning or purpose without _____.
 22. I feel lonely ever since _____ died.
 23. I feel unable to imagine life being fulfilled without _____.
 24. I feel that a part of myself died along with the deceased.
 25. I feel that the death has changed my view of the world.
 26. I have lost my sense of security and safety since the death of _____.
 27. I have lost my sense of control since the death of _____.
 28. I believe that my grief has resulted in significant impairment in my social, occupational or other areas of functioning.
 29. I have felt on edge, jumpy or easily startled since the death.
 30. Since the death, my sleep has been... 1 = Basically okay; 2 = Slightly disturbed; 3 = Moderately disturbed; 4 = Very disturbed; 5 = Extremely disturbed
-
31. How many months after your loss did these feeling begin?
 32. How many months have you been experiencing these feelings? (0 = Never)
 33. Have there been times when you did not have pangs of grief and then these feelings began to bother you again? Yes/No
 34. Can you describe how your feelings of grief have changed over time?

Appendix G

The Integration of Stressful Life Experiences Scale (ISLES)

Please indicate the extent to which you agree or disagree with the following statements with regard to (the most stressful life event you experienced in the past two years). Read each statement carefully and be aware that a response of agreement or disagreement may not have the same meaning across all items.

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
1. Since this event, the world seems like a confusing and scary place.	1	2	3	4	5
2. I have made sense of this event.	1	2	3	4	5
3. If or when I talk about this event, I believe people see me differently.	1	2	3	4	5
4. I have difficulty integrating this event into my understanding about the world.	1	2	3	4	5
5. Since this event, I feel like I'm in a crisis of faith.	1	2	3	4	5
6. This event is incomprehensible to me.	1	2	3	4	5
7. My previous goals and hopes for the future don't make sense anymore since this event.	1	2	3	4	5
8. I am perplexed by what happened.	1	2	3	4	5
9. Since this event happened, I don't know where to go next in my life.	1	2	3	4	5
10. I would have an easier time talking about my life if I left this event out.	1	2	3	4	5
11. My beliefs and values are less clear since this event.	1	2	3	4	5
12. I don't understand myself anymore since this event.	1	2	3	4	5
13. Since this event, I have a harder time feeling like I'm part of something larger than myself.	1	2	3	4	5
14. This event has made me feel less purposeful.	1	2	3	4	5

15. I haven't been able to put the pieces of my life back together since this event.	1	2	3	4	5
16. After this event, life seems more random.	1	2	3	4	5

Note: With the exception of item 2 (which should be reverse scored), all items should be scored using the 1 (Strongly agree) to 5 (Strongly disagree) format presented above. A sum of all items can be taken to compute a total ISLES score. Likewise, items 1, 3, 5, 7, 9, 11, 12, 13, 14, 15, and 16 can be summed to compute the Footing in the World subscale, and items 2, 4, 6, 8, and 10 can be summed to compute the Comprehensibility subscale. The portion of the instructions in parentheses may be altered to make the measure applicable to different groups of interest.

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Curriculum Vitae

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EDUCATIONAL HISTORY

UNIVERSITY OF NEVADA, LAS VEGAS 2012-Present

Degree: Ph.D. (Expected Graduation, August 2018)
Program: Clinical Psychology Doctoral Program
Advisor: Dr. Jason M. Holland, Ph. D.

BARD COLLEGE AT SIMON'S ROCK 2005-2009

Degree: B.A.
Major: Psychology and Pre-Medical Studies

PROFESSIONAL MEMBERSHIPS

APA Student Affiliate

RESEARCH INTERESTS

I am interested in the etiology, diagnosis, and treatment of Prolonged Grief Disorder, as well as the experience of coping with trauma, factors that relate to trauma resiliency, and emotion regulation. More specifically, I am interested in how people who experience extremely stressful events integrate those experiences into their lives and reformulate their sense of identity, including those who never fully recover from such experiences. I am also interested in different personality factors that influence the way individuals experience and react to grief, trauma, and stress.

AUTHORED RESEARCH ARTICLES

Holland, J. M., Graves, S., Thompson, K. L., **Rozalski, V.** (in press). Prolonged grief symptoms related to loss of physical functioning: Examining unique associations with medical service utilization. Manuscript under review.

Currier, J. M., Holland, J. M., **Rozalski, V.**, Thompson, K. L., Rojas-Flores, L., & Herrera, S. (2013). Teaching in violent communities: The contribution of meaning

made of stress on psychiatric distress and burnout. *International Journal of Stress Management*, 20(3), 254-277. doi: 10.1037/a0033985

Holland, J.M., **Rozalski, V.**, Thompson, K.L., Tionsgson, R.J., Schatzberg, A.F., O'Hara, R., & Gallagher-Thompson, D. (2013). The unique impact of late-life bereavement and prolonged grief on diurnal cortisol. *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, doi:10.1093/geronb/gbt051

Holland, J.M., Thompson, K.L., **Rozalski, V.**, & Lichtenthal, W.G. (2013). Bereavement- related regret trajectories among widowed older adults. *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, doi:10.1093/geronb/gbt050

MANUSCRIPTS UNDER REVIEW

Benning, S. D., **Rozalski, V.**, Thompson, K. L. (2014). Trait absorption is related to enhanced emotional picture processing and reduced activity to secondary acoustic probes. Manuscript under review.

MANUSCRIPTS IN PREPARATION

Holland, J.M., **Rozalski, V.** (2014). Meaning making and hopelessness in older adults with chronic illness.

POSTERS AND PRESENTATIONS

Rozalski, V. & Holland, J. M. (2015). Meaning made of loss, circumstances of death, and complicated grief. Paper accepted by Western Psychological Association, Las Vegas, NV, USA.

Rozalski, V. & Holland, J. M. (2014). Objective circumstances of the death and complicated grief: Examining indirect associations through meaning made of loss. Poster presented at the American Association of Behavioral and Social Sciences, Las Vegas, NV, USA.

RESEARCH EXPERIENCE

GRADUATE RESEARCH LAB ASSISTANT 2012-Present
UNLV Stressful Transitions and Aging Research Laboratory
Supervisor: Dr. Jason M. Holland, Ph.D.

Co-author manuscripts, assist with literature reviews and data analysis, co-supervise undergraduate research assistants, and attend didactic seminars on a variety of topics (e.g., related to data analysis, APA style).

GRADUATE RESEARCH LAB ASSISTANT 2012-2014

UNLV Psychophysiology of Emotion and Personality Laboratory
Supervisor: Dr. Stephen D. Benning, Ph.D.

Conducted research sessions with participants that included connecting them to complex psychophysiological sensors such as an EEG cap, learn how to read and interpret EEG and peripheral signals, troubleshoot problems with signal interference, coordinate data collection and stimuli presentation, co-author manuscripts, assist with literature reviews, co-supervise undergraduate research assistants, and attend didactic seminars on a variety of topics (e.g., related to data analysis, APA style).

CAL MANIA RESEARCH LAB 2011-2012
University of California, Berkeley
Supervisor: Dr. Sheri Johnson, Ph.D.

Conducted research sessions with participants that included connecting them to psychophysiological sensors to take objective data, administering cognitive tasks, and administering surveys. Conducted phone interviews with potential participants to assess for a history of Bipolar I and Bipolar II.

GOLDEN BEAR SLEEP AND MOOD RESEARCH LAB 2011-2012
University of California, Berkeley
Supervisor: Dr. Allison Harvey, Ph.D.

Conducted pre- and post-treatment sessions for an RCT that included connecting participants to psychophysiological sensors to take objective data, administering cognitive tasks, and administering surveys. Generated and organized treatment manuals, organized and entered new data from each session of the RCT.

CLINICAL EXPERIENCE

STUDENT CLINICIAN 2014-Present
Veteran's Affairs Southern Nevada Healthcare System
Las Vegas, NV

Conduct individual psychotherapy and intake assessments under supervision of a Licensed Clinical Psychologist with veterans who have served in wars ranging from the Vietnam era to present. Clients have a multitude of presenting problems, including PTSD, grief, depression, anxiety, marital problems, parenting problems, chronic pain management, and substance abuse. Interventions include Cognitive Processing Therapy for trauma and Cognitive Behavioral Therapy.

STUDENT CLINICIAN 2013-Present
University of Nevada, Las Vegas
Las Vegas, NV

Conduct psychodiagnostic assessments and individual therapy under supervision of a Licensed Clinical Psychologist, attend didactic seminars on treatment modalities, present at and attend student case conferences, consult with other treatment professionals. Theoretical orientations and interventions include Acceptance and Commitment Therapy and Dialectical Behavioral Therapy.

COUNSELOR AND RELIEF COUNSELOR 2011-2012
Progress Foundation
San Francisco, CA

Conducted intake interviews for new clients in a residential mental health setting, created treatment plans with new clients, lead group counseling sessions on a wide range of topics, including CBT concepts, relapse prevention, experiences in the mental health system, and activities of daily living, counseled clients individually, and resolved conflicts between clients

SUICIDE PREVENTION HOTLINE TELEPHONE COUNSELOR 2010-2011
The Effort
Sacramento, CA

Answered calls from local and national lines for callers in crisis, assisted lethality of each caller, triaged callers based on lethality, used active listening skills and empathy during caller's narrative, disabled suicide plans and created safety plans with each caller, documented each call thoroughly

TEACHING EXPERIENCE

GRADUATE STUDENT INSTRUCTOR 2014 Fall
University of Nevada, Las Vegas
Psychology 101: General Psychology (2 sections)

SERVICE

Ad-hoc reviewer: Journal of Gerontology 2012
Ad-hoc reviewer: International Journal of Therapy and Rehabilitation 2013
Ad-hoc reviewer: Death Studies 2013-Present