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Bereavement among Urban University Students: The Role of Meaning Making in Adjustment to Loss

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BEREAVEMENT AMONG URBAN UNIVERSITY STUDENTS: THE ROLE OF MEANING MAKING IN ADJUSTMENT TO LOSS

A Dissertation Presented

by

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ABSTRACT

BEREAVEMENT AMONG URBAN UNIVERSITY STUDENTS: THE ROLE OF MEANING MAKING IN ADJUSTMENT TO LOSS

December 2012

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Employing Neimeyer's theory of meaning reconstruction as a guiding framework, this study examined meaning making in a diverse sample of bereaved university students. The aims of this study were to 1) identify types of meanings made about loss, 2) examine socio-demographic and bereavement-related characteristics that might influence meaning making, and 3) investigate associations between types of meanings and post-loss psychological adjustment. Participants were 229 students from an urban commuter university. This was a cross-sectional study, employing self-report data collected on a secure, Web-based system. Participants were 18 years or older and had experienced the loss of a friend or family member within the last three years. Bereavement-related meaning making was assessed using four measures of sense-making, cognitive appraisal, religious/spiritual meaning, and impact on identity. Participants were diverse in age (18 – 61 years, $\underline{M} = 24.18$), race (55%

White/Caucasian, 15.3% Asian, 14.4% Latino/a, 14.4% Black/African American, and 10.4% multi-racial/other), and religious background (25% atheist, 28% agnostic, 53% affiliated with a religion, and 6% spiritual/not religious). The majority lost a family member (66.7%), rather than a friend. Cause of death was due to natural (64.5%) or unnatural/violent causes and the mean time since death was 17.2 months. Principal Components Analysis identified five interpretable factors of meaning making: 1) personal growth, 2) positive reframing, 3) spiritual/religious meaning, 4) causal attribution, and 5) rumination/impact on identity. After controlling for covariates, each of the factors was regressed onto positive affect (PANAS), depression (CES-D), posttraumatic stress (PCL-S), and prolonged grief (PGD-13). Results of this study indicated that bereaved students made positive and negative secular and religious meanings about loss. Meaning making factors were influenced by socio-demographic and bereavement-related characteristics, in particular a closer relationship with the deceased, cause of death due to unnatural/violent causes, and younger age of the deceased when he or she died. These characteristics may make it more difficult for survivors to make sense and find meaning in a loss. Difficulty making sense was associated with higher distress, including symptoms of depression, PTSD, and prolonged grief as well as lower positive affect. Future studies are warranted to examine specific cultural influences and the clinical significance of ascribing meaning to loss among underserved groups.

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CHAPTER 1

INTRODUCTION

Stressful and traumatic events, including the death of a loved one, can cause people to search for meaning in suffering (Janoff-Bulman & McPherson Frantz, 1997; Neimeyer, 2000). Balk, Walker, and Baker (2010) found high rates of bereavement among college students – 39% reportedly experienced the death of a close friend or family member within the last 24 months (with 30% of the 39% in the last 12 months). However, few studies have examined how college students make sense of the death of a loved one. Even less is known about meaning making among undergraduate and graduate student populations as it relates to age, socioeconomic status, religion, race, and ethnicity.

Although meaning making has been studied in relation to post-bereavement adjustment among a variety of different types of loss, results from these studies are conflicting. Some findings suggest that meaning making is associated with positive adaptation from bereavement (Davis, Nolen-Hoeksema, & Larson, 1998; Holland, Currier, & Neimeyer, 2006) while in contrast, results from other bereavement studies suggest that meaning making is related to increases in distress and negative adjustment (Currier, Holland, & Neimeyer, 2006; Wu et al., 2008).

These inconsistent results may be caused by conceptual and methodological limitations. For example, most bereavement and non-bereavement studies of meaning making assess the construct using a single-item question, such as "have you searched for meaning or sense in this death?" or "have you found meaning or sense in this death?" Although there is an argument for the efficacy of single-item measurement for meaning making (Gardner, Cummings, Dunham, & Pierce, 1998) several researchers call for the development of more sensitive quantitative methods of measurement (Gillies & Neimeyer, 2006; Keesee, Currier, & Neimeyer, 2008). Gillies and Neimeyer (2006) suggested that a measure should be able to discern the differences between profiles of "meaning-makers" that can be used to look at relationships between contextual factors and outcomes.

Theoretical Perspectives on Meaning Making

One of the earliest theories that addressed meaning making is by existential psychologist, Frankl (1959). Frankl's theory of *logotherapy* was based on his own personal experiences as a Holocaust survivor. Frankl's *logotherapy* countered the dominant theories of the time – psychoanalysis and behaviorism – by highlighting existential questions relating to life and death and emphasizing meaning making as a personal choice and personal responsibility. Frankl suggested that the "will" to find meaning in suffering was associated with positive adjustment because suffering is alleviated when there is a purpose ascribed to sacrifice. Later, Yalom (2008) theorized that significant losses can function as an "awakening experience," reminding those afflicted with losses to reflect on their existence and mortality. After being primed by the confrontation with loss, Yalom (2008) suggested that many people are motivated to make decisions in life that lead to more satisfaction, fulfillment, and well-being.

Current meaning making literature suggests that overwhelming, potentially traumatic events often compel people to search for meaning (Janoff-Bulman & McPherson Frantz, 1997; Neimeyer, 2000; Park & Folkman, 1997). A dominant theme throughout the meaning making literature is the idea that a potentially traumatic event "shatters core assumptions" about the world and self (Janoff-Bulman, 1992, p. 51). At the root of this theory is the central idea that people perceive the world to have some sense of order and predictability (Janoff-Bulman, 1992; Janoff-Bulman & McPherson Frantz, 1997). Therefore, a potentially traumatic event, including bereavement, can turn someone's world upside down. The search for meaning and understanding, following these types of events, arises as an attempt to restore order and predictability out of this chaos. In addition to Janoff-Bulman, other theorists exploring how individuals cope with stressful life events have centered their work on core assumptions about the world and the self and how these ideas relate to adjustment (Antonovsky, 1987; Neimeyer, 2000; Park & Folkman, 1997).

Historically, a two-part conceptualization of meaning making of stressful life events has been used. This conceptualization is based on Janoff-Bulman and Frantz's (1997) theory of *meaning-as-comprehensibility* and *meaning-as-significance*. Meaning-as-comprehensibility refers to a person's attempt to "make sense" or understand the question, "why me?" by providing causal explanations or reasons for why the event happened. Taylor (1983) proposed that survivors make meaning of traumatic events by attempting to understand the cause of the event (i.e., that a loved one died of cancer due to heredity, diet, stress, carcinogens, etc.). However, others have suggested that negative attributions are also used to make sense of a traumatic event. For example, Janoff-Bulman and Frantz (1997) suggested that self-blame, may be one type of attribution used to "make sense" and regain

order and control. Self-blame or blaming others are negative attributions used to "minimize or eliminate the threatening, meaningless implications of their traumatic experiences" (Janoff-Bulman & McPherson Frantz, 1997, p. 97). Meaning-as-significance is defined as the effort to find value or significance in the event. If meaning-as-comprehensibility is the need to understand why a crisis occurred meaning-as-significance is the need to understand the crisis' impact on survivors' lives. These efforts lead to perceived, positive benefits as a result of the traumatic experience such as closer relationships, personal strength, or enhanced spirituality. Davis, Nolan-Hoeksema, and Larson (1998) conceptualized bereavement-related meaning making as consisting of two aspects: making sense of the loss and finding positive benefits, similar to Janoff-Bulman and Frantz's (1997) theory of meaning-as-comprehensibility and meaning-as-significance. Davis, Nolan-Hoeksema, and Larson (1998) define sense-making as "whether a particular event fits into one's conception of how the world is supposed to work (p. 562)", whereas they define benefit-finding as the perception of positive benefits stemming from the experience of adversity. They found distinct differences between "sense-making" and "benefit-finding" among individuals coping with loss and thus, many grief researchers who study meaning making have adapted this two-part conceptualization.

Neimeyer, however, presents a broader theoretical framework for meaning making that is specific to bereavement and incorporates socio-cultural and relational elements (Neimeyer, 2000; Neimeyer, Prigerson, & Davies, 2002). In this framework, "meaning-reconstruction" is considered not only as an intrapersonal process, but as an interpersonal process, anchored in cultural and social contexts. Meaning making is achieved individually and interpersonally by constructing a cohesive narrative of the bereavement experience.

From this perspective, bereavement disrupts the narrative created about the self and the world because narratives about these things are co-constructed with the deceased. In addition to sense-making and benefit-finding components of meaning making in bereavement, Gillies and Neimeyer (2006) include identity change as part of their definition of meaning reconstruction.

In 2000, Neimeyer criticized existing research for the inherent bias in framing meaning making as an explicit, conscious, and cognitive process. He stated that meanings are also embedded within language and communicated through implicit and nonverbal behaviors and gestures. Similarly, Baumeister and Vohs (2004) suggested that meaning is created within culture. The authors stated that a person's cultural background is rich with traditions and rituals that are passed down through the generations. Baumeister and Vohs (2004) proposed that people receive and interpret symbols and connections between concepts through language and that implicit and explicit cultural messages would likely influence how people make meaning. Shapiro (1994; 2007) also argued for culturally competent thanatology and grief counseling through the systemic assessment of ecological systems and disparities that influence the mourner (e.g., race, ethnicity, gender, and economic disadvantage) including the availability of positive social and economic coping resources.

Neimeyer (2000) described religious rituals and spiritual beliefs as an integral part of the meaning making process. In a later publication, he and his colleagues referred to religion as the "structure for emotional chaos" (Neimeyer, Prigerson, & Davies, 2002, p. 237). He also stated that having a religious faith can help provide explanations of the death (Neimeyer, 2000). Other theorists have similarly argued that religiousness and spirituality

influence the development of meaning. For example, religion and spirituality may provide a framework for interpreting a stressor by creating a sense of meaning and purpose in suffering (McIntosh, 1995; Park, 2005a). Meaning may develop through the use of specific types of prayer or from social support received from a religious community (Aldwin, 1994; Pargament, Desai, & McConnell, 2006). Religious and spiritual beliefs may help people to reappraise stressful life events as less threatening or challenging, thus allowing them to recognize that positive changes can result from suffering (Aldwin, 1994).

Another useful aspect of Neimeyer's theory is that it proposed potential connections between meaning making and prolonged grief (Neimeyer, Prigerson, & Davies, 2002). Prolonged grief refers to a pathological response to bereavement, described (Prigerson, Frank, Kasl, & Reynolds, 1995) as "the failure to return to pre-loss levels of performance or states of emotional well-being" (p. 3). In their model, Neimeyer, Prigerson, and Davies (2002) suggested that normative and psychopathological grief reactions are mediated by the meaning constructed about the loss by the survivor – the meaning of grief can lead to psychological growth and transformation, or chronic depression and prolonged grief disorder. Neimeyer (2000) stated that traumatic losses cause high levels of arousal, which may inhibit a person's ability to form a coherent narrative. An unconstructed narrative may lead to more severe and prolonged grief reactions, including prolonged grief (Neimeyer, Prigerson, & Davies, 2002).

Stroebe and Shut (2001) developed another theory of meaning making specific to bereavement. In this theory, meaning making results from a dual-process model of coping with loss. A bereaved person fluctuates between two types of coping: loss-oriented and restoration-oriented coping. Loss-oriented coping refers to strategies used to work through

the loss (e.g., managing sadness, breaking bonds with the deceased, etc.). Restoration-oriented coping refers to strategies used to rebuild a life and to alter an identity post-loss. Both loss-oriented coping and restoration-oriented coping are thought to lead to "meaning reconstruction." Similar to Neimeyer's work, this theory usefully highlights both positive and negative meaning appraisals and notes relevant outcomes for each strategy. Positive meaning reconstruction, consisting of positive reappraisal strategies, revised goals, positive event interpretation, and the expression of positive affect, lead to positive adjustment. Negative meaning reconstruction, consisting of rumination, wishful thinking, revised, unstructured goals, and interpretation of the event in a negative light, lead to exacerbated grief and depression.

Armour (2006) and Rynearson (2001) provide further support for Neimeyer's theory. Armour (2006) suggested that traumatic losses, such as sudden deaths, that are violent in nature are thought to be experienced differently from non-violent and anticipated deaths (e.g. medical illness, natural disasters, etc.). Rynearson (2001) defined violent death as a fatality that involved injury and mutilation by the hand of a perpetrator (murderer) or by the deceased's own hand (suicide or fatal accident due to human error). Armour (2006) explained that unnatural/violent deaths such as these violate mourner's conceptions about the perceived order of the life cycle, humanity, and ideas about self-worth. Rynearson (2001) argued that violent deaths differ from natural deaths in that someone is at fault for a violent death, the deceased died by force, the body may have been injured or mutilated in the process, and that people mourning the loss of loved ones to violent deaths often are mandated to communicate with the police. In addition to all of these extenuating circumstances, there is no time to prepare for the loss when a loved one dies unexpectedly

(Armour, 2006). Armour (2006; 2010) also critiques the current conceptualization of meaning making as too narrowly confined to cognitive appraisals of loss, particularly for people who have experienced a violent loss of a loved one. She proposed a conceptualization of bereavement-related meaning making to include behavioral engagement in the "pursuit for what matters in life" and "grounded action." Examples of behavioral meaning making related to loss include participating in victim advocacy and volunteer work after bereavement from violent deaths.

Summary

Most theories and studies of meaning making have neglected relevant cultural, developmental, and relational aspects. Neimeyer's (2000) ideas concerning the religious and spiritual aspects associated with meaning making, the co-construction of meaning, cognitive processing of the loss through narrative reconstruction, and post-bereavement adjustment pathways fill missing gaps in the literature. However, few studies have been conducted to provide empirical evidence to support this theory. It is essential to continue to incorporate contextual aspects of meaning making as a response to bereavement into our theoretical understanding of meaning making. Additionally, further research is needed to verify the importance of context in the development of meaning related to loss as well as the relationship between meanings made about death and post-loss positive adaptation or distress. The following is a summary of selected, relevant research findings on meaning making and bereavement to date.

Research Findings

Potential Influences on Meaning making in the Aftermath of Bereavement

Contextual Factors

Although it is theorized that contextual factors influence meaning making among people who are mourning, few studies have empirically examined how these factors relate to meaning making. Rosenblatt and Wallace (2005) stated that it is problematic to assume that grief is similar for all people. In their qualitative study, they discussed the influence of racism, religion, importance of remaining strong, and scarce economic resources on the meaning making of death among African Americans. They suggested that although some grief reactions such as denial, shock, and sadness may be similar across all racial and ethnic groups, other grief responses likely vary by culture. For African Americans, the experience of loss and meaning making is likely influenced by their unique beliefs and values that stem from the historical context that includes slavery and oppression.

Furthermore, researchers from Hong Kong identified religious themes unique to the Chinese culture that were associated with attempts to make sense of death. These included karma, Feng Shui, and beliefs in the afterlife (Chan et al., 2005). These researchers also reported that meaning was made through cultural rituals that determine a "good death." These rituals included the importance of a son witnessing the death of his father and parents avoiding the funerals of their children. Another aspect of the bereavement process highlighted by this study was the importance of continued attachment with the deceased; honoring ancestors was noted as an important ritual in the Chinese culture.

Characteristics of the death (e.g., violent versus natural cause of death, sudden versus anticipated death) may account for differences found in meaning making among the bereaved. Evidence for this is found in both qualitative and quantitative studies. According to theories that incorporate assumptions about the world, violent and sudden deaths may more severely disrupt a person's core beliefs about the predictability of life. Quantitative

studies have demonstrated that violent death may correlate with different meaning making strategies (Currier, Holland, & Neimeyer, 2006; Keesee, Currier, & Neimeyer, 2008). Violent causes of death, such as homicides and suicides, were compared to anticipated and/or natural causes of death among bereaved college students (Currier, Holland, & Neimeyer, 2006). Results from this study indicate that violent deaths predicted greater struggle with sense-making when compared to students who were coping with the loss of a family member or friend by natural occurrences. Sense-making also was found to mediate the relationship between violent death and complicated grief. Similarly, violent death accounted for significant differences in sense-making among parents of children who died (Keesee, Currier, & Neimeyer, 2008). In this study, sense-making was the most significant predictor of grief intensity while controlling for covariates. Results from these studies suggest that sense-making aspects of meaning making may be more difficult when the death is unexpected and violent in nature, rather than anticipated and of natural causes.

Grief reactions may also be more severe when the deceased is younger in age. For example, Davis, Nolen-Hoeksema, and Larson (1998) reported that younger age of the deceased at time of death significantly predicted lower levels of sense-making. It is more disrupting to our sense of order when a loved one – younger in age – dies unexpectedly. Further studies are needed to corroborate these findings.

Religious Beliefs and Practices

Theorists frequently associate religion and spirituality as core aspects of meaning making; experiences with death commonly bring up survivor's beliefs in the afterlife, their own mortality, and other existential questions (Neimeyer, Prigerson, & Davies, 2002; Park, 2005a; Park & Folkman, 1997). However, few studies have examined the relationships between religiousness/spirituality, meaning making, and bereavement. Some studies have examined religious beliefs, importance of religion, and religious participation in relation to meaning making among bereaved populations. For example, spouses and parents of loved ones who lost their lives to motor vehicle accidents explained that they were able to find some meaning in their loss because of their religious beliefs (Davis, Wortman, Lehman, & Silver, 2000). Meaning making was identified as a mediator in the relationship between importance of religion and well-being and religious participation and well-being at 3 weeks post-loss in a study of mothers and fathers who lost an infant to SIDS (McIntosh, Silver, & Wortman, 1993a). In another study, religious affiliation significantly predicted greater levels of sense-making among parents grieving the loss of their infant child to SIDS (Davis, Nolen-Hoeksema, & Larson, 1998).

It is important to note that religion may, in some circumstances, exacerbate distress rather than provide support and structure to aid in the recovery process. For example, the loss of a loved one can compel people to spiritually and existentially re-examine life. Some theorists suggest that life crises, such as the loss of a loved one, may trigger a spiritual struggle (Exline & Rose, 2005; Pargament, Desai, & McConnell, 2006). These authors state that death of a loved one may test an individual's faith in his or her higher power. Considering the nature of the death, emotions such as anger, resentment, and blame may be

focused towards God, or on one's self as unworthy of God's love or deserving of punishment. Little is known about the relationships between positive and negative religious appraisals of meaning making regarding bereavement and how this relates to spiritual growth or spiritual decline. Preliminary evidence suggests that spiritually-based negative meanings, such as a punishing God appraisal, are associated with more distress among college students experiencing a significant loss (Stein et al., 2009). Another study found that anger directed at God was associated with difficulty finding meaning and negative adjustment among undergraduates reflecting on a variety of life stressors (Exline, Park, Smyth, & Carey, 2011). In the same study, an association between anger directed at God and personal distress was specifically found among bereaved individuals. Wortman, Park, and Edmonsen (2011) found that spiritual struggle mediated the relationship between trauma and PTSD over time in a prospective study of undergraduate students (the sudden death of a family member of friend was the number one endorsed traumatic event during their first year of college). Future studies are needed to fully understand the role of religious beliefs and spiritual practices with regard to their influence on bereavement-related meaning making and post-loss adjustment.

Meaning Making and Associations with Outcomes

Adjustment

Despite the limitations in the empirical research on grief and meaning making, some interesting trends in the bereavement literature have emerged in studying the relationship between meanings and adjustment. Several studies suggest that the process of searching for meaning without resolution is associated with increases in distress. A study by Cleiren (1993) found that among bereaved families who lost a loved one to suicide, illness, or fatal

accident, the search for meaning without resolution was related to increases in distress at both four months and a fourteen-month follow-up. Coleman and Neimeyer (2010) also found that the search for meaning predicted greater depression and grief over time among older bereaved adults. This finding has been demonstrated outside of the bereavement literature as well in other populations such as prostate cancer patients (Roberts, Lepore, & Helgeson, 2006) and breast cancer patients (Tomich & Helgeson, 2002). Preliminary evidence in the literature suggests that making little or no sense of bereavement is associated with increases in distress. This relationship has been reported among a racially diverse sample of bereaved undergraduates (Currier, Holland, & Neimeyer, 2006), among bereaved parents (Keesee, Currier, & Neimeyer, 2008) and among older bereaved adults (Coleman & Neimeyer, 2010).

Outside of the bereavement literature, there are some studies that report that different types of meanings constructed following a potentially traumatic event are related to variations in adjustment outcomes. For example, positive meanings made (defined as benefits found from a potentially traumatic event) often are correlated with psychosocial adaptation. One study found that positive meanings made were related to positive reframing, coping, and less blame among people whose homes were destroyed by fire (Thompson, 1985). Another study found a relationship between positive meanings made and higher levels of quality of life and life satisfaction in patients with multiple sclerosis (Russell, White, & White, 2006). In contrast, negative meanings associated with a trauma, such as viewing a traumatic event as incomprehensible, have been associated with distress in caregivers caring for loved ones with multiple sclerosis (Pakenham, 2008b). Causal attribution for adverse circumstances, predicted a higher level of anxiety among parents

caring for children with Asperger's syndrome (Pakenham, Sofronoff, & Samios, 2004). In this study, causal attribution was comprised of self and other causal explanations for Asperger's syndrome (i.e., my child's Asperger's was caused by some pregnancy related problem, I have a child with Asperger's because I attract misfortune, having a child with Asperger's is a punishment). These findings may or may not be the same in those experiencing bereavement; future studies are needed to examine whether or not similar findings will be revealed. While this existing work provides a starting point, more work is needed to adequately define meaning making by determining the various domains of this construct.

Physical Health

Although there is support for a strong relationship between bereavement and negative physical health (i.e., increased risk for mortality, physical symptoms, medical illness, and healthcare utilization) (Stroebe, Schut, & Stroebe, 2007), few studies have examined the role that meaning making may have on this relationship. There is preliminary evidence for the association between bereavement-related meaning making and physiological outcomes. In one study, an increase in meaning-related goals was associated with higher levels of Natural Killer Cell Cytotoxicity (NKCC) among women with a high risk for developing breast cancer who also lost a close family member to breast cancer (Bower, Kemeny, Taylor, & Fahey, 2003). NKCC is a type of immune system parameter that is thought to play a role in controlling the spread and growth of tumor cells.

In another study by Bower and colleagues, HIV-seropositive gay male mourners who found meaning within the loss of a friend or partner to AIDS were examined (Bower, Kemeny, Taylor, & Fahey, 1998). In this study, meaning making was defined as, "a major

shift in values, priorities, or perspectives in response to the loss" and was referred to as the "discovery of meaning" (p. 2). Discovery of meaning was related with a lower rate of AIDS-related mortality and significantly less rapid declines in CD4 helper-inducer T lymphocyte levels among gay male mourners when compared to other gay male mourners who did not find meaning. The researchers used CD4 levels as an indication of immunity changes in HIV positive people. In addition, the investigators found that the relationship between meaning and AIDS mortality was mediated by the less rapid decline of CD4 T lymphocytes.

Although the mechanisms behind the relationship between grief, meaning, and physical health are unclear, results from these studies provide provisional evidence of an association with meaning making. To date, no studies have examined the relationships between meaning making, bereavement, and measures of physical health status. Additional research is needed to investigate types of meaning that may buffer or exacerbate post-loss physical health symptoms.

Conceptual and Methodological Limitations

The research on meaning making has painted a complex picture. Meaning making in relation to post-bereavement adjustment has been associated with both positive adaptation and psychological distress. For example, some findings suggest that meaning making is associated with positive adaptation from bereavement among people mourning the loss of a family member (Davis, Nolen-Hoeksema, & Larson, 1998), recently bereaved college students (Holland, Currier, & Neimeyer, 2006), and in parents mourning the loss of a child to suicide, homicide, or fatal accident (Murphy, Johnson, & Lohan, 2003). In contrast, results from other bereavement studies suggest that meaning making is related to increases

in distress and negative adjustment from violent losses, such as suicide, homicides, and fatal accidents (Currier, Holland, & Neimeyer, 2006), losing a child to SIDS or a loved one to motor vehicle accident (Davis, Wortman, Lehman, & Silver, 2000), and among mothers who lost a child to cancer (Wu et al., 2008). This may be an indication that meaning making is related to both psychological distress and positive adjustment post-loss.

However, there are other explanations for the varied results found in this literature that should be explored. For example, contradictory findings may be related to the lack of agreement among researchers who have described and measured meaning making. Definitions of meaning making vary across psychological disciplines with the result that there is no unified definition and no standardized measure of meaning making. There are a number of terms used within the field to describe meaning making such as *sense-making, benefit-finding, posttraumatic growth, outlook change, stress-related growth*, and *meaning reconstruction*. Sometimes these terms are used interchangeably to describe similar constructs, which leads to further complications and confusion within the field. Therefore, it would be helpful to have a unified definition of meaning making and to determine if there are similarities and differences between existing constructs.

Part of this problem is that some theorists regard meaning making as a coping process, by which people attempt to search for an understanding or find the silver lining within their crisis or traumatic experience. Davis, Wortman, Lehman, and Silver (2000) use this "meaning making as coping construct" to argue that meaning–making persists for those grieving who experience enduring states of distress and continue to search for meanings that elude them. Other researchers regard meaning making as an outcome that represents the perceived, positive life changes that result from a crisis or traumatic experience. Park (2010)

describes outcome-related meaning making as "meaning made." While measuring meaning making, studies should carefully explain their intent to examine either process-oriented and outcome-oriented aspects of meaning making or the differences between the two constructs.

Conflicting results reported among meaning making studies may also be the result of different methods of measurement. Positive reappraisal coping has been used to measure meaning making (Park & Cohen, 1993; Park, 2005b), while other researchers have used the sense of coherence and the World Assumptions Scale (Janoff-Bulman, 1989). Some studies have examined separate aspects of meaning making, including the sense-making and benefit-finding domains (Davis, Nolen-Hoeksema, & Larson, 1998). Others have combined these two constructs together (Bonanno, Wortman, & Nesse, 2004; McIntosh, Silver, & Wortman, 1993b). Little is known about causal attributions (e.g., self-blame, blame of others, negative religious appraisals) or identity reconstruction in the wake of bereavement. Researchers may also need to rethink the face value of certain questions they use to assess meaning making. Some researchers question whether participants truly understand the questions used in assessment (Keesee, Currier, & Neimeyer, 2008; J. Nadeau, 1998). For example, Nadeau (1998) reported that during open-ended questioning in her study, many people did not understand the question, "What meaning did you give to the deceased's death?" Participants from this study were better able to understand sense-making questions referring to their loss, "Where you able to make sense of this loss?". Keesee, Currier, and Neimeyer (2008) also reported that some of their bereaved study participants were confused or offended by benefit-finding questions. This poses significant limitations to the validity of the results produced by these studies.

It is also apparent that researchers are having difficulty measuring quantitatively the process aspects of meaning making. Most bereavement and non-bereavement studies of meaning making assess the construct using a single-item question such as "have you searched for meaning or sense?" or "have you found meaning or sense?" Although there is an argument for the efficacy of single-item measurement for meaning making (Gardner, Cummings, Dunham, & Pierce, 1998), several researchers call for the development of more sensitive quantitative measures (Gillies & Neimeyer, 2006; Keesee, Currier, & Neimeyer, 2008). Gillies and Neimeyer (2006) suggested that a meaning making instrument should include the cultural context and the purpose of the constructed meanings about grief. These authors also stated that a measure should be able to discern the differences between profiles of "meaning-makers" which can be used to look at relationships between outcomes and how meaning changes and develops overtime.

Another limitation in the field is the fact that meaning making has been predominantly studied as an individual process, rather than a shared experience, dependent on social interaction and cultural beliefs. Many authors suggest that understandings of grief are co-created as an interpersonal process within a family system (Nadeau, 1998; Neimeyer, 2000; Shapiro, 1994). One of the most notable studies conducted on shared meanings as a response to bereavement is the work of Janice Nadeau (1998; 2001). Based on qualitative studies of families bereaved after a loss of a loved one, Nadeau observed interpersonal patterns of meaning making. Nadeau contends that meaning making occurs on both the individual level and at the interpersonal level among families. Shared meanings can be created among dyads (e.g., parent-child, brother-sister, husband-wife, etc.) and families (nuclear, extended, and intergenerational) (Nadeau, 1998). Furthermore, it must be

acknowledged that there is an inherent Western bias of individualism embedded within the theories of meaning making (Neimeyer, 2000). For example, theories that include a sense of coherence as an essential aspect are anchored by Western concepts of justice, predictability, and control (Schwartzberg & Janoff-Bulman, 1991).

Aside from the limitations already discussed in regard to measurement issues and operational definitions, the oversampling of adult, white, heterosexual women, living in the USA within this body of work limits the external validity to other groups, including college students. By limiting studies to a specific demographic, essential aspects of the human experience related to meaning making are ignored. It is clear that studying different groups of mourners from various age groups and racial, ethnic, and economic standpoints would expand upon what it already known about the role of meaning making in grief.

Study Objectives: Exploring Dimensions of Meaning Making and Outcomes

Given all of the considerations outlined, the definition for bereavement-related meaning making in this study included the explicit and implicit cognitive-affective processes, anchored in cultural, interpersonal, and developmental contexts, used by mourners with the intent to interpret and understand the impact of the loss on one's sense of self, environment, and/or worldview in the wake of bereavement. This process was proposed to be exhibited by 1) explanations to understand the nature, cause, and implications of the death, and 2) attempts to find significance in the loss. Attempts to explain and make sense of and find significance or value within the loss were expected to be either positively or negatively valenced (e.g., self-blame versus positive changes to outlook, identity, relationships with people, and purpose) as well as secular or religious in nature.

Therefore, the purpose of this study was to test this proposed definition of meaning making. In this study, different types of meanings constructed about the loss of a loved one among a diverse sample of university students were identified. Meaning making was examined with several quantitative self-report measures and open-ended questions. Data from open-ended questions was used to help explain quantitative findings by providing information about how meaning making may be influenced by contextual factors (i.e., socio-demographic and bereavement-related characteristics). Lastly, the relationship between outcomes (i.e., positive psychological adjustment, distress, and physical health) and meaning types were examined.

Hypothesis 1: Principal component analysis identified meaning factors that emerged from the meaning making questions. It was hypothesized that participants would make positive and negative meanings about loss. Additionally, positive and negative meaning making factors were expected to be comprised of spiritually-based appraisals (e.g., benevolent God, punishing God) and secular meaning constructions (e.g., catalyst for positive and negative changes to self, relationships, worldview).

Hypothesis 2: It was hypothesized that contextual factors including demographic variables and characteristics associated with the death would be correlated with the meaning making factors. Bivariate correlations were used to identify the variables that were significantly associated with meaning making. Variables that were significantly associated with meaning making were entered into a regression analysis. Multiple regression analysis was used to identify predictors of the meaning making factors identified by Principal Components Analysis.

Hypothesis 3: It was hypothesized that positive meaning factors (secular and religious) would predict outcomes of well-being (higher levels of positive affect and lower levels of symptoms of distress including PTSD, grief, and physical symptoms).

Hypothesis 4: It was hypothesized that negative (secular and religious) meaning factors would predict outcomes of distress (higher levels of negative affect and higher levels of symptoms of distress including PTSD, grief, and physical symptoms).

CHAPTER 2

METHOD

Design

This was a cross-sectional study, employing self-report survey data. Data were collected using a secure, Web-based system named PsychData. Additionally, data from several open-ended questions were also used to provide ideographic, contextual information to help explain quantitative findings (i.e., to understand how meaning making is influenced by contextual factors) (qualitative questions are listed in Appendix B).

Participants

Undergraduate and graduate students were recruited from the University of Massachusetts, Boston from May, 2011 to January, 2012 (N = 295). Eligible participants for this study were at least 18-years-old and had experienced the death of a close family member or friend within the last three years. The timeframe of three years was chosen so that students with prolonged grief would not be excluded (E. Shapiro, personal communication, February 20, 2010).

Participants ranged in age from 18 – 61 years old, with a mean age of 24.18 years (SD = 8.16). Seventy-five percent were female and twenty-five percent were male. A little over half of the total student sample identified as White/Caucasian (55%). The second largest racial group identified as Asian (15.3%), followed by Latino(a) (14.4%), and

Black/African American (14.0%). students. Median total family income fell between $25,000 - $35,000. Most participants reported that they lost a family member (66.7%), rather than a friend. Family members who died were most often a grandparent (37.7%), an aunt/uncle (20.3%), or parent (16.8%). Participants reported that they lost their loved one an average of 17.2 months prior to the time of study entry. The most common cause of death was from natural causes (65.9%), followed by car or motorcycle accident (10.5%), suicide (9.2%), homicide (6.1%), drugs/alcohol (5.7%), or other (2.2%). Other deaths were sudden, including by earthquake and drowning. All socio-demographic and bereavement-related characteristics of participants are reported in Table 1 in Appendix A.

A cursory review of the data from the open-ended questions revealed various types of grieving processes that included the use of religious coping, the impact of other losses or difficult life experiences on this most recent loss, how their perception of the loss changed over time, the co-construction of meanings made with other people in their lives, changes in their health behaviors, and changes in altruistic behavior. Open-ended questions are listed in Appendix B.

Procedure

Participants were recruited through emails sent to the University of Massachusetts Boston student body, fliers posted throughout the campus and announcements in psychology classes. Interested individuals were directed to the PsychData Web site where they completed the questionnaires. PsychData created two different data files – one file with names and e-mails of participants and another file with non-identifying data so that participants' data would not be linked to their identifying information. When participants logged on to the Web site they were shown the Informed Consent form to read. Following

the Informed Consent form, participants were presented with the questionnaires. At the end of the study, participants opted to receive extra credit for participating psychology classes or to enter a raffle to win one of several $100 Visa gift cards. Participants were instructed to leave contact information (optional) on a separate page to be entered into a raffle. Participants were instructed to leave their contact information and professor's name (optional) to receive course credit. If participants opted for course credit, a unique subject number was also generated at the end of each survey. Participants were instructed to give this number to their professor as proof that they completed the study.

Measures

The following measures were selected in order to answer the study hypotheses. A total of 272 questions were asked of study participants. The total estimated completion time for the survey was 35-45 minutes.

Potential Predictors of Meaning Making

Demographic and Background Characteristics. A 21-item demographic questionnaire was used to assess descriptive information about study participants including age of the participant at study entry, biological sex, race, ethnicity, highest level of education, marital status, religious affiliation, income, use of psychotherapy (past history and present use), and history of psychotropic medication for emotional difficulties (see Appendix C).

Bereavement-Related Characteristics. An eight-item questionnaire was used to assess descriptive information about the deceased. Questions included the relationship of the participant to the deceased, time since death, cause of death, age of participant at time of death, age of the deceased at time of death, impact of the deceased on the survivor, level of

closeness, and whether the death required forced reporting of details to the police (see Appendix D).

Religious Motivation. The Intrinsic Religious Motivation Scale (IRM) (Hoge, 1972) is a 10-item scale that assesses the degree to which people internalize and live their faith as a master motive in their lives (e.g., "My religious beliefs are really what lie behind my whole approach to life" and "My faith involves all of my life"). Items are rated on a 1 (Strongly disagree) to 4 (Strongly agree) scale. A total score is calculated by summing all ten items. The internal consistency (Kuder-Richardson Formula 20) for the IRM was high (α =0.90) in a sample of Protestant congregation members who were nominated by their ministers as being high on either intrinsic or extrinsic religious motivation. In this study, the Cronbach alpha coefficient was high (α = 0.91).

Measures of Meaning Making

In this study, various domains of meaning making were measured using subscales from four instruments: the Cognitive Emotion Regulation Questionnaire, a modified version of the Sense-Making in Caregiving Scale, the RCOPE, and the Centrality of Events Scale. These scales were selected for their face validity and reliability. Items from these scales reflect the hypothesized domains of meaning making in this study including negative and positive spiritual meanings and positive and negative non-religious meanings of the loss. The Centrality of Events Scale was selected to reflect post-loss identity change, which has been indicated as an important part of meaning making by Gillies and Neimeyer, (2006). More specifically, negative meanings included self-blame, blaming others, catastrophizing, rumination, viewing the death as incomprehensible, and applying negative religious reappraisals. Positive meanings specifically included acceptance, positive refocusing,

refocus on planning, positive reappraisal, putting into perspective, positive religious reappraisals and using a spiritual perspective to make sense of the loss. Information regarding the internal consistency of these subscales found in other studies as well as the present study is presented below.

The Cognitive Emotion Regulation Questionnaire (CERQ): an 18-item measure that assesses cognitive coping strategies used to manage stressful or threatening life events (Garnefski, Kraaij, & Spinhoven, 2001). The CERQ can be used for adolescents, adults, the elderly, students and clinical populations. The CERQ consists of nine, two-item sub-scales (self-blame, other-blame, acceptance, focus on thought/rumination, positive refocusing, refocus on planning, positive reappraisal, putting into perspective, and catastrophizing). Questions include "I feel that others are responsible for what has happened" and "I think that it hasn't been too bad compared to other things." Items are rated on a 5-item Likert scale (1 = almost never to 5 = almost always). A total score for each subscale is calculated by summing the subscale items. In a study of adults ages 18 – 65 from the general population, Cronbach alpha coefficients for each subscale ranged from .68 to .81 (Garnefski & Kraaij, 2006) In this study, Cronbach alpha coefficients for each subscale were self-blame ($\alpha = 0.77$), other-blame ($\alpha = 0.86$), acceptance ($\alpha = 0.79$), focus on thought/rumination ($\alpha = 0.73$), positive refocusing ($\alpha = 0.61$), positive reappraisal ($\alpha = 0.66$), putting into perspective ($\alpha = 0.66$), and catastrophizing ($\alpha = 0.83$).

The Sense-Making in Caregiving Scale (SMCS): a 57-item measure developed to assess sense-making among caregivers (Pakenham, 2008b). It was developed from qualitative data collected from caregivers of people with multiple sclerosis (Pakenham, 2008a). Participants are asked to respond to what degree they have made sense of their care

recipient's illness and their caregiving experience (e.g., "The situation has given me a different view on life" and "The situation has taken more than it has given"). The SMCS consists of six subscales (catalyst for change, relationship ties, causal attribution, spiritual perspective, incomprehensible, and acceptance). Items are rated on a 5-item Likert scale (1 = strongly disagree to 5 = strongly agree). A total score is calculated by summing all items and individual subscales can be calculated by summing the items in each subscale. Cronbach alpha coefficients were greater than 0.70 for all subscales among caregivers of people with multiple sclerosis (Pakenham, 2008a). Five scales were used in this study (all but relationship ties). The relationship ties subscale (11 items) assesses meaning making related to care giving of a care recipient, therefore this subscale was not modified for this study and was not be used. Instructions were modified so that participants were asked to refer to the loss of their loved one rather than caregiving for someone with a physical illness (K. Pakenham, personal communication, November 6, 2010). In the present study, Cronbach alpha coefficients for each subscale were catalyst for change (α = .90), incomprehensibility (α = 0.67), causal attribution (α = 0. 76), spiritual perspective (α = 0.87), and acceptance (α = 0.64).

The RCOPE*:* a survey that assesses religious coping strategies in the general population (Pargament, Koenig, & Perez, 2000). For the purposes of this study, a 7-item set of 2 subscales was used to assess how religious methods of coping are used to find meaning and redefine a stressor as beneficial or as a punishment from God. Two items were added to assess overall self-rating of religiousness and spirituality. Individual RCOPE subscales can be calculated by summing the items together. Participants are asked to rate each item on a 4-point scale (0 = Not at all) to (3 = A great deal). In a study of undergraduate students,

Cronbach's alpha for each subscale was 0.91 and 0.92 respectively. In the present study, Cronbach's alpha were 0.88 and 0.80 respectively.

The Centrality of Event Scale (CES): a 7-item scale that assesses the centrality of an event to a person's life narrative and identity (Berntsen & Rubin, 2006). Questions include, "This event has become a reference point for the way I understand myself and the world" and "I feel that this event has become part of my identity." Items are rated on a 1 (Totally disagree) to 5 (Totally agree) scale. All seven items are summed together to obtain a total score. Among undergraduate students, the Cronbach alpha coefficient was .88. In the present study, Cronbach alpha coefficient was 0.92 for this scale.

Outcomes of Meaning Making

Positive and Negative Affect. The Positive and Negative Affect Schedule (PANAS) (Watson, Clark, & Tellegen, 1988) is made up of two 10-item mood scales with words that comprise a positive affect subscale and a negative affect subscale. Participants are asked to rate each word on how they have been feeling in the last week using a 5-point scale (1 = very slightly or not at all) to (5= extremely). Total scores of each subscale can be calculated by summing the items. Among a sample of undergraduate students, Cronbach's alpha coefficients ranged from .86 to .90 for the positive affect subscale and .84 to .87 for the negative affect subscale over a two month time period (Watson et al., 1988). Cronbach's alpha in the present study was 0.90 (positive affect subscale) and 0.89 (negative affect subscale).

Depressive Symptoms. The Center for Epidemiological Studies – Depression Scale (CESD) (Radloff, 1977) is a widely used 20-item self-report depression scale developed to assess depressed mood in community samples. Items are rated on a 4-item Likert scale (1 =

rarely or none of the time to 4 = most or all of the time). Participants are asked to describe how often they experienced specific emotions and behaviors related to depression in the past week (e.g., I felt lonely, I felt sad, I could not get "going"). A total score of the CESD is summed yielding a composite score (range 0 – 60); a higher score represents a higher level of depression. Cronbach alpha coefficients for a general and a psychiatric population were 0.85 and 0.90 respectively (Radloff, 1977). Internal reliability for the CESD scale in the present study was high ($\alpha = 0.93$).

Posttraumatic Stress Disorder (PTSD). The PTSD Checklist – Specific (PCL-S) (Weathers, Litz, Herman, Huska, & Keane, October 1993) is a 17-item widely used measure that assesses the DSM-IV symptoms of posttraumatic stress disorder (PTSD) related to a specific event (e.g., "how much have you been bothered by repeated, disturbing memories, thoughts, or images of a stressful experience from the past in the last month?"). Items are rated on a 5-item Likert scale (1 = not at all to 5 = extremely). A total symptom severity score can be obtained by summing all of the items together. The Cronbach's alpha for the PCL-S was 0.93 for a study comprised of motor vehicle accident survivors and victims of sexual assault (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996). In the current study, Cronbach's alpha for the PCL-S was 0.92.

Physical Health Symptoms. The MOS Short-Form Health Survey (SF-20) (Stewart, Hays, & Ware, 1988; Ware & Sherbourne, 1992) is a 20-item measure that assesses six health concepts: physical functioning, limitations to role functioning due to poor health, social functioning, mental health, current health perceptions, and pain. Questions include, "how much bodily pain have had during the past four weeks?" and "does your health keep you from working at a job, doing work around the house or going to school?" Items are

rated on 3 to 6-point Likert scales. A 4-item subscale that assesses perceived physical health status was used as an outcome measure in this study Cronbach's alpha for the perceived physical health subscale was 0.90.

Normative Grief Reactions. The Hogan Grief Reaction Checklist (HGRC) (Hogan, Greenfield, & Schmidt, 2001) is a 61-item survey developed from data collected from bereaved adults who experienced a loved one's death. The HGRC consists of six subscales (i.e., despair, panic, blame and anger, detachment, disorganization, and personal growth). These factors are intended to highlight the normal trajectory of the grieving process. Participants are asked to rate on a 5-item Likert scale ranging from 1 (does not describe me at all) to 5 (describes me very well). A total score for each subscale can be created by summing the subscale items. For the purposes of this study, the personal growth subscale was not used as this construct was already represented by subscales of other measures used in this study. The five other subscales, despair, panic behavior, detachment, blame and anger, and disorganization can be summed to created a total grief "misery" score (Gamino, Sewell, Hogan, & Mason, 2009). Cronbach's alpha coefficients for the factors identified by the authors ranged from 0.79 to 0.90. (Hogan, Greenfield, & Schmidt, 2001). In the present study, Cronbach's alpha coefficients for the grief subscales ranged from 0.85 to 0.91. The reliability coefficient for the total "misery" grief score was 0.97.

Prolonged Grief Disorder (PGD-13). (Prigerson et al., 2009) is a 13-item survey developed as a diagnostic tool for PGD – a newly defined disorder proposed for the DSM-V that is specific to the experience of bereavement. Five diagnostic criteria must be met for a diagnosis of PGD: bereavement (Criterion A), separation distress (Criterion B)

experienced at least once a day, elevated symptoms of separation distress must endure at least 6 months post-loss (Criterion C), five cognitive, emotional, and behavioral symptoms (Criterion D), and significant impairment in social, occupational, or other important areas of functioning. This is a measure in development and has not yet been tested extensively for reliability and validity; however it was used in this study because it was developed specifically to assess symptoms of Prolonged Grief Disorder. Items are rated on a 5-item Likert scale and a total score can be created by summing 11 of the 13 items (H. Prigerson, personal communication, March 29, 2012). In the present study, Cronbach's alpha coefficient was 0.92.

CHAPTER 3

RESULTS

A total of 295 participants registered for the study. Data from participants who registered but did not begin the study (N = 27) were deleted. Other participants that had incomplete data or did not meet eligibility criteria (N = 39) were also deleted. This left 229 participants in the final data set. Across all study variables, the percentage of missing data was never above 4%. Independent-samples t-tests and chi-square tests were used to compare scores between the final sample (N = 229) and all excluded participants (N = 66) on the following socio-demographic and bereavement-related factors: age, gender, marital status, current financial status, religious beliefs, intrinsic religious motivation, cause of death, relationship to the deceased (friend or family member), degree of attachment to the deceased, time since loss, age of participant when they lost their loved one, and age of the deceased at time of death.

Significant differences were found between the final sample for time since loss (M = 17.18, SD = 13.44) and excluded participants [M = 79.6, SD = 61.8; t(48.98) = -7.04, p = 0.00], such that participants who completed the study lost a loved one more recently than those who were excluded. The age of the deceased at their time of death was also different between groups, such that the participants who completed the study lost loved ones who were significantly younger (M = 51.3, SD = 26.1) than the loved ones of the excluded

participants [M = 64.6, SD = 83.2; t(261) = -1.96, p = 0.05]. Significant differences in age of the participants were found between the final sample group (M = 23.11, SD = 8.11) and the excluded participants (M = 18.7, SD = 8.44; t(274) = 3.5, p = 0.001], such that the participants who completed the study were significantly older when their loved one passed away. No other significant differences were found between groups. Frequency tables are available for demographic variables and descriptive statistics are available for continuous variables and scale scores (see Table 1 and Table 2).

Clinical cut-off scores were calculated for all measures of distress (depression, PTSD, and prolonged grief). In general with the CES-D, a score of 16 is used to indicate mild depression, 17 – 24 indicates moderate depression, and scores greater than 24 indicate severe depression (Radloff, 1977). In the present study, 34 participants (14.8%) had scores on the CES-D that were between 16 and 24 (mild to moderate depression), while 66 participants (22.82%) had scores greater than 24 (severe depression). Authors of the PCL-S recommend that the range 30 – 38 be used to indicate clinical PTSD in civilian populations (Weathers, Litz, Herman, Huska, & Keane, October 1993). In the present study, 95 participants (41.5%) had a score of 30 or higher on the PCL-S, indicating clinical levels of PTSD. A cut-off score of 36 is recommended to indicate a diagnosis of prolonged grief disorder, and an "at risk group" can also be calculated by using the mean 29 and subtracting 13 (one standard deviation) (H. Prigerson, personal communication, March 28, 2012). In the present study, 18 students (8%) had a score of at least 36 on the PGD-13 measure, while another 112 students (48.9%) were at risk.

All continuous variables were converted into z-scores to assess for univariate outliers. Five participants were found to have z-scores higher than 3.29 for age of participant

at the time of death of the deceased variable. Four participants were found to have z-scores higher than 3.29 for the age of participants variable. This indicated that four participants were older than the rest of the sample and were therefore older when they lost their loved ones. At the multivariate level, these outliers were not significant. Therefore, the participants were not deleted from the data set. Means and standard deviations of study variables are displayed in Table 3.

A correlation matrix of outcome measures was used to determine if there were strongly correlated variables. Highly correlated outcome measures were either combined or the measure that best represented the construct was used in the regression analyses. Outcome variables negative affect and the CES-D were highly correlated ($\underline{r} = 0.74$, $\underline{p} < 0.01$); therefore, the CES-D was selected over negative affect due to its sensitivity to the measurement of depressive symptoms. Likewise, grief measures were highly correlated ($\underline{r} = 0.90$, $\underline{p} < 0.00$). The PGD-13 was selected to use over the HRGC because it is a more widely used measure and was developed to be more sensitive to symptoms of prolonged grief. The PCL-S, CES-D, and PGD-13 were found to be highly correlated; however, it was decided that all of these measures would be used because they theoretically measure different clinical disorders (PTSD, depression, and prolonged grief, respectively). Correlation coefficients for all outcome measures are displayed in Table 4. The impact of the deceased on the survivor and level of closeness were also two variables that were highly correlated ($\underline{r} = 0.71$, $\underline{p} < 0.00$). Therefore, a total score was calculated by averaging the sum of these two variables. The combined variable was called "degree of attachment." The six causes of death were collapsed into two categories: death by sudden or anticipated natural causes (natural death) or sudden death by accident or violent causes (unnatural death).

Hypothesis 1

It was hypothesized that individual items from meaning making scales would coalesce into positive and negative factors. Additionally, positive and negative meaning making types would be comprised of either spiritually-based appraisals or secular meaning appraisals. With SPSS (version 20.0), principal component analysis (PCA) was used to identify factors of meaning making. Prior to running the PCA, the suitability of the data for the analysis was assessed. Items from the meaning making questionnaires (i.e., CERQ, SMCS, and religious reappraisal subscales from the RCOPE) were entered into a correlation matrix. Inspection of the correlation matrix revealed many coefficients equal to and above 0.3. The Kaiser-Meyer-Oklin Measure value for sampling adequacy was 0.77, which was higher than the recommended value of 0.6 (Kaiser, 1970; Kaiser, 1974). Additionally, the Barlett's Test of Sphericity (Bartlett, 1954) revealed statistical significance ($p = 0.000$). The findings from the correlation matrix, Kaiser-Meyer-Oklin Measure, and Barlett's Test suggested that the data was appropriate for Principal Components Analysis.

All of the items (77 total items) from four meaning making questionnaires were entered into the Principal Components Analysis to identify cohesive types of meaning making. This analysis revealed 18 components with eigenvalues exceeding 1, explaining 72.8 % of the cumulative variance. Given the number of factors identified, a scree test was used to examine the shape of the eigenvalues plot (Catell, 1966). Catell (1966) recommends retention of factors above a break in the plot because these factors contribute to most of the variance in the data set. The scree plot revealed a break after the fifth component; therefore, five components were retained for further investigation using a Varimax rotation. These five components explained 44.4% of the cumulative variance. Meaning types were then

identified using a cut-off factor loading score of 0.45 (fair) or above without overlap on other factors (Tabachnick & Fidell, 2007). Items that were near to 0.45 were retained if they made sense theoretically with other factor items. Any item that did not load on a factor was dropped from the analysis. If an item overlapped with more than one factor, it was retained on the highest factor if other factor loadings were less than 0.45. The rotated solution is demonstrated in Table 5. Items that were not retained from the analysis are demonstrated in Table 6.

New variables were created to represent individual participants' scores on each of the meaning making types. To account for missing data, variables were produced by summing and taking the average of all of the items from each factor. Negative items were reverse coded before they were summed with other items to calculate total scores. If items from various measures used different Likert scale ratings, z-scores were created for each item and new variables were created by taking the average of summed z-scores. These five factors were easily interpretable and fell within four categories consistent with the hypothesized factors. Two factors fell within the proposed positive meaning category: personal growth and positive reframing. One factor fell within the proposed spiritual meaning category (spiritual meaning making). Two factors fell within the proposed negative meaning making category (preoccupation with the loss/identity change and causal attribution). All items from the Centrality of Events Scale loaded onto the preoccupation with the loss/identity change factor. The other items that loaded on this factor were negatively-valenced and reflected a continued preoccupation with thoughts associated with the loss.

Hypothesis 2

It was hypothesized that socio-demographic and bereavement-related characteristics would predict meaning factors. Bivariate correlations, t-tests, and one-way ANOVAs were conducted on all socio-demographic and bereavement-related characteristics with meaning making factors. Continuous variables were entered into a correlation matrix with the five meaning factors. T-tests and one-way ANOVAs were conducted to compare group differences found between categorical variables and meaning factors.

The following socio-demographic and bereavement-related characteristics were entered into a correlation matrix with each of the meaning making types: age of the participant at time of study completion, intrinsic religious motivation, degree of attachment to the deceased, time since loss, age of participant at the loved one's time of death, and age of the deceased at time of death (see Table 7). A significant positive correlation was found between the preoccupation with the loss/ identity change factor and the degree of attachment between the deceased and survivor [$r = 0.49$, $p<0.01$], indicating that a stronger attachment between the deceased and the survivor was associated with higher levels of preoccupation with the loss/permanent identity change. A significant negative correlation was also found between the preoccupation with the loss/identity change factor and the age of the deceased at their time of death [$r = -0.25$, $p<0.01$], indicating that participants ruminate more and feel that the loss was central to their identity when the deceased was younger in age. Similarly, the personal growth factor was positively associated with the degree of attachment between the deceased and survivor [$r = 0.26$, $p<0.01$] and negatively correlated with the age of the deceased at the time of death [$r = - 0.22$, $p<0.01$]. These findings suggest that participants

who had close relationships with loved ones who were younger when they died reported higher personal growth as a result of their loss.

The spiritual meaning making factor was positively correlated with the total IRM score (which represents the degree participants use religion as a master motive in life) [$r = 0.54$, $p < 0.01$], degree of attachment, [$r = 0.13$, $p < 0.05$] and time since loss [$r = 0.16$, $p < 0.05$]. The spiritual meaning making factor was negatively correlated with the age of the participant at the time of the loss [$r = - 0.14$, $p = < 0.05$]. This finding indicates that participants who were younger when they lost their loved one, described themselves as intrinsically motivated by their faith, and had a close relationship with the deceased were more likely to report higher levels of spiritual meaning making. This finding also indicates that participants were more likely to use spiritual meaning making the longer time passed.

The positive reframing factor was significantly correlated with degree of attachment [$r = 0.17$, $p < 0.05$], indicating that a closer attachment to the deceased was associated with a higher level of positive reframing. Additionally, a significant negative correlation was found between the causal attribution factor and the age of the deceased when he or she passed away [$r = -0.16$, $p<0.05$], such that younger age of the deceased at their time of death was associated with higher levels of causal attribution by the participant.

T-tests and one-way ANOVAs were used to compare differences between meaning making types and the following categorical variables: gender, marital status, current financial status, religious beliefs, cause of death, and relationship to the deceased (friend or family member). Males and females were found to differ on the preoccupation with the loss/ identity change) factor, female participants reported higher scores [$t(117.92) = -3.01$, $p<0.01$]. There were significant differences found for cause of death (natural versus

unnatural) for several factors. Significant differences were found between natural deaths and unnatural deaths [$t(226) = -3.89$, $p<0.01$] among the preoccupation with the loss/identity change factor, such that participants who lost a loved one by unnatural death reported higher levels of rumination and changes in identity related to the loss. Significant differences were found between participants who experienced a natural death versus an unnatural death [$t(225) = -2.28$, $p<0.05$] on the personal growth factor, such that participants who experienced the loss of a loved one by unnatural death reported higher levels of personal growth. There were also significant group differences found between natural caused deaths and unnatural [$t(223) = -3.21$, $p<0.01$] among the causal attribution factor, such that participants who lost a loved one by unnatural death reported higher levels of causal attribution. Taken together, these findings indicate that participants who lost a loved one to unnatural causes reported higher rumination and identity change and also made more frequent causal attributions related to the loss. Additionally, participants who lost a loved one to unnatural causes also reported higher levels of personal growth.

One-way ANOVAs were conducted to explore the impact of religious beliefs on levels of spiritual meaning making. A significant difference was found in spiritual meaning making scores in four religious categories (atheist, agnostic, member of an organized religion, and spiritual but not affiliated with a religion) [$F(3, 222) = 8.72$, $p <0.01$]. Post-hoc comparisons were conducted using the Tukey test. The following negative values indicate scores that fall below the mean. This test indicated that mean scores of atheists ($M = -0.03$, $SD = 0.03$) were significantly lower than participants who consider themselves spiritual but not religious ($M = 0.002$, $SD = 0.04$) and from members of organized religion ($M = 0.01$, $SD = 0.04$). Mean scores of agnostics ($M = -0.01$, $SD = 0.04$) were significantly lower than

the mean scores of members of organized religion (M = 0.01, SD = 0.04). Significant differences were found when members of organized religion (M = 0.01, SD = 0.04) were compared to atheists (M = -0.03, SD = 0.03) and agnostics (M = -0.01, SD = 0.04). Lastly, significant mean score differences were found when participants who identify as spiritual, but not religious (M = 0.002, SD = 0.04) were compared to people who identify as atheist (M = -0.03, SD = 0.03). These findings indicate that participants who identified with a religious faith or identified as spiritual, but not religious were more likely to report spiritual meaning making when compared to participants who identified as agnostic or atheist.

In each regression analysis predicting meaning factors, the following covariates were entered into the model: gender of the participant (male/female), cause of death, age of the deceased at his/her time of death, age of the participant at the deceased's time of death, degree of attachment, time since loss, intrinsic religious motivation (IRM) total score, and three dummy coded variables representing religious and non-religious categories.

In the first regression analysis predicting personal growth, the overall model was significant ($F = 4.10$, $p < 0.01$) and explained 18.2% of the variance. Degree of attachment significantly predicted higher personal growth scores ($p < 0.01$), suggesting that a close relationship with the deceased influenced a greater perception of personal growth after the loss. The age of the deceased at his or her time of death also significantly predicted higher levels of personal growth meaning making ($p < 0.05$). This finding suggests that younger age of the deceased at the time of death influences the perception of greater personal growth (see Table 9).

In the second regression analysis predicting positive reframing, the overall model was not significant. This finding indicates that positive reframing was not predicted by the

socio-demographic and bereavement variables that were included in this study (see Table 10).

In the third regression analysis predicting preoccupation with loss/identity change, the overall model was significant ($F = 11.87$, $p < 0.01$) and explained 39.1% of the variance. Degree of attachment significantly predicted higher levels of preoccupation with loss/identity change ($p < 0.01$), suggesting that a close relationship with the deceased influenced greater rumination and post-loss identity change. The age of the deceased at his or her time of death significantly predicted higher levels of preoccupation with loss/identity change ($p < 0.05$). This finding suggests that younger age of the deceased at the time of death influences greater rumination and identity change. Additionally, cause of death significantly predicted a higher level of rumination and identity change, such that cause of death by violent means influenced more preoccupation with the loss and the perception of changes in identity (see Table 11).

In the fourth regression analysis predicting causal attribution, the overall model was not significant. This finding indicates that causal attribution was not predicted by the socio-demographic and bereavement variables that were included in this study (see Table 12).

In the fifth regression analysis predicting spiritual meaning making, the overall model was significant ($F = 11.08$, $p < 0.01$) and explained 37.5% of the variance. Degree of attachment significantly predicted higher scores on the spiritual meaning making factor ($p < 0.01$), suggesting that a close relationship with the deceased influenced a greater use of spiritual meaning making. The IRM total score significantly predicted higher levels on spiritual meaning making ($p < 0.01$). Identifying as atheist also significantly predicted lower

levels of spiritual meaning making ($p < 0.05$). These findings suggest that maintaining a strong religious framework influenced greater spiritual meaning making (see Table 13).

Hypotheses 3 – 5

To identify potential covariates for the regression analyses predicting outcome variables, bivariate correlations, t-tests, and one-way ANOVAs were conducted on all socio-demographic and bereavement-related characteristics and dependent variables. Continuous variables were entered into a correlation matrix with the outcomes. T-tests and one-way ANOVAs were conducted to compare group differences found between categorical variables and outcomes.

The following socio-demographic and bereavement-related characteristics were entered into a correlation matrix with each of the outcome variables: age of the participant at time of study completion, intrinsic religious motivation (IRM total score), degree of attachment to the deceased, time since loss, age of participant at the loved one's time of death, and age of the deceased at time of death. A significant, positive correlation was found between the degree of attachment and the CES-D ($p < 0.05$), PCL-S ($p < 0.01$), and PGD-13 ($p < 0.01$). This indicates that having had a closer relationship with the deceased was associated with greater levels of distress, as evidenced by symptoms of depression, PTSD, and prolonged grief (results are displayed in Table 8).

A significant difference was found between mean scores of the perceived physical health scale for cause of death, such that worse physical health status was associated with unnatural causes of death ($\underline{M} = 14.17$, $\underline{SD} = 3.60$) when compared to natural causes of death [$\underline{M} = 15.16$, $\underline{SD} = 3.36$; $\underline{t}(205)=1.95$, $\underline{p} = 0.052$]. Significant differences were found between mean scores of the CES-D (depression measure) on religious categories [$\underline{F}$ (3,212) = 3.91, $\underline{p}$

= .01]. The Tukey HSD test indicated that participants who identified with an organized religion had significantly lower depression scores (M = 15.02, SD = 10.82) when compared to participants who identified as atheists (M = 22.16, SD = 13.74). Participants who identified as religious had significantly lower depression scores (M = 15.02, SD = 10.82) when compared to participants who identified as spiritual, but not religious (M = 20.17, SD = 11.68). Mean scores of the PCL were also significantly different for religious categories [F (3, 211) = 3.81, p = .01]. The Tukey HSD test indicated that participants who identified as a member of an organized religion (M = 27.43, SD = 9.80) had significantly lower symptoms of PTSD when compared to participants who identified as spiritual, but not religious (M = 32.12, SD = 12.21).

It was hypothesized that positive meanings made about loss would predict outcomes of well-being and that negative meanings made about loss would predict outcomes of distress. Sequential regression analysis was used to examine the relationship between the five meaning making factors and each of the five outcome variables: positive affect, depression, posttraumatic stress, prolonged grief, and perceived physical health. Prior to running all regression analyses, univariate outliers were examined in continuous variables using the cut-off z-score of 3.29 (Tabachnick & Fidell, 2007) and subsequent analyses confirmed that assumptions of normality, linearity, and homoscedasticity were not violated. In each regression analysis, potential covariates were entered in step 1: the degree of attachment to the deceased, cause of death, and three dummy coded variables representing religious and non-religious affiliations. In the second step of each regression, meaning making factors were entered together into the model.

In the first regression analysis predicting positive affect, none of the potential covariates reached statistical significance. The first step of the model explained 4.5% of the variance in positive affect, but was not significant. In the second step, degree of attachment significantly predicted higher positive affect ($p < 0.01$) after meaning making factors were entered into the model. Preoccupation with the loss/identity change significantly predicted lower positive affect ($p < 0.01$) while higher personal growth predicted higher positive affect ($p < 0.01$). The final model was significant ($F = 4.53$, $p < 0.01$) and explained 17.8% of the variance in positive affect (see Table 14).

In the second regression analysis predicting depressive symptoms, the first step of the model explained 8.7% of the variance in depressed mood and was significant ($p < 0.01$). In the first step, degree of attachment significantly predicted a higher level of depressive symptoms ($p < 0.05$). Additionally, an agnostic affiliation, rather than religious, spiritual, or atheist significantly predicted higher depressive symptoms ($p < 0.05$). In the second step, three meaning making factors significantly predicted depressed mood. Preoccupation with the loss/identity change and spiritual meaning making significantly predicted higher depressive symptoms ($p < 0.01$, $p < 0.01$ respectively) and personal growth significantly predicted lower depressed mood symptoms ($p < 0.01$). The degree of attachment was no longer statistically significant in the second step after meaning making factors were entered into the model, which suggests that its relationship with depressed mood may be mediated by personal growth, preoccupation with the loss/identity change, and spiritual meaning making factors. Identifying as agnostic remained statistically significant in the second step ($p < 0.5$) and identifying as atheist became significant in the second step ($p < 0.5$). The

overall model was significant ($F = 12.31$, $p < 0.01$) explained 37.6% of the variance in depressive symptoms (see Table 15).

In the third regression analysis predicting PTSD symptoms, the first step of the model explained 14.7% of the variance in PTSD symptoms and was significant ($p < 0.01$). In the first step, the degree of attachment significantly predicted higher PTSD symptoms ($p < 0.01$). Unnatural cause of death and identifying as agnostic also significantly predicted higher PTSD symptoms ($p < 0.05$, $p < 0.05$ respectively). In the second step, preoccupation with the loss/identity change was the only meaning making factor that significantly predicted higher PTSD symptoms ($p < 0.01$) after controlling for potential covariates. The degree of attachment, cause of death, and identifying as agnostic were no longer significant in the second step, which suggests that these variables may be mediated by preoccupation with the loss/identity change. The overall model was significant ($F = 17.48$, $p < 0.01$) and explained 46.3% of the variance in PTSD symptoms (see Table 16).

In the fourth regression analysis predicting prolonged grief disorder (PGD) symptoms, the first step of the model explained 13.7% of the variance in PGD symptoms and was significant ($p < 0.01$). In the first step, a closer relationship with the deceased significantly predicted a higher level of PGD symptoms ($p < 0.01$). Additionally, identifying as agnostic, rather than religious, spiritual, or atheist significantly predicted higher PGD symptoms ($p < 0.05$) and unnatural cause of death significantly predicted higher PGD symptoms ($p < 0.05$). In the second step, preoccupation with the loss/identity change and spiritual meaning making significantly predicted higher PGD symptoms ($p < 0.01$) after controlling for potential covariates, while personal growth significantly predicted lower PGD symptoms ($p < 0.01$). Identifying as agnostic and degree of attachment remained

significant after meaning factors were entered into the model (p <0.01, p = 0.054). However, cause of death did not remain significant, which suggests that the relationship between this variable and PGD symptoms may be mediated by meaning making. The overall model was significant (F = 27.92, p < 0.01) and explained 57.0% of the variance in prolonged grief symptoms (see Table 17).

In the fifth regression analysis predicting perceived physical health status, the first step of the model explained 4.3% of the variance in perceived physical health but was not significant. In the second step, preoccupation with the loss/identity change, spiritual meaning, and positive reframing significantly predicted lower perceived physical health status (p < 0.01, p < 0.05, p < 0.05, respectively). Additionally, personal growth significantly predicted higher physical health status (p < 0.01). In the second step, the degree of attachment became significant after meaning factors were added to the model (p < 0.01), suggesting that a closer relationship with the deceased predicted the perception of better physical health. Cause of death was no longer significant when meaning factors were added into the model, which suggests mediation. The overall model was significant (F = 5.51, p < 0.01) and explained 22.2% of the variance in depressive symptoms (see Table 18).

Summary

Findings from this study suggest that meaning making as a response to bereavement is comprised of at least three distinct components – positive, negative, and spiritual meanings. Two positive meaning factors were identified from the analysis. Positive reframing reflected process-oriented aspects of meaning making (i.e., "I think that it hasn't been too bad compared to other things"), while personal growth reflected outcome-oriented aspects of meaning making, ("Because of the loss I have grown as a person"). Two negative

meaning factors were identified from the analysis. Preoccupation with the loss/identity reconstruction (i.e., "I keep thinking about how terrible it is what I have experienced," "This loss has become a reference point for the way I understand myself and the world") and causal attribution ("Stress contributed to the death of…." And "….'s death was party due to his/her personal problems"). Spiritual meaning making was comprised of negative and positive spiritual meaning items ("Felt punished by God for my lack of devotion", "This situation happened for a purpose", and "Tried to see how God might be trying to strengthen me in this situation").

Overall, meaning making factors were most commonly predicted by the degree of attachment with the deceased. A closer relationship with the deceased predicted higher levels of personal growth and positive reframing, as well as higher levels of preoccupation with the loss/identity change and spiritual meaning making. Younger age of the deceased at their time of death predicted higher personal growth and preoccupation with the loss/impact on identity, while identifying as agnostic predicted higher causal attribution meaning making.

A closer relationship with the deceased significantly predicted all psychological outcome variables – positive affect, depression, PTSD, and prolonged grief disorder symptoms. The preoccupation with loss/impact on identity factor and the degree of attachment to the deceased contributed to a large percentage of the variance in negative mental health outcomes: depression, PTSD, prolonged grief, and lower positive affect. This implies that post-loss distress symptoms are strongly related to attachment, a preoccupation with negative aspects associated with loss, and a change in identity which the bereaved

experiences as a diminishment rather than something that showed them they were stronger than they realized. Unnatural cause of death also appears to contribute more strongly to distress levels (higher symptoms of PTSD and PGD and worse physical health) as well as identifying as agnostic (higher depression, PTSD, and PGD symptoms). Furthermore, the items indicated by the spiritual meaning factor may be more reflective of spiritual struggle, which would explain the relationship between spiritual meaning making and depression in this study (i.e., another example of the mourner's experience in which the meaning of the loss has not been reconciled).

On the contrary, it could be argued that post-loss resiliency is strongly related to attachment, personal growth, and an acceptance of the loss (as indicated by the lack of rumination/preoccupation with the loss). It was found that a close attachment to the deceased also predicted higher personal growth, which indicates that this factor may not necessarily lead to continued distress.

CHAPTER 4

DISCUSSION

A Five-Factor Structure of Bereavement-Related Meaning Making

Results confirmed the first study hypothesis that bereaved students make positive and negative secular and religious meanings about their losses. Principal Components Analysis revealed five meaning factors that fell within three hypothesized categories: positive, negative and spiritual/religious.

Positive meaning was comprised of two factors, which were interpreted as personal growth and positive reframing. The personal growth factor appeared to reflect positive "meaning made" as a result of the loss, rather than an active search for meaning. These items were consistent with questions from standardized psychological growth measures that are commonly used to assess positive meaning about a life stressor or potentially traumatic experience as an outcome (e.g., BFS, SRGS, and PTGI).

The positive reframing factor was interpreted as a specific process of meaning making – or active coping efforts to accept the loss, refocus on planning, and remember that the situation could be worse. This last aspect is congruent with cognitive adaptation to threatening events theory in which "downward comparisons" or comparisons to others who are coping with similar crises or who were less fortunate, is a main component of the search for meaning. Taylor (1983) proposed that "downward comparisons" function as a process to

help restore self-esteem. The other items on this factor – a refocus on planning and attempts to accept the loss – may portray an ongoing coping process used by participants to work toward acceptance of the loss while also recommitting themselves to move forward with things that they can control.

It was found that negative and positive spiritual meaning making items did not load onto distinct negative and positive factors. Instead, negative and positive religious meaning items coalesced together into one, combined factor. This factor consisted of items across several spiritual and religious domains including positive religious constructions (i.e., "tried to find a lesson in God"), spiritual struggle (i.e., "wondered what I did for God to punish me"), and spiritual fate items (i.e., "Everything happens for a reason, including this situation," or "this situation happened for a purpose"). Pargament et al., (1998) found that negative and positive religious coping appraisals were positively correlated in college students coping with life stressors and in hospitalized patients coping with medical illnesses. These authors found that people tend to use higher rates of positive religious coping rather than negative. They also argued that negative and positive religious appraisals were distinct constructs that uniquely predicted adjustment outcomes. Findings from the present study seem to confirm that people use both negative and positive religious coping to help understand significant life stressors. However, it was not found that these constructs were distinct, rather participants in this study were likely to use both negative and positive religious coping.

Negative meaning was comprised of two factors: preoccupation with the loss/impact on identity and causal attribution. Items from the Centrality of Events Scale (which

measured identity reconstruction) fell together with other items that seemed to reflect an ongoing preoccupation with the negative impact of the loss, (e.g., items included incomprehensibility and non-acceptance of the loss as well as the perception of a permanent, negative life change). Although ages ranged within this sample (18 – 61 years), the majority of the participants were bereaved while they were in their early 20s. Losses experienced at this age, may interrupt important developmental milestones (Taub & Servaty-Seib, 2008); which may explain why impact on identity items were highly correlated with negatively-valenced items.

The causal attribution factor was also interpreted as a type of negative meaning making. The items from this factor seemed to demonstrate the participants' understandings about why the loss occurred. Participants commonly attributed the loss of their loved ones to specific characteristics such as life style factors, personality characteristics, and genetics. In this study, these items were interpreted as meanings about the loss that were used to locate blame or responsibility for the death. Other studies have found through Principal Components Analysis that these items coalesced together in parents with children who were diagnosed with Asperger's syndrome (Pakenham, Sofronoff, & Samios, 2004) and caregivers of loved ones with multiple sclerosis (Pakenham, 2008b). The present study is the first known study to examine this subscale in a sample of bereaved individuals.

Contextual Factors Influence the Development of Meaning Making

Gender, cause of death, age of the deceased at his/her time of death, degree of attachment, intrinsic religious motivation (IRM) total score, months since loss, age of the participant at the time of the loss, and religious affiliation (agnostic) were significantly

related to meaning making factors at the bivariate level. However, at the multivariate level, only the degree of attachment, age of the deceased at the time of death, unnatural cause of death, and religious affiliation (agnostic) were associated with meaning factors. Four out of five meaning factors were predicted by the degree of attachment with the deceased, indicating that a closer relationship with the deceased predicted a higher level of preoccupation with the loss and identity change, personal growth and positive reframing, and spiritual meaning making. These results suggest that participants used positive, negative and spiritual types of bereavement-related meaning making when their loved one was close to them and made a strong impact on their life. Positive reframing was not predicted by any contextual factor, including level of closeness to the deceased. Contrary to expectations, other socio-demographic variables and bereavement-related variables (i.e., cause of death and time since loss) were not significantly associated with meaning factors.

Personal growth and preoccupation with the loss/identity change were also significantly predicted by younger age of the deceased when he or she died. Losses that involved the death of a loved one when the deceased was younger significantly predicted both positive meaning making in form of personal growth (positive life changes in the survivors' sense of connection with others, personal strength, and appreciation for life) and negative meaning making in the form of preoccupation with loss/identity change (a continued rumination over the losses' negative impact, non-acceptance, incomprehensibility and the centrality of the loss to the survivors' identity).

Results from this study suggest that when we lose someone close to us, a higher level of meaning making is required rather than a specific type (e.g, negative versus positive). Likewise, losses that involve the death of a loved one who died before their time

are incredibly hard to understand. Therefore, they also require a higher level of meaning making. In the present study, it was found that younger age and level of closeness predict both benefit-finding and preoccupation with loss/identity change. Future studies are needed to identify specific factors that may influence a survivor to make one shift (personal growth) over another (preoccupation with loss/identity change). It is possible that there were unidentified variables (i.e., the ability to accept the loss and move forward) that may lead to the facilitation of personal growth or a continued preoccupation.

Not surprisingly, higher levels of spiritual meaning making were found among participants who use their religion as a master motive in life. For these participants, religious beliefs seem to help them interpret and frame their experience of loss within a spiritual and religious perspective. It was also found that identifying as agnostic (rather than spiritual, religious, or atheist) was a significant predictor of causal attribution, such that participants who identified as agnostics also reported making more frequent causal attributions about the loss. This finding may indicate that participants who are uncertain about religion are less likely to understand the loss of a loved one through religious appraisal, rather they make causal attributions (i.e., the deceased died because of illness, genetics, lifestyle factors, etc.) to help them make sense of a their loss. Causal attribution was the only factor that was not predicted by either degree of attachment or younger age of the deceased. To date, no other study has found an association between religious background and causal attribution meaning making.

Outcomes Associated with Meaning Making Factors

Positive affect was predicted by a closer relationship with the deceased, personal growth, and preoccupation with the loss/identity change. Degree of attachment uniquely predicted higher positive affect, above and beyond other covariates and meaning making factors. This suggests that close relationships with the deceased do not necessarily lead to distress in this sample. Identifying the loss as an opportunity for personal growth was associated with higher positive affect, while a preoccupation with loss/identity change was associated with lower positive affect. These results suggest that the loss of a close loved one was pivotal to the students in this study and was a catalyst for positive or negative psychological change. No other socio-demographic or bereavement-related variables were found to be significantly associated with outcome variables, therefore variables that were not identified in this study may facilitate the relationship between personal growth, preoccupation with the loss/identity change and positive affect.

Results from this study indicate that bereavement-related depression is associated with a variety of factors including characteristics related to the loss (close attachment to the deceased and unnatural/violent cause of death), personal characteristics of the survivor (identifying as agnostic or atheist), and specific meaning making factors (preoccupation/identity change, spiritual meaning making, and personal growth). The loss of a close relationship to violent, unexpected causes is another example of a death that is incredibly difficult to understand and accept. These factors may have influenced continued rumination and the perception of identity change.

It was unexpectedly found that identifying as agnostic was a unique predictorof higher depression. Religious and spiritual beliefs may help to frame and interpret significant losses. Agnostics may feel more uncertainty when faced with an impactful loss and this uncertainty could make them more vulnerable to negative psychological outcomes. For example, this student's description appears to highlight a level of angst related to religious uncertainty in the context of a personally impactful death, "Nana was an extremely, extremely religious (Irish Roman Catholic) woman…I, on the other hand, became a bit more agnostic in my faith…When I saw her for the last time, there was a huge crucifix above her head, her hands were swollen and out of proportion with the rest of her skeletal body, also grasping a crucifix. Her mouth was gaped open, dentures out, groaning, not conscious. It's an image that will forever stay with me. I wasn't ready for it, I broke down. I think the religious aspect of it all made it even more intense and confusing for me. I wasn't sure if it made me feel better for her, or guilty, or just more unsure of everything."

Another surprising relationship was found between spiritual meaning making and depression. Typically, religious variables are thought to influence positive psychological outcomes (Cotton, Levine, Fitzpatrick, Dold, & Targ, 1999; Fehring, Miller, & Shaw, 1997). However, recent studies have begun to investigate the relationship between spiritual struggle and negative mental health outcomes (Exline, Park, Smyth, & Carey, 2011; Wortmann, Park, & Edmondson, 2011). In the present study, the loading of both positive and negative spiritual religious meaning making items together may be indicative of a spiritual struggle to make sense of their loss. Furthermore, some of the items were phrased in such a way that could be interpreted as attempts to make spiritual meaning making rather than a resolution (e.g., "Tried to find a lesson from God in the loss" and "Wondered what I

did for God to punish me"). There may have been differences found if process-focused versus outcome-focused spiritual meaning making items were constructed and compared. Additionally, many items that seemed to represent fate or destiny loaded onto this factor. These particular items could have been endorsed by participants regardless of their level of spirituality. A belief that all life events are predetermined, including significant losses could be related to increased depression via some unidentified variable (e.g., hopelessness, passivity). Results from this study suggest that spiritual meaning making is a complex construct, consisting of process and outcome-oriented domains that include fate/destiny and positive/negative religious appraisals. It is possible that spiritual fate/destiny may predict different adjustment outcomes when compared to negative or positive religious meaning making. To date, there have been no other studies that have compared these religious subscales.

Lower levels of depression were also associated with higher scores on the personal growth factor, while higher levels of depression were associated with preoccupation with loss/identity change. The degree of attachment was no longer statistically significant after meaning making factors were entered, which may indicate that the relationship between the attachment to the deceased and depressed mood is mediated by negative and positive meaning making factors. Together, these results seem to indicate that participants who lost a close loved one to sudden, violent causes and did not have religious frameworks to help make sense of the loss were more likely to report depressed mood. These results build upon the results of Currier et al. (2006) and Keesee et al., (2008) who found that violent, unexpected losses were associated with increased difficulty in sense-making and levels of distress. People who are uncertain about religion may be at greater risk for distress. Further,

participants who continued to think about how their loss impacted them negatively were also more likely to report depression, while participants who perceived the loss as a catalyst for positive change reported less depressed mood. These expand upon earlier studies that used single-item measures of sense-making – rumination or a preoccupation with the loss may be a more accurate depiction of "sense-making." If this is the case, the role of acceptance may be an important factor in post-loss resiliency and positive adjustment.

PTSD was significantly predicted by closer relationships with the deceased, unnatural cause of death, identifying as agnostic, and preoccupation with the loss/identity change. Consistent with previous findings in this study, impactful deaths (intimate relationships with loved ones who died by violent and sudden means) seem to lead to negative mental health outcomes. However, the degree of attachment, agnostic affiliation, and cause of death were no longer significant when the negative meaning making factor (preoccupation with the loss/identity change) was entered into the model. This suggests that the relationship between impactful deaths (intimate relationships with loved ones who died by violent and sudden means) and PTSD may be mediated by preoccupation with the loss/identity change. Bernsten, Rubin, and Siegler (2011) found a similar result in that impact on identity from different stressful life events (measured by the same Centrality of Events Scale) was associated with higher levels of PTSD symptoms and distress among 2,000 healthy older adults. Again, these results indicate that participants who are "stuck" in their grief process, may be at risk to develop higher levels of distress including PTSD symptoms.

Higher levels of prolonged grief disorder were predicted by closer relationships with the deceased, unnatural/violent cause of death, and identification as an agnostic, rather than

religious, spiritual, or atheist. Meaning making factors – preoccupation with the loss/identity and personal growth – also significantly predicted higher PGD symptoms. Agnostic identity predicted higher PGD in the final model, indicating that this identity uniquely influences prolonged grief symptoms. Preoccupation with loss/identity change significantly predicted higher PGD symptoms, while personal growth significantly predicted lower PGD symptoms. The degree of attachment and cause of death did not remain significant once meaning factors were entered into the model. This suggests that the relationship between impactful deaths (intimate relationships with loved ones who died by violent and sudden means) and prolonged grief reactions may be mediated by positive and negative meaning factors (i.e., preoccupation with the loss/identity change and/or personal growth). These findings suggest that the perception of positive life change as a result of the loss may be a protective factor against prolonged grief disorder. Those participants who endorsed higher levels of preoccupation with the loss and a perception that the loss impacted the survivor's identity may also be "stuck" in the grief process, which may lead to higher levels of PGD.

Physical health status was significantly predicted by unnatural cause of death and four meaning making factors – preoccupation with the loss/identity change, spiritual meaning making, personal growth, and positive reframing. Positive meaning making factors – personal growth and positive reframing – significantly predicted better perceived physical health status. Preoccupation with the loss/identity change and spiritual meaning making significantly predicted worse perceived physical health status. Furthermore, the degree of attachment became significant after meaning factors were added to the model which suggests that a closer relationship with the deceased also predicted better physical health, while cause of death was no longer significant when meaning factors were added into the

model. To date, no studies have examined types of meanings made about loss and the relationship to physical health status. These results suggest that meaning making may not only influence psychological adaptation to loss, but may also influence physical symptoms.

Limitations

Given this was a cross-sectional study, causality between bereavement-related characteristics, meaning making factors, and outcomes cannot be inferred. Although in this study, time since loss was not significantly associated with meaning making factors or adjustment outcomes, longitudinal studies are needed to confirm the existence or non-existence of temporal relationships between meaning making types and adjustment.

This study is also limited by the students who self-selected into the study; students who did not opt to participate may differ from the students in this sample. There were high rates of PTSD, depression, and prolonged grief disorder in this sample. Therefore, students with higher symptoms may have been drawn to participate in this study. There may also be higher rates of distress among the general population at the university given its urban location. It should also be noted that high scores on these clinical pathology measures should be interpreted with caution, a high scores only suggest possible pathology. Measures (particularly the PGD-13 which assessed prolonged grief disorder) lack cultural sensitivity.

Although this was a diversely populated study with participants ranging in age, race and ethnicity, most students were young women from the United States who identified as a member of a Christian-affiliated religion. Students in this study also predominately identified as economically stable. Therefore, results of this study may not necessarily apply to male students from other religious or non-religious backgrounds and socio-economic

standpoints. Particularly, students with access to fewer economic resources may be more at risk for greater distress. Future studies are needed to explore the relationships between lower SES, meaning making, and grief reactions.

Given the exploratory nature of this study, it was necessary to adapt or employ measures that were not designed to specifically assess the various domains of interest. Specifically, the Sense-Making in Care-giving Scale was originally created for care-givers and was adapted for use with bereaved students. The Centrality of Events Scale was used as a proxy of post-loss identity change. Items were not separated by process vs. outcome domains of meaning making. As was mentioned earlier, process and outcome aspects of meaning making may be uniquely associated with different outcomes. Furthermore, meaning making items were selected based on all relevant theories of meaning making constructs and available and reliable measures. Therefore, the five factor solution produced by this study is limited by the number of items that were included in the Principal Components Analysis. In other words, there may be other unidentified aspects of meaning that were not included in the Principal Components Analysis that may play important roles in psychological adjustment.

However, strengths of this study include the identification of various types of meanings made about loss in a racially diverse sample of undergraduate and graduate students. The five factor solution of meaning making adds depth to the pre-existing conceptualization of bereavement-related meaning making, which included sense-making, benefit-finding, and identity reconstruction (Davis, Nolen-Hoeksema, & Larson, 1998; Gillies & Neimeyer, 2006). To date, this is the only study that has tested identity

reconstruction in the wake of bereavement, how it is associated with meaning making types, and post-loss psychological and physical health outcomes.

This study also identified that the degree of attachment and age of the deceased at his/her time of death may be more relevant than other socio-demographic and bereavement-related factors in the development of meaning making. This is consistent with the theoretical conceptualization of prolonged grief disorder as a disorder of "separation anxiety" (Holland & Neimeyer, 2011). Close attachment and younger age of the deceased may influence personal growth or rumination. Further, close attachment combined with unnatural/violent cause of death, uncertainty about religious and spiritual beliefs and continued rumination about the loss and its impact on identity may be risk factors for prolonged grief, depression, and PTSD symptoms in this population.

Directions for Future Research

Although this study adds to existing theoretical perspectives and used more sensitive methods of measurement than previous studies, future research should continue to define meaning making conceptually while also utilizing more rigorous research designs and measures. Future studies are needed to empirically test the three categories of meaning making found in this study among other bereaved samples. More accurate measurement of process vs. outcome domains of meaning making is needed. Therefore, the development of a measure of meaning making that includes process and outcome domains of meaning making across the three categories identified in this study (positive, negative, and spiritual) would be an important next step moving forward.

It is also unclear how long it takes for people to resolve negative meanings about loss and how rumination is related to the search for meaning. Therefore, the overlap between the search for meaning and rumination is an area of future research. Several studies have highlighted the negative mental health consequences associated with searching for meaning, but have not identified what this search consists of or mechanisms. Not everyone searches for meaning in loss, but no studies have examined this subset of the population. If the search for meaning is part of maladaptive coping, more research is needed to understand how people come to terms with loss without the need to search for meaning. Questions remain, such as what kinds of meaning reconstruction lead to successful coping without engaging a survivor in the unsuccessful search for meaning? What kinds of meanings could help survivors who are stuck in the search for meaning become unstuck? What role does acceptance play in positive adaptation to loss as well as other positive, adaptive meaning reconstructions that have not yet been identified? Are positive meanings made about losses related to lower levels of distress by way of acceptance? For example, acceptance and moving forward may be an important element to healing. One student wrote "I made sense of my friend's death by knowing that it is a part of life, these things just happen. There's no bringing that person back and there's only one way to move, and that is forward…it is a situation that is passed now and can't be changed. All we can do after a death is grieve and always remember the good times we had with that person…I feel happy that we had good times and sad that she's gone forever but there's no other healthy way than to find inner peace."

There is a lack of control groups for comparison, and there are a limited number of prospective or longitudinal studies. Understandably it is difficult or impossible to conduct

prospective studies of bereavement, especially if the loss is sudden in nature. However, studies in which family members are expecting the loss of a sick relative may be one method that could be used to study important causal connections between pre-loss levels of functioning, meaning making, and adaptation post-loss. These types of studies may reveal unidentified variables that may be contributing to the significant relationships reported in this study.

Participants also discussed a secular or spiritual belief in predetermined fate and destiny to help make sense of death. Examples of this included, "I believe that everything happens for a reason…with everything that does happen, good or bad, there is a lesson to be taught, and something to gain, even from a very traumatic experience" or "I believe that God controls everything, and that He does everything for a reason. I believe my loved one was taken from us on earth so that she could finally accompany her husband in heaven." Most research on spiritual coping has been conducted in Westernized countries among Christian denominations. Future studies are needed to determine if there are differences, particularly considering Eastern religious traditions and how meaning is made from these frameworks. For example, qualitative data from this study suggested that the Buddhist perspective on death and meaning is different from a Christian perspective on death. Buddhist students spoke about their beliefs in impermanence and how this idea brings them comfort, "…as a Buddhist I have been taught that death is part of life. At the point when one reaches death it is also when the suffering from life ends, and that the occurrence of death is not a bad thing. We should embrace death. But, there are times when I would catch myself thinking the absolute opposite. I would think that death is the worst thing that can happen to the person and the people that surrounds them. When this happens to me, I would remind

myself again death is the best way to escape from the sufferings on this earth. Then, I am back to normal again." Another Buddhist student wrote about how his beliefs help him to find acceptance, "…all living things are brought into this life to transform the darkness to light and have the chance to experience consciousness. Buddhism shows the way to accept death and see the individual as working for enlightenment here on earth. If one lives a moral, socially enhancing life, the life and time they spend on Earth will be as joyous as the heavens." These quotes were different from Christian students who indicated it was their faith in Jesus and an afterlife that helped them make sense of their loss and find comfort.

Another important area of future research includes the relationship between types of meaning and physical health. Future studies are needed to examine the role of objective health indices, meaning making, and grief outcomes. For example, studies may find that the relationship between meaning making and physical health is mediated by physiological measures of stress (i.e., blood pressure, sleep and eating patterns, and physical effects of substance use).

Furthermore, few studies have also examined what Armour (2006; 2010) identified as the meaningful behavior change after experiencing the loss of a loved one. Research is needed to determine how changes in meaningful behaviors can influence positive meaning reconstruction and psychological adjustment. For example, how do specific behaviors (i.e., rituals used to honor the deceased and activities that provide a sense of meaning or purpose in life) facilitate a cognitive meaning making process and successful post-loss adjustment? Additionally, one student wrote "I try to live a more active and community focus lifestyle. I feel while I am still here I should also use my time to help others in need. This is something I have learned from the person who passed away. His goal in life was to help others, and he

did. This is something I too want to achieve in my life." It would be interesting for future research to examine the relationship between positive adaptation and a survivor's engagement in meaningful life goals, altruistic pursuits, and health behavior changes.

Additionally, future research is necessary to continue to explore the relationship between the co-construction of meanings made about loss and mental health outcomes. There is evidence that shared meanings are constructed within the family system (Davis, Harasymchuk, & Wohl, 2012; Nadeau, 1998) and that similar meanings shared among family members are associated with lower depressive symptoms (Davis, Harasymchuk, & Wohl, 2012). In the present study, one student wrote about shared meanings created among family, "…I am a system of support for my mother who was incredibly close to him…I find that we both find comfort in remembering and telling stories." Future studies should examine this shared, interpersonal process to provide a more complete picture of meaning making as a response to bereavement.

Clinical Implications

An important aspect of meaning making research includes its implications for psychotherapy and grief counseling. Some interventions have already been developed that incorporate aspects of meaning making among other clinical populations. For example, Linehan (1993) included meaning in her manual as an important part to treating Borderline Personality Disorder. Other studies have examined the efficacy of a meaning making intervention among cancer patients and have found that in comparison to control group participants, participants who completed the meaning making intervention reported increases in self-esteem, optimism, and self-efficacy (Lee, Cohen, Edgar, Laizner, &

Gagnon, 2006). To date, no meaning-focused interventions have been developed or tested within a bereaved population.

Future work is necessary before clinical implications can be recommended strongly. For example, if future studies determine that meaning making factors cause psychological adaptation to trauma, clinical interventions could be modified to help facilitate meaning. If causal links are established between the unsuccessful search for meaning and increases in distress, clients could be aided and encouraged to find benefits in their loss or redirected towards acceptance. Traumatic losses are difficult to make sense of and find meaning. Recommending that clients "find the silver lining" in these losses may not always be realistic and cause unintended harm (Wortman, 2004). Mental health workers should be aware of this, and not force meaning making on their clients nor pathologize the clients who do not attempt to find meaning in their loss.

Conclusions

Although this study examined losses involving the death of a loved one, any type of trauma inherently involves losses. While coping with cancer, a survivor may lose aspects of her identity as a physically healthy and sexually attractive woman. A sexual assault survivor likely loses her sense of safety and security while walking the streets alone at night. A survivor of a natural disaster, such as Hurricane Katrina or the earthquake in Haiti, loses not only family and friends but also a roof over her head and daily meals to eat. So it not surprising that survivors of all types of traumas attempt to understand, make sense of, and find existential significance in their experiences in an effort to regain aspects of their world

and their identities that were taken away. Understanding how this process occurs will ultimately lead to better clinical interventions that will help our clients heal.

APPENDIX A

TABLES

Table 1. Socio-Demographic and Bereavement-Related Characteristics			
Characteristic		n	%
Sex	Male	57	25.0
	Female	171	75.0
Racial Background	Alaskan Native/Native American	1	0.4
	Asian	35	15.3
	Black or African American	32	14.0
	Latino(a)/Hispanic (Non-White)	13	5.7
	Latino(a)/Hispanic (White)	20	8.7
	Pacific Islander/Native Hawaiian	3	1.3
	White/Caucasian	127	55.5
	Multi-racial	11	4.8
	Other	12	5.2
Total Household Income	$0 - $15,000	54	24.2
	$15,001 - $25,000	36	16.1
	$25,001 - $35,000	29	13.0
	$35,001 - $50,000	32	14.3
	$50,001 - $75,000	32	14.3
	$75,001 - $100,000	21	9.4
	More than $100.001	19	8.5
Financial Situation	Routinely unable to purchase sufficient food or other basic necessities	7	3.1
	Occasionally unable to purchase sufficient food or other basic necessities	15	6.7
	Sometimes worried about having enough money for the necessities	110	48.9
	Never worried about having enough money for the necessities	73	32.4
	Has more than enough money for	20	8.9

	necessities and some luxuries		
Marital Status	Single	176	77.2
	Cohabitating/Married	43	18.8
	Separated/Divorced	9	3.9
Education Level	1 semester to 3 years of college	173	76.9
	Bachelor's Degree/Graduate Degree	52	23.1
First Language	English	167	72.9
	Spanish	13	5.7
	Other	49	21.4
Country of Origin	USA	173	75.5
	Other	56	24.5
Religious Background	Atheist	25	5
	Agnostic	28	22
	Member of Organized Religion	93	53
	Spiritual/Not Religious	80	6
Religious Affiliation	Denomination of Christianity	86	80.4
	Jewish	11	10.3
	Buddhist	10	9.3
Relationship to the Deceased	Family Member	152	66.7
	Friend	76	33.3
Family Member	Grandparent	54	37.7%
	Aunt/Uncle	29	20.3%
	Father	18	12.6%
	Cousin	16	11.2%
	Great Grandparent or Great Aunt/Uncle	6	4.2%
	Brother	6	4.2%
	Mother	6	4.2%
	Other	8	5.6%

Cause of Death	Natural	151	65.9
	Car or Motorcycle Accident	24	10.5
	Suicide	21	9.2
	Homicide	14	6.1
	Drugs/Alcohol	13	5.7
	Other Accident	5	2.2
Impact on Survivor	No impact/A little impact	37	16.3
	Moderate	44	19.4
	Quite a bit	67	29.5
	Very significant	79	34.8
Level of Closeness	Not at all close	13	5.7
	Somewhat close	35	15.4
	Moderately close	55	24.2
	Very close	67	29.5
	Extremely close	57	25.1
Forced reporting to the police due to circumstances of death	No	211	92.5
	Yes	17	7.5
Current use of psychopharmacology for emotional difficulties	No	186	83.0
	Yes	38	17.0
Engagement in psycho-therapy	No, never	130	57.3
	Yes, in the past	66	29.1
	Yes, currently	31	13.7

Table 2. Means and Standard Deviations of Selected Demographic and Bereavement-Related Characteristics (N = 229)			
		M	SD
Age at time of survey (years)	Range (18 – 61)	24.78	8.16
Time Since Loss (months)		17.20	13.27
Age of deceased at time of loss (years)	Range (1 – 99)	51.28	26.10
Age of participant at time of loss (years)	Range (14 – 61)	23.11	8.11
Number of other deaths experienced within the last three years		1.78	0.98

Table 3: Means and Standard Deviations for Study Variables

	Mean	Standard Deviation
IRM	18.93	10.06
COE	20.90	7.20
CERQ – Self-blame	2.70	1.46
CERQ – Acceptance	6.40	2.64
CERQ – Rumination	4.68	2.11
CERQ – Positive Refocus	5.30	2.03
CERQ – Positive Reappraisal	6.22	2.42
CERQ – Perspective	4.28	2.18
CERQ – Catastrophizing	4.09	2.15
CERQ – Blaming Others	3.17	1.92
CERQ – Refocus on Planning	4.34	1.95
SMCS – Incomprehensibility	12.72	3.77
SMCS – Acceptance	21.10	3.76
SMCS – Catalyst for Change	48.03	10.06
SMCS – Spiritual Perspective	13.84	4.49
SMCS – Causal Attribution	15.25	5.61
RCOPE – Positive	8.97	4.31
RCOPE – Negative	3.88	1.62
CES-D	18.06	11.86
PANAS – Positive Affect	29.02	8.44
PANAS – Negative Affect	21.46	7.99
PCL-S	30.46	11.57
PGD-13	21.92	8.43
HRGC	93.01	32.92
SF20 – Perceived Health Status	14.81	3.47

IRM = Intrinsic Religious Motivation; COE = Centrality of Events; CERQ = Cognitive Emotion Regulation Questionnaire; SMCS = Sense-Making in Caregiving Scale; RCOPE = Religious Coping; CES-D = Center for Epidemiological Studies – Depression Scale; PANAS = Positive and Negative Affect Schedule; PCL-S = The PTSD Checklist – Specific;

PGD-13 = Prolonged Grief Disorder; HRGC = The Hogan Grief Reaction Checklist; SF20 = The MOS Short-Form Health Survey

Table 4

Intercorrelations for Outcome Variables

Measures	1	2	3	4	5	6
PANAS – Positive Affect	--					
PANAS – Negative Affect	-0.17*	--				
CES-D	-0.48**	0.74**	--			
PCL-S	-0.18**	0.62**	0.73**	--		
PGD-13	-0.23**	0.68**	0.71**	0.69**	--	
HRGC	-0.28**	0.75**	0.75**	0.73**	0.90**	--
SF20 – Perceived Health Status	0.38**	-0.53**	-0.61**	-0.35**	-0.45**	-0.50**

Note. *p < 0.5. **p <0.01. CES-D = Center for Epidemiological Studies – Depression Scale; PANAS = Positive and Negative Affect Schedule; PCL-S = The PTSD Checklist – Specific; PGD-13 = Prolonged Grief Disorder; HRGC = The Hogan Grief Reaction Checklist; SF20 = The MOS Short-Form Health Survey

Table 5

Factor Loadings from Principal Components Analysis with Varimax Rotation Five Factor Solution

Item	Factor Loading
Rumination/Negative Impact on Identity	
I keep thinking about how terrible it is what I have experienced	.76
I often think about the effects this loss will have on my future	.74
I continually think how horrible the loss has been	.72
This loss was a turning point in my life	.70
I feel that this loss has become part of my identity	.68
I feel that this loss has become a central part of my life story	.66
This loss permanently changed my life	.66
I accept the loss and get on with life	-.63
I am preoccupied with what I think and feel about what I have experienced	.61
I can't make sense of the loss	.60
The loss has taken more than it has given	.60
This loss has colored the way I think and feel about other experiences	.59
This loss has become a reference point for the way I understand myself and the world	.58
I often think about how I feel about what I have experienced	.58
I accept the loss	-.56
The loss has stolen my dreams for the future	.54
Because of the loss my relationships have changed	.54
Personal Growth	
Because of the loss I have grown as a person	.76
Because of the loss I have changed in positive ways	.74
The loss has been like a "teacher" to me	.69
The loss has changed my view on what is important in life	.66
The value I place on relationship has changed	.61
The loss has shown me what is important in life	.60
The loss has given me a different view on life	.59
Because of the loss I now more fully appreciate life	.56
The loss has added nothing to my life	-.55
I think that I can become a stronger person as a result of what has happened	.55
The loss has helped to sort out some of my relationships	.54
I have new life goals because of this loss	.53
This loss has helped me find purpose in life	.52
The loss has given me greater understanding of others	.51
The loss has given me new opportunities	.50

Spiritual/Religious Meaning	
The loss was part of God's plan/will for me	.82
Saw my situation as part of God's plan	.81
Tried to see how God might be trying to strengthen me in this situation	.76
Tried to find a lesson from God in the loss	.74
Thought that the loss might bring me closer to God	.70
The loss has happened so I can grow spiritually in my faith	.70
Our lives are mapped out from birth	.66
This loss is destiny or fate	.65
This loss happened for a purpose	.57
Wondered what I did for God to punish me	.53
I see the loss as a "test"	.53
I was chosen to deal with this loss	.50
Everything happens for a reason, including this loss	.48
Felt punished by God for my lack of devotion	.48
Decided that God was punishing me	.45
Positive Reframing	
I think that I have to accept the loss	.74
I think that I have to accept that this has happened	.67
I tell myself that there are worse things in life	.60
I think about a plan of what I can do best	.59
I think that it hasn't been too bad compared to other things	.45
Causal Attribution	
…'s death was partly due to his/her personal problems	.75
…'s life style caused his/her death	.69
Certain personality characteristics caused …'s death	.65
Stress contributed to the death of ….	.61
…'s death was related to an inherited trait	.54

Note. N = 229.

Table 6

Items from the Principal Components Analysis Not Retained

Scale	
Cognitive Emotion Regulation Questionnaire (CERQ)	Sense-Making in Care-giving Scale (SMCS)
Items	Items
I feel that I am the one who is responsible	There is nothing positive about this situation
I think of something nice instead of what has happened	The situation has given me greater understanding of suffering
I think that basically the cause must lie within myself	…'s death was caused by genes and environmental factors
I think about how to change the situation	The situation is a fact of life
	It's not the situation, it is how I manage it that counts
	The situation was a wake-up call to make changes in my life

Table 7

Intercorrelations between Meaning and Contextual Factors

	1	2	3	4	5
Preoccupation with Loss/Identity Change	--				
Personal Growth	.379**	--			
Spiritual Meaning making	.200**	.449**	--		
Positive Reframing	.071	.336**	.240**	--	
Causal Attribution	.293**	.136*	.182**	.095	--
Age of the participant at the time of death	-0.47	-.073	-.139*	.002	-.006
Age of the deceased at the time of death	-.253**	-.217**	-.051	.065	-.158*
Degree of attachment	.486**	.262**	.131*	.172*	.081
Time since loss	.085	.107	.166*	.053	.063
IRM Total Score	-.025	.042	.544**	-.001	.070
Age of the participant at study entry	-.049	-.064	-.117	.020	-.011

Note. *p < 0.5. **p <0.01. IRM = Intrinsic Religious Motivation.

Intercorrelations between Meaning and Contextual Factors Continued

	6	7	8	9	10
Preoccupation with Loss/Identity Change					
Personal Growth					
Spiritual Meaning making					
Positive Reframing					
Causal Attribution					
Age of the participant at the time of death	--				
Age of the deceased at the time of death	.182**	--			
Degree of attachment	.066	.081	--		
Time since loss	-.190**	-.087	.138*	--	
IRM Total Score	-.140*	-.040	-.110	.096	--
Age of the participant at study entry	.990**	.174*	.101	-.051	-.121

Note. *p < 0.5. **p <0.01. IRM = Intrinsic Religious Motivation.

Table 8

Intercorrelations between Outcome Variables and Contextual Factors

	1	2	3	4	5
Positive PANAS	--				
CES-D	-.483**	--			
PCL-S	-.175**	.725**	--		
PGD-13	-.227**	.713**	.693**	--	
SF20	.382**	-.607**	-.351**	-.447**	--
Age of the participant at the time of death	-.026	-.009	.015	.014	.002
Age of the deceased at the time of death	.003	-.080	-.117	-.120	.017
Degree of attachment	.130	.154*	.288*	.254*	.050
Time since loss	.093	.013	-.054	.067	-.031
IRM Total Score	.121	-.027	-.077	-.026	-.002
Age of the participant at study entry	-.005	-.012	-.001	0.38	-.022

Note. *p < 0.5. **p <0.01. PANAS = Positive and Negative Affect Schedule (Positive Affect Subscale); CES-D = Center for Epidemiological Studies – Depression Scale; PCL-S = The PTSD Checklist – Specific; PGD-13 = Prolonged Grief Disorder; SF20 = The MOS Short-Form Health Survey

Intercorrelations between Outcome Variables and Contextual Factors Continued

	6	7	8	9	10
Positive PANAS					
CES-D					
PCL-S					
PGD-13					
SF20					
Age of the participant at the time of death	--				
Age of the deceased at the time of death	.182**	--			
Degree of attachment	.066	.081	--		
Time since loss	-.190**	-.087	.138*	--	
IRM Total Score	-.140*	-.040	-.110	.096	--
Age of the participant at study entry	.990**	.174*	.101	-.051	-.121

Note. *p < 0.5. **p <0.01. PANAS = Positive and Negative Affect Schedule (Positive Affect Subscale); CES-D = Center for Epidemiological Studies – Depression Scale; PCL-S = The PTSD Checklist – Specific; PGD-13 = Prolonged Grief Disorder; SF20 = The MOS Short-Form Health Survey

Table 9
Regression Analysis Predicting Personal Growth
N=229

Variable	F	sig F	R^2	β	sig.
	4.096	.000	.182		
Gender				0.040	0.557
Cause of Death				0.038	0.662
Age of the Deceased				-0.202	0.021
Degree of Attachment				0.362	0.000
Intrinsic Religious Motivation				0.041	0.610
Atheist				0.020	0.796
Agnostic				0.054	0.512
Religious				0.039	0.614
Time Since Loss				0.014	0.841
Age of the Participant at the Deceased's Time of Death				-0.069	0.338

Table 10.
Regression Analysis Predicting Positive Reframing
N=229

Variable	F	sig F	R^2	β	sig.
	1.208	0.289	0.063		
Gender				0.026	0.720
Cause of Death				-0.008	0.931
Age of the Deceased				0.058	0.540
Degree of Attachment				0.219	0.005
Intrinsic Religious Motivation				0.025	0.773
Atheist				0.082	0.321
Agnostic				0.090	0.317
Religious				0.147	0.082
Time Since Loss				-0.016	0.833
Age of the Participant at the Deceased's Time of Death				-0.044	0.571

Table 11.
Regression Analysis Predicting Preoccupation with Loss/Identity Change
N=229

Variable	F	sig F	R^2	β	sig.
	11.868	0.000	0.391		
Gender				0.071	0.231
Cause of Death				0.172	0.023
Age of the Deceased				-0.157	0.038
Degree of Attachment				0.527	0.000
Intrinsic Religious Motivation				0.096	0.170
Atheist				0.029	0.657
Agnostic				-0.110	0.122
Religious				0.098	0.143
Time Since Loss				-0.044	0.469
Age of the Participant at the Deceased's Time of Death				-0.031	0.620

Table 12.
Regression Analysis Predicting Causal Attribution
N=229

Variable	F	sig F	R^2	β	sig.
	1.85	0.056	0.092		
Gender				-0.020	0.783
Cause of Death				0.168	0.069
Age of the Deceased				-0.041	0.654
Degree of Attachment				0.072	0.343
Intrinsic Religious Motivation				0.104	0.227
Atheist				-0.029	0.719
Agnostic				-0.213	0.015
Religious				-0.095	0.248
Time Since Loss				0.024	0.750
Age of the Participant at the Deceased's Time of Death				0.042	0.577

Table 13.
Regression Analysis Predicting Spiritual Meaning making
N=229

Variable	F	sig ΔF	R^2	β	sig.
	11.077	0.000	0.375		
Gender				-0.095	0.115
Cause of Death				0.011	0.889
Age of the Deceased				-0.031	0.680
Degree of Attachment				0.218	0.001
Intrinsic Religious Motivation				0.490	0.000
Atheist				-0.143	0.033
Agnostic				-0.020	0.979
Religious				-0.009	0.895
Time Since Loss				0.077	0.216
Age of Participant at Deceased's Time of Death				-0.090	0.151

Table 14.
Hierarchical Multiple Regression Analyses Predicting Positive Affect
N=229

	F	sig. F	R^2	
Step 1:	2.026	0.076	0.045	
Variable	β_{entry}	sig.	β_{final}	sig.
Degree of Attachment	0.133	0.05	0.197	0.009
Atheist	-0.086	0.238	-0.070	0.323
Agnostic	0.101	0.188	0.069	0.345
Religious	-0.016	0.833	0.025	0.732
Cause of Death	-0.068	0.314	-0.038	0.577
	F	sig. F	R^2	
Step 2:	4.529	0.000	0.178	
Variable	β_{entry}	sig.	β_{final}	sig.
Personal Growth			0.341	0.000
Positive Reframing			0.012	0.862
Preoccupation with Loss/Identity Change			-0.325	0.000
Causal Attribution			0.019	0.777
Spiritual Meaning making			0.013	0.870

Table 15.
Hierarchical Multiple Regression Analyses Predicting Depression
N=229

	F	sig. F	R^2	
Step 1:	3.996	0.002	0.087	
Variable	β_{entry}	sig.	β_{final}	sig.
Degree of Attachment	0.143	0.034	-0.123	0.064
Atheist	0.074	0.302	0.127	0.043
Agnostic	-0.183	0.016	-0.157	0.016
Religious	0.003	0.967	-0.039	0.533
Cause of Death	0.125	0.063	-0.016	0.782
	F	sig. F	R^2	
Step 2:	12.311	0.000	0.376	
Variable	β_{entry}	sig.	β_{final}	sig.
Personal Growth			-0.218	0.002
Positive Reframing			0.021	0.727
Preoccupation with Loss/Identity Change			0.596	0.000
Causal Attribution			0.032	0.594
Spiritual Meaning making			0.239	0.000

Table 16.
Hierarchical Multiple Regression Analyses Predicting Posttraumatic Stress Disorder N=229

	F	sig. F	R^2	
Step 1:	7.157	0.000	0.147	
	β_{entry}	sig.	β_{final}	sig.
Degree of Attachment	0.284	0.000	-0.029	0.640
Atheist	0.079	0.256	0.094	0.106
Agnostic	-0.147	0.046	-0.087	0.150
Religious	0.086	0.224	0.024	0.685
Cause of Death	0.134	0.040	-0.047	0.396
	F	sig. F	R^2	
Step 2:	17.476	0.000	0.463	
	β_{entry}	sig.	β_{final}	sig.
Personal Growth			-0.075	0.242
Positive Reframing			0.024	0.674
Preoccupation with Loss/Identity Change			0.656	0.000
Causal Attribution			0.093	0.100
Spiritual Meaning making			0.044	0.483

Table 17.
Hierarchical Multiple Regression Analyses Predicting Prolonged Grief
N=229

	F	sig. F	R^2	
Step 1:	6.876	0.000	0.137	
Variable	β_{entry}	sig.	β_{final}	sig.
Degree of Attachment	0.242	0.000	-0.105	0.054
Atheist	-0.035	0.616	0.019	0.708
Agnostic	-0.179	0.014	-0.142	0.008
Religious	0.105	0.133	0.044	0.400
Cause of Death	0.152	0.018	-0.029	0.546
	F	sig. F	R^2	
Step 2:	27.922	0.000	0.570	
Variable	β_{entry}	sig.	β_{final}	sig.
Personal Growth			-0.212	0.000
Positive Reframing			0.044	0.370
Preoccupation with Loss/Identity Change			0.749	0.000
Causal Attribution			0.032	0.519
Spiritual Meaning making			0.245	0.000

Table 18.
Hierarchical Multiple Regression Analyses Predicting Perceived Physical Health Status N=229

	F	sig. F	R^2	
Step 1:	1.761	0.122	0.043	
Variable	β_{entry}	sig.	β_{final}	sig.
Degree of Attachment	0.049	0.485	0.257	0.001
Atheist	-0.101	0.183	-0.118	0.100
Agnostic	0.076	0.340	0.064	0.392
Religious	-0.027	0.721	0.030	0.682
Cause of Death	-0.137	0.053	-0.056	0.416
	F	sig. F	R^2	
Step 2:	5.509	0.000	0.222	
	β_{entry}	sig.	β_{final}	sig.
Personal Growth			0.273	0.001
Positive Reframing			-0.159	0.023
Preoccupation with Loss/Identity Change			-0.484	0.000
Causal Attribution			0.037	0.594
Spiritual Meaning making			-0.150	0.053

APPENDIX B

OPEN-ENDED QUESTIONS

Participants were asked respond in their own words to seven questions to help us understand their personal experience with loss. The following open-ended questions were used to understand how meaning making is influenced by contextual factors:

1. Can you identify any religious beliefs or spiritual beliefs that helped you make sense of the loss?

2. Have any past experiences in your life helped to prepare you for the loss of this person?

3. Have you spoken about your grief with friends, family members, or others? Have these people influenced the way you think about or understand the death of this person? If so, how?

4. Has the way you think about the death changed over time? Can you say how it has changed?

5. As a result of the loss of your loved one, have you participated in any altruistic or volunteer work? For example, have you participated in advocacy for nonviolence, suicide prevention, safer driving policies, cancer prevention, etc.?

6. As a result of the loss of your loved one, have you taken better care of your health (e.g., healthy diet and exercise?)

APPENDIX C

DEMOGRAPHICS QUESTIONNAIRE

The following questions help us get a better sense of who you are. We know that these categories do not fully capture the complexities of each individual's experience, however they are an attempt to reflect the diversity of people's identities. Remember that you are free to choose not to respond to any questions that you are not comfortable answering.

1. What is your current age? _____

2. What is your biological sex?

☐ Male ☐ Female ☐ Intersex

3. Marital status: *(select one):*

☐ Married ☐ Cohabitating ☐ Separated ☐ Divorced ☐ Widowed ☐ Single

4. What was the first language you learned to speak?

☐ English ☐ Other (please specify)

_____

5. If English is not your first language, how many years have you been speaking English?

_____

Racial and Ethnic Background

We're interested in getting a complete picture of your racial and ethnic background. Because this information can be so complex, we are going to ask you several questions about your race and ethnicity in order to get as complete a picture as possible.

6. Racial categories are based on visible attributes (often skin or eye color and certain facial and bodily features) and self-identification. In your own words, to which racial group or groups do you belong?

_____

7. Ethnicity typically emphasizes the common history, nationality, geographic distribution, language, cuisine or dress of groups of people rather than their racial background (such as Cuban, Haitian, Cambodian, African-American, Ukrainian, etc.). In your own words, with which ethnic group or groups do you identify?

_____

8. In what country were you born?

_____

9. Which group below most accurately describes your racial background? (select all that apply):

- ☐ Alaskan Native/Native American
- ☐ Asian
- ☐ Black or African American
- ☐ Latino(a)/Hispanic (Non-White)
- ☐ Latino(a)/Hispanic (White)
- ☐ Pacific Islander/Native Hawaiian
- ☐ White or Caucasian
- ☐ Multiracial (please specify) ____
- ☐ Other (please specify)_____

10. What is the year in college or post-college degree work you've completed?

- ☐ 1-3 years of college
- ☐ College degree (B.A., B.S.)
- ☐ Master's degree (e.g. MA, MBA)
- ☐ Professional degree (e.g. MD, PhD)

11. Currently, your total household annual income level is:

- ☐ $0 - $15,000
- ☐ $15,001 – $25,000
- ☐ $25,001 – $35,000
- ☐ $35,001 - $50,000
- ☐ $50,001 - $75,000
- ☐ $75,001 - $100,000
- ☐ $100,001 - $200,000
- ☐ More than $200,000

12. What is the total number of people who currently rely on this income (including yourself)?: _____

13. Do you have any children? ☐ yes ☐ no

14. Do you provide financial support for your children? ☐ yes ☐ no

15. Growing up, your family's average annual income level was:

- ☐ $0 - $15,000
- ☐ $15,001 – $25,000

☐ $25,001 – $35,000
☐ $35,001 - $50,000
☐ $50,001 - $75,000
☐ $75,001 - $100,000
☐ $100,001 - $200,000
☐ More than $200,000

16. What is the total number of people who relied on this income (including yourself)?: _____

17. How would you describe the financial situation for you now?

☐ Routinely unable to purchase sufficient food or other basic necessities
☐ Occasionally unable to purchase sufficient food or other basic necessities
☐ Sometimes worried about having enough money for the necessities
☐ Never worried about having enough money for the necessities
☐ Had more than enough money for necessities and some luxuries

18. Of the parent(s) who raised you, (mother, father, step-parent, legal guardian/s), what is the highest level of education completed?

☐ 8th grade or less
☐ 1-3 years of high school
☐ High school graduate
☐ Vocational school/other non-college
☐ 1-3 years of college
☐ College degree
☐ Graduate work

19. Are you currently taking medication for any psychiatric or emotional difficulties?

☐ No ☐ Yes

20. Have you ever, or are you currently engaged in therapy for any psychiatric or emotional difficulties?

☐ No, never ☐ Yes, in the past ☐ Yes, currently

21. Which of the following best describes your religious or spiritual beliefs?

___ Atheist – I do not believe in the existence of a supreme being or beings.

___Agnostic – I believe it is impossible to know anything about God or about the creation of the universe and refrain from commitment to any religious doctrine

___I am a member of an organized religion or religious sect (e.g. AME, Tibetan Buddhist, etc.). Please specify: _____

___I consider myself a spiritual person but do not identify with any organized religion

APPENDIX D

BEREAVEMENT QUESTIONNAIRE

The following questions refer to your experience with bereavement. Bereavement is the emotional process that is experienced after someone close to you has died. Some people have experienced many losses over the course of their lifetime. To answer these questions, please think about the most significant loss you've ever experienced. Please answer these questions in reference to the death of someone close to you that impacted your life greatly.

1. How did this person die?

☐ natural death (e.g., illness, heart attack, cancer) ☐ car accident ☐ homicide ☐ suicide

☐ other accident ☐ other

2. What was your relationship to the person who died:

☐ family member ☐ friend

3. How close to the deceased would you say you were?

Not at all close		*Moderately close*		*Very close*
1	2	3	4	5

4. While this person was alive, what was the impact of their life on yours?

Not at all significant		*Moderately significant*		*Very significant*
1	2	3	4	5

4. When did this person die? Please write in the approximate day, month, and year (e.g., December 3, 2010)_____

5. How old was this person when he/she died?_____

6. How old were you when this person died?_____

7. Due to the circumstances of the death, were you forced to talk about it with the police?

☐ Yes ☐ No

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